

**BOTANICAL SURVEYS**

**SONOMA COUNTY AIRPORT**

**2002-2004**

**SONOMA COUNTY, CALIFORNIA**

**LSA**

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Submitted to:

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LSA Project No. SOC430

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## **1.0 INTRODUCTION**

This report presents the results of focused surveys for special-status plant species and sensitive plant communities/habitats conducted on the Charles M. Schultz - Sonoma County Airport (Airport) by LSA Associates, Inc. (LSA) during the spring and early summer of 2003 and 2004. Two years of surveys are required by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) for four endangered vernal pool species on the Santa Rosa Plain. Although the surveyed areas were those that are associated with potential runway extension alternatives for the Airport, other potential special status plant habitats within the Airport property were also surveyed.

### **1.1 LOCATION AND SURVEY AREA DESCRIPTION**

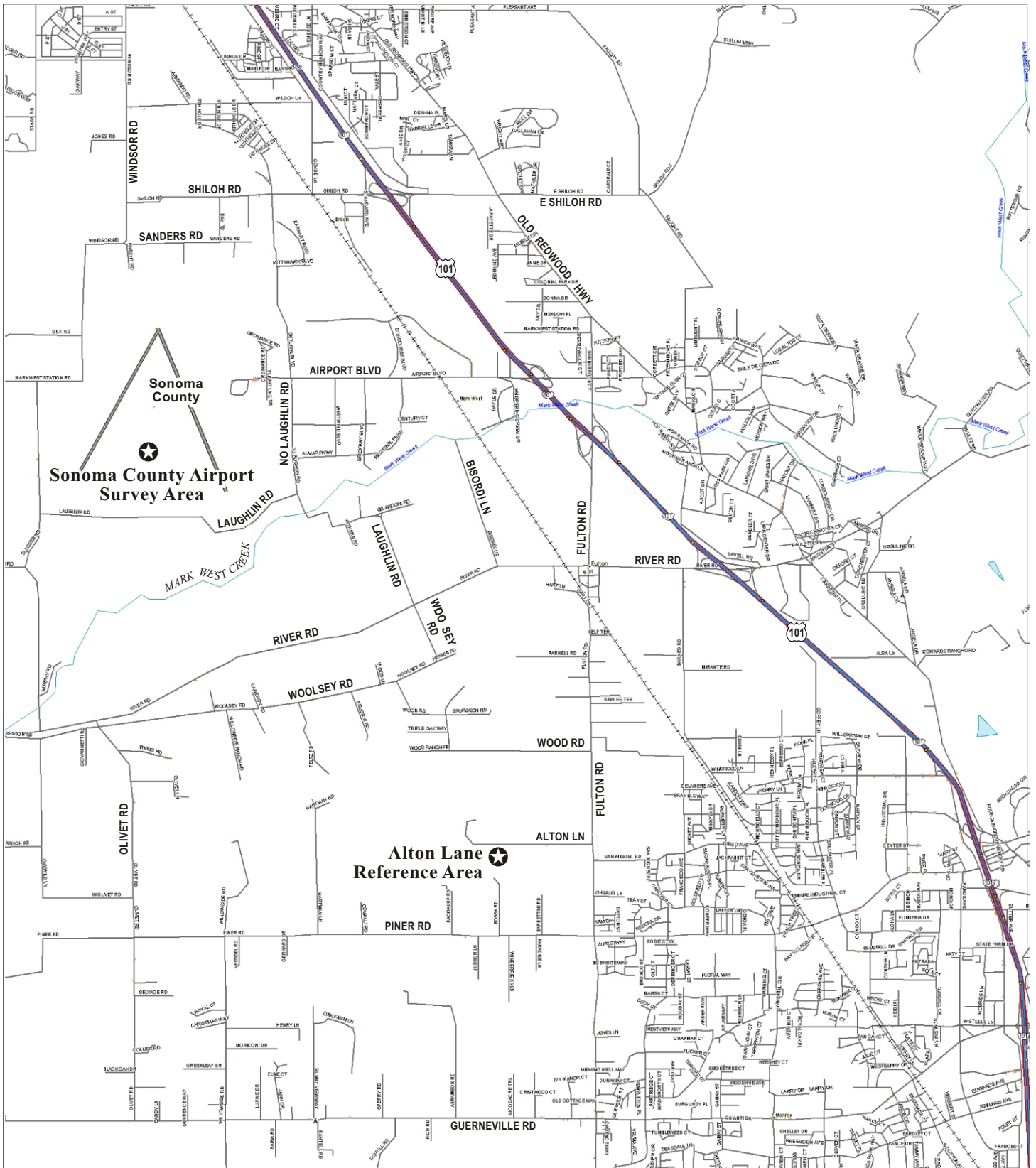
The Airport is located in Santa Rosa, California, approximately two miles west of Highway 101 (Figure 1). The Airport property is approximately 1,046 acres in size with two approximately 5,000-foot long runways (Runway 14-32 and Runway 1-19) that converge at the northern end of the property (Figure 2). It is bordered on the north by Redwood and Airport Creeks, to the east by North Laughlin Road, to the south by Laughlin Road, and to the west by Slusser and Windsor Roads (Figure 2). The property is located in the Healdsburg 7.5-minute USGS quadrangle.

The Airport survey area (Figure 2) consisted of the infield between the runways and taxiways, parcels directly adjacent to the existing runways and taxiways, and small parcels to the east of the eastern taxiway. The topography is flat with variously sized depressions, swales, and ditches, some of which pond water during the rainy season. A large portion of the property is irrigated with treated wastewater and mowed throughout the year (Figures 2 and 3). In order to facilitate future Airport planning with respect to the results of this survey, the Airport was divided into the eleven subareas which are depicted on Figure 4.

### **1.2 BACKGROUND INFORMATION**

#### **1.2.1 Basis for Surveys**

Mead and Hunt, Inc. (formerly Shutt-Moen) was engaged by the Sonoma County Board of Supervisors to identify feasible runway extension alternatives for the Airport. As part of the initial overall feasibility assessment, LSA conducted reconnaissance field surveys within the Airport to identify specific areas where special-status plants could occur. Based on the results of the initial field work (LSA 2002), LSA Associates was subsequently contracted by Sonoma County to conduct two years of protocol-level surveys within the following specific survey sub-areas, as depicted on Figure 4: Infield, South of Infield, Executive Hanger Taxiway, Apex Aviation, Reach Helicopter, maintenance Shop and West of SACMA. Vegetation data from other LSA plant surveys within the other sub-areas are also included in this report.



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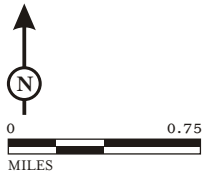
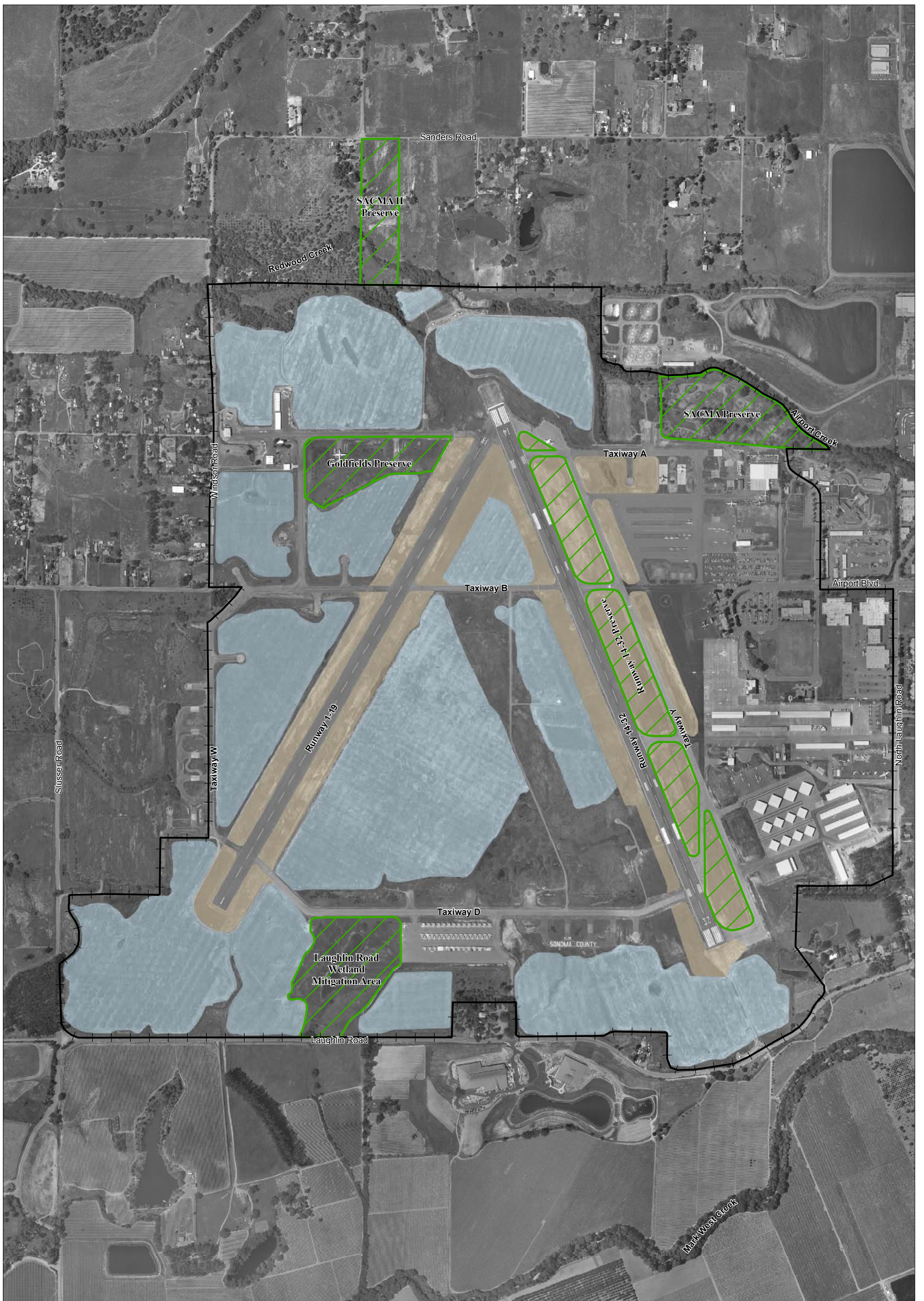


FIGURE 1

Sonoma County Airport

Site Location

SOURCE: ©2002 DeLORME. STREET ATLAS USA ©2003.



LSA



0 200 400 800  
FEET





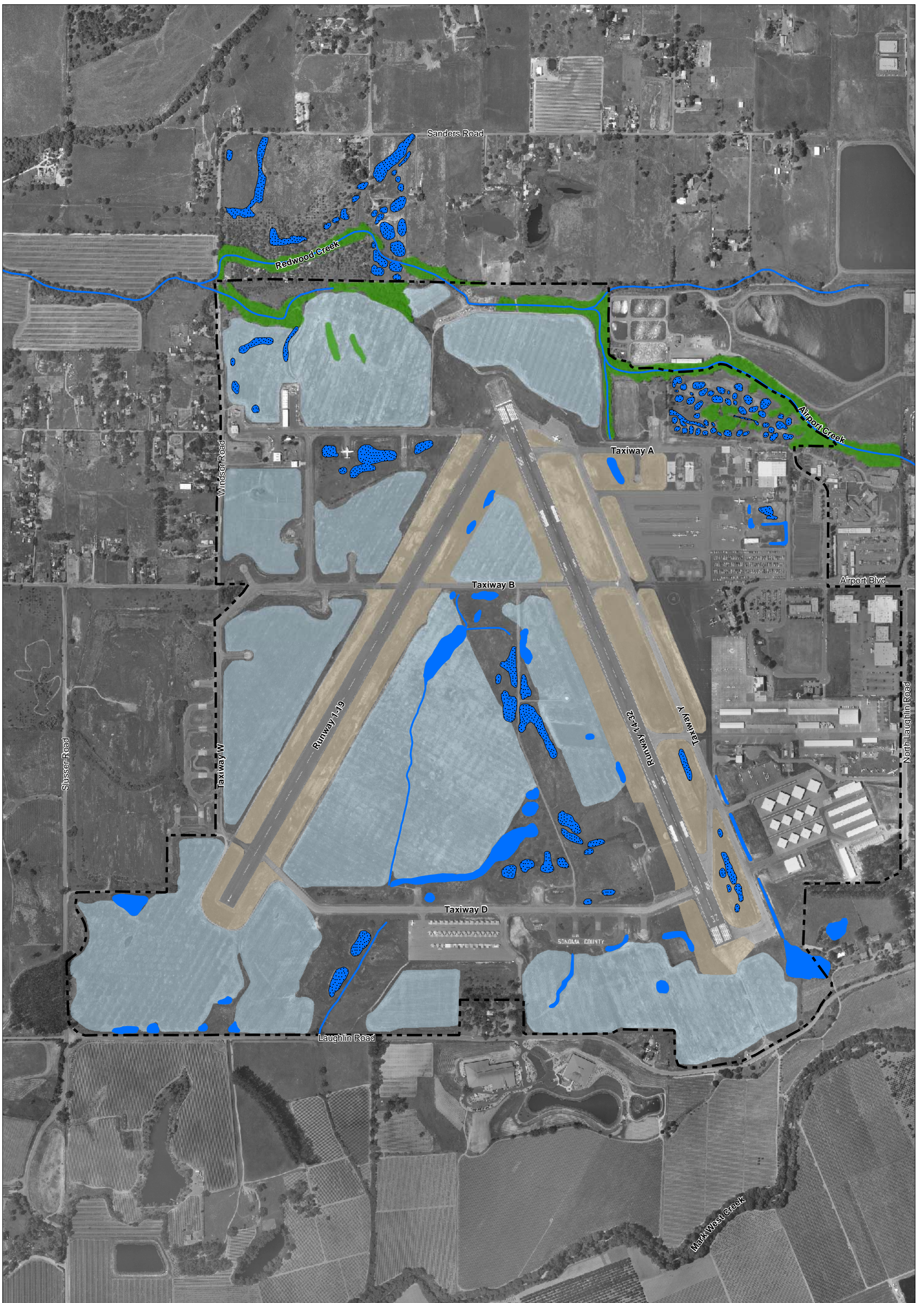
-  PRESERVE AREAS
-  IRRIGATED AREAS
-  REGULARLY MOWED AREAS
-  BOUNDARY OF SURVEY AREA

FIGURE 2

Sonoma County Airport

Site Features



LSA



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FEET

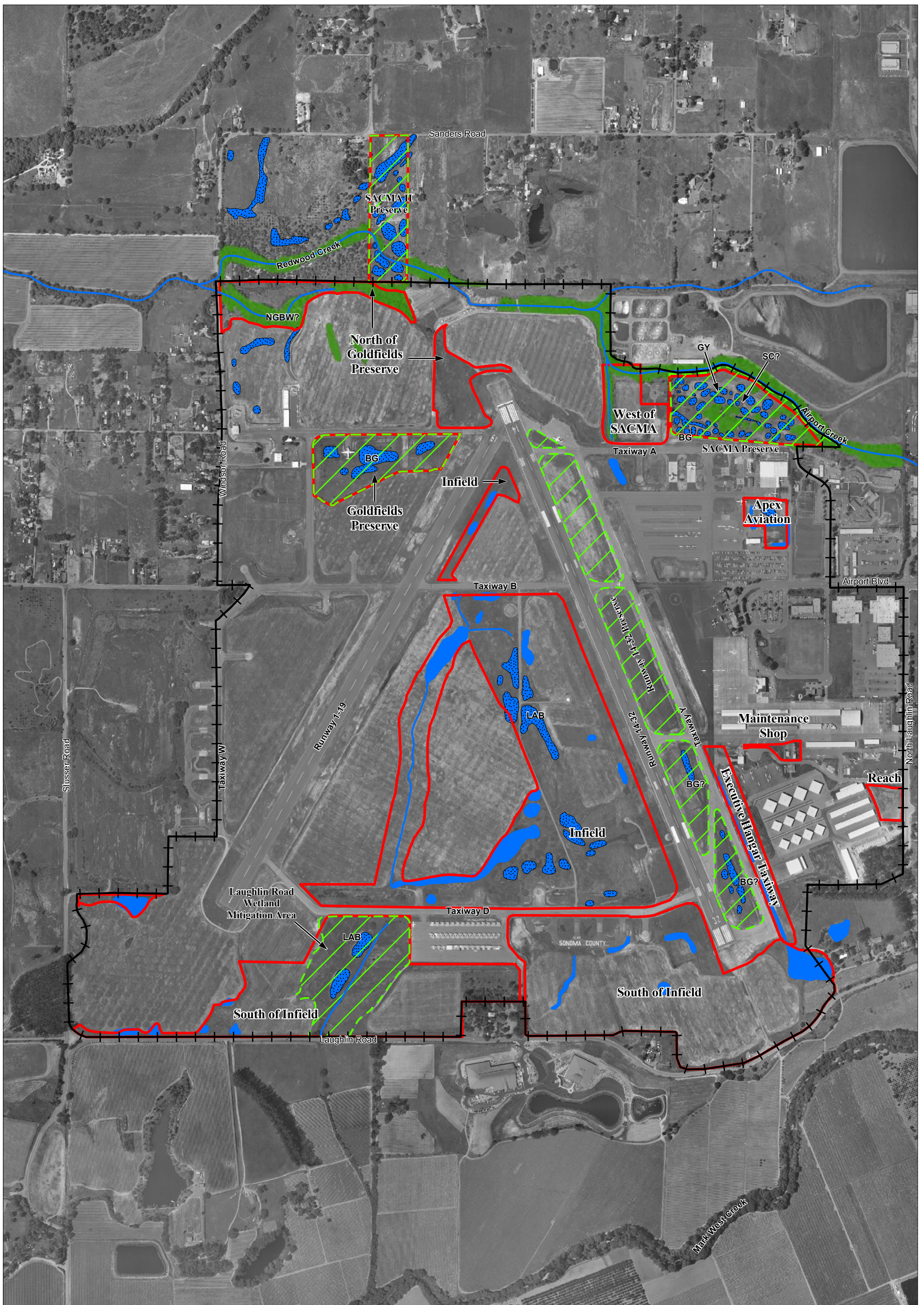
- IRRIGATED RUDERAL - CULTIVATED
- MOWED GRASSLAND
- RIPARIAN, VALLEY OAKS
- WETLANDS, PONDS, STREAMS AND DITCHES
- VERNAL PONDS AND SWALES OR SEASONAL WETLANDS WITH VERNAL POOL VEGETATION
- BOUNDARY OF SURVEY AREA

NOTES: 1) Annual grasslands and ruderal-grasslands occur throughout the undeveloped portions of the airport not covered by one of the vegetation types shown here.  
2) Wetland locations and boundaries have not been delineated in accordance with Corps of Engineers methodology.

FIGURE 3

Sonoma County Airport

Vegetation  
Community Types



LSA



0 200 400 800  
FEET

- ✚ BOUNDARY OF SURVEY AREA
- WETLANDS, PONDS, STREAMS AND DITCHES
- VERNAL POOLS AND SWALES OR SEASONAL WETLANDS WITH VERNAL POOL VEGETATION
- ▨ PRESERVE AREAS
- SURVEY ZONES
- RIPARIAN, VALLEY OAKS

- BG** = BURKE'S GOLDFIELDS
- BG?** = BURKE'S GOLDFIELDS (TO BE CONFIRMED)
- NCBW?** = NORTH COAST BLACK WALNUT (TO BE CONFIRMED)
- SC?** = SALINE CLOVER (TO BE CONFIRMED)
- GY** = GARDNER'S YAMPAH
- LAB** = LOBB'S AQUATIC BUTTERCUP

FIGURE 4

Sonoma County Airport

Rare Plant Survey  
Zones and Results



### 1.2.2 Special-status Plant Species

For the purpose of this study, special-status plants are briefly defined as follows:

- Plants that are listed or proposed for listing as threatened, rare, or endangered under the California Endangered Species Act (CESA) and/or threatened or endangered under the federal Endangered Species Act (ESA);
- Plants that are candidates for listing as threatened or endangered under the federal Endangered Species Act;
- Plants that are included on List 1A, List 1B, and List 2 of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California (Inventory)* (CNPS 2001), with updated information in the electronic version of the *Inventory* (CNPS 2004). The California Department of Fish & Game (CDFG) recognizes that the plants on Lists 1A and 1B would, in most cases, qualify for listing by the State.

Four vernal pool species - Burke's goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes vinculans*), Baker's blennosperma (*Blennosperma bakeri*), and many flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*) - and one freshwater marsh species - white sedge (*Carex comosa*) - are federal and state-listed as endangered and are considered the primary species of concern in this report.

All vernal pools and the majority of the seasonal wetlands in the Airport survey area have the potential to support the four vernal pools species listed above, as well as other special-status species, and the freshwater marshes may provide potential habitat for white sedge and other special status marsh species (Table A).

### 1.2.3 Wildflower Preservation Areas and Wetland Mitigation Features

The Airport property contains several preserved vernal pools and other protected wetland mitigation features, some of which support or have the potential to support special status plants. These are summarized as follows:

1. *Burke's Goldfields Preserve*. Three mitigation vernal pools, located directly northeast of the convergence point of the two runways near the old grounded airplane (Figure 2), were constructed in this location in 1988 (WESCO 1988). Two of these pools support well-established Burke's goldfields populations that have been annually monitored by LSA Associates since 2000, and prior to that by others (Patterson 1987, WESCO 1988).
2. *SACMA Preserve*. Several created vernal pools in the Sonoma County Consolidated Wetland Mitigation Area (SACMA) (Figure 2) were seeded with Burke's goldfields in 2001 and have been documented to contain an expanding population of the species (LSA 2003a, 2004a). They are monitored annually by LSA Associates.
3. *SACMA-2 Preserve*. Vernal pools were constructed in 2002 north of the Airport on SACMA-Phase 2 site, formerly known as the "Duran" property (Figure 2). These pools support vernal pool vegetation but do not currently support any special status vernal pool plants. They are monitored annually by LSA Associates.

4. *Runway 14-32 Wetland Preserve*. Several vernal pools occur in the preservation area between Runway 14-32 and the taxiway to the east (Figure 2). These pools are known to have supported

**Table A - Special-status Plants Potentially Occurring within Survey Area<sup>1</sup> on Sonoma County Airport Property**

Scientific Name	Common Name	Status <sup>2</sup> (Fed/State/CNPS)	Habitat	Blooming Period	Results of Surveys Conducted in 2003 and 2004.
<i>Blennosperma bakeri</i>	Sonoma sunshine	FE/SE/List1B	Valley and foothill grassland, vernal pools. Elevation 10-110 m	March-May	Potentially suitable habitat in vernal pools/seasonal wetlands in survey area. Species not observed during appropriately-timed surveys.
<i>Carex albida</i>	White sedge	FE/SE/List1B	Freshwater marsh, meadows and seeps. Elevation 35-55 m.	May-July	Potentially suitable habitat in freshwater marshes/seasonal wetlands/mesic grasslands in survey area. Species not observed during appropriately-timed surveys. The potential for occurrence of this species is very low due to the disturbed, hydrologically-altered nature of the airport's marshes and the presence of extensive wastewater irrigation.
<i>Carex comosa</i>	Bristly sedge	-/-/List 2	Marshes and swamps, valley and foothill grassland. Elevation 0-425 m.	May-September	Potentially suitable habitat in freshwater marshes/mesic grasslands in survey area. Species not observed during appropriately-timed surveys.
<i>Downingia pusilla</i>	Dwarf downingia	-/-List 2	Valley and foothill grassland, vernal pools. Elevation: 1-445 m	March-May	Potentially suitable habitat in vernal pools/seasonal wetlands in survey area. Species not observed during appropriately-timed surveys.
<i>Juglans californica</i> var. <i>hindsii</i>	Northern California black walnut	-/-/List 1B	Riparian woodlands, riparian scrub	April-May	Potentially suitable habitat along redwood Creek riparian corridor. Juglans species observed in the corridor but could be introduced hybrid.
<i>Lasthenia burkei</i>	Burke's goldfield	FE/SE/List1B	Meadows (mesic), vernal pools. Elevation 15-600 m	April-June	Potentially suitable habitat in vernal pools/seasonal wetlands/mesic grasslands in survey area. Species known to occur on Airport lands in the Goldfield Preserve, SACMA mitigation site and the Runway 1-19 Wetland Preserve. Not observed elsewhere during appropriately-timed surveys.

**Table A - Special-status Plants Potentially Occurring within Survey Area<sup>1</sup> on Sonoma County Airport Property**

Scientific Name	Common Name	Status <sup>2</sup> (Fed/State/CNPS)	Habitat	Blooming Period	Results of Surveys Conducted in 2003 and 2004.
<i>Legenere limosa</i>	Legenere	-/-List 1B	Vernal pools. Elevation 1-880 m	April-June	Potentially suitable habitat in vernal pools/seasonal wetlands in survey area. Species not observed during appropriately-timed surveys.
<i>Limnanthes vinculans</i>	Sebastopol meadowfoam	FE/SE/List1B	Meadows, valley and foothill grassland, vernal pools. Elevation 15-304 m	April-May	Potentially suitable habitat in vernal pools/seasonal wetlands/mesic grasslands in survey area. Species not observed during appropriately-timed surveys.
<i>Microseris paludosa</i>	Marsh microseris	-/-List 1B	Cismontane woodland, scrub, vernal pools, valley and foothill grassland. Elevation 5-300 m.	April-June	Potentially suitable habitat in vernal pools/seasonal wetlands/grasslands in survey area. Species not observed during appropriately-timed surveys.
<i>Navarretia leucocephala</i> ssp. <i>pliantha</i>	Many-flowered navarretia	FE/SE/List1B	Vernal pools. Elevation 30-950 m	May-June	Potentially suitable habitat in vernal pools in survey area. Species not observed during appropriately-timed surveys.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	-/-List1B	Cismontane woodland, lower montane coniferous forest, meadows, valley and foothill grassland, vernal pools. Elevation 15-1740 m	May-July	Potentially suitable habitat in vernal pools/seasonal wetlands/mesic grasslands in survey area. Species not observed during appropriately-timed surveys.
<i>Rhynchospora alba</i>	White beaked-rush	-/-List 2	Freshwater marshes, bogs, seeps, wet meadows.	July-August	Potentially suitable habitat in freshwater marshes/seasonal wetlands in survey area. Species not observed during surveys.
<i>Rhynchospora californica</i>	California beaked-rush	-/-List1B	Freshwater marshes and swamps, meadows and seeps.  Elevation 45-1010 m.	May-July	Potentially suitable habitat in freshwater marshes/seasonal wetlands in survey area. Species not observed during appropriately-timed surveys.

**Table A - Special-status Plants Potentially Occurring within Survey Area<sup>1</sup> on Sonoma County Airport Property**

Scientific Name	Common Name	Status <sup>2</sup> (Fed/State/CNPS)	Habitat	Blooming Period	Results of Surveys Conducted in 2003 and 2004.
<i>Rhynchospora globularis</i> var. <i>globularis</i>	Round-headed beaked-rush	-/-/List 2	Freshwater marshes and swamps. Elevation 45-60 m.	July-August	Potentially suitable habitat in freshwater marshes in survey area. Species not observed during surveys.
<i>Trifolium amoenum</i>	Showy Indian clover	FE/-/List 1B	Valley and foothill grassland. Elevation 5-415 m.	April-June	Potentially suitable habitat in grassland in survey area. Species not observed during appropriately-timed surveys. Potential for occurrence very low due to the highly disturbed nature of the airport's grasslands, on-going wastewater irrigation and mowing.
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	Saline clover	-/-/List 1B	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation 0-300 m	April-June	Potentially suitable habitat in freshwater marshes/mesic grassland in survey area. Species not observed during appropriately-timed surveys.

<sup>1</sup> See Figure 2.

<sup>2</sup> FE - Federally-listed as endangered.

SE - State-listed as endangered.

CNPS (California Native Plant Society)

List 1B - plant considered rare, threatened, or endangered in California and elsewhere;

List 2 - plant considered rare, threatened, or endangered in California but more common elsewhere.

Burke's goldfields in the 1980s (Patterson 1987; CNDDDB 2004). Although there has no recent verification of the presence of Burke's goldfields in these pools, casual observations of a member of the *Lasthenia* genus were made by County biologist Richard Stabler in 2003 (R. Stabler *pers. com.*) It is likely that the plants observed were Burke's goldfields.

5. *Field 17 Mitigation Area.* Six seasonal wetlands were constructed as mitigation features in the wastewater sprayfield area known as "Field 17 situated approximately midway between the Runway 1-19 and 14-32 in the vicinity of Apron F (Figure 2). These features support marsh, seasonal wetland and vernal pool vegetation.
6. *Laughlin Road Mitigation Area.* Two wetland mitigation ponds were constructed in 1998 in the southwest corner of the Airport to the east of Runway along Laughlin Road (Figure 2). These features support vernal pool and other seasonal wetland vegetation around their margins.

Surveys were not conducted in the four preserve areas (sites numbered 1 through 4 above) because they are fully protected and the presence of special status plants has been documented in these locations by LSA Associates and others (Patterson 1987, WESCO 1988, LSA 2003a, 2004a). Sites 5 and 6 were included in the surveys.

## 2.0 METHODS

### 2.1 RECORDS SEARCH

Prior to conducting field surveys, special-status plant species and sensitive plant communities with a potential to occur within the Airport were identified, based on reviews of the following sources: *Preliminary Alternatives Analysis for Biological Resources* (LSA 2002); *Burke's Goldfields (Lasthenia burkei) Survey Report, Sonoma County Airport* (Patterson 1987); *Seasonal Wetland Baseline Report for the Santa Rosa Plain* (Patterson et al. 1994); the *California Natural Diversity Data Base* (CNDDDB) (CDFG 2004); and the electronic version of the *Inventory* (CNPS 2004) for the Healdsburg and adjacent U.S.G.S. 7.5-minute quadrangles, as well as the botanists' knowledge of the general vegetation in the Airport survey area.

### 2.2 FIELD SURVEYS

Botanists Denise Kelly and Tim Milliken conducted systematic surveys on March 19, April 15, May 14, and June 16, 2003, and on March 9, April 8, May 17, and June 17, 2004. Additionally, data collected from other surveys within the Airport survey area are also included in the results. These other surveys were the following:

- A vegetation survey conducted by LSA botanists of the entire survey area on June 7, 2002 for a preliminary analysis of Airport runway expansion alternative.
- Annual vegetation monitoring of the SACMA and Goldfields Preserves, conducted by LSA botanists each spring between 2001 and 2003 (LSA 2003a, 2004a).
- Annual vegetation monitoring of the SACMA-II site conducted by LSA botanists in the springs of 2003 and 2004 (LSA 2004b).
- Wetland delineation study with associated plant survey conducted at the Apex Aviation site by LSA Associates in July 2004 (LSA 2004c).
- Focused surveys by LSA botanists of marsh sites within the survey area on November 11, 2004.

All surveys were in accordance with CDFG/USFWS general guidelines for the Santa Rosa Plain, as follows:

- Conducted by qualified botanists familiar with plants of the area, including rare species;
- conducted during two seasons;
- conducted at the time of year when the plants are identifiable, typically when the plant is in flower or in fruit;
- floristic in nature, *i.e.*, every species noted in the field was identified to the extent necessary to determine whether it is rare, threatened, or endangered;

- conducted in a manner that is consistent with conservation ethics, *i.e.*, collections (voucher specimens) of rare or suspected rare species would have been made only when such actions would not have jeopardized the continued existence of the population, and in accordance with applicable State and Federal permit regulations;
- conducted using systematic field techniques in all habitats on the site to ensure a reasonably thorough coverage of potential impact areas, and;
- well documented, *i.e.*, if a rare or endangered plant (or sensitive plant community) was located, a California Native Species (or Community) Field Survey form would have been completed and submitted to the CNDDDB.

A list of all species observed on the parcels was assembled and is included in this report (Appendix A). Taxonomy and nomenclature follow those of *The Jepson Manual: Higher Plants of California* (Hickman 1993); vernacular names were obtained from the CNDDDB and *Plants of the San Francisco Bay Region* (Kozloff and Beidleman 2004). *A Flora of Sonoma County* (Best, et al. 1996) was consulted for general botanical information.

### 2.3 SURVEY AREA

The Airport survey area consisted of the infield between the runways and taxiways, parcels adjacent to the existing runways and taxiways, and small parcels to the east of the eastern taxiway. The topography of the survey area is flat with variously sized depressions, swales and ditches. Most of these features pond water or are seasonally saturated during the rainy season. LSA did not conduct a delineation of waters of the United States in the study area, with the exception of the Apex Aviation parcel (LSA 2004c). However, the approximate locations of potential wetlands and other waters of the United States in the Airport were tentatively mapped in 2002 (Figure 2) and included in the plant survey area.

A large portion of the property is irrigated with treated wastewater and regularly mowed throughout the year. Surveys were not conducted in these areas because regular irrigation and mowing has obliterated past vernal pools and they no longer provide suitable habitat for vernal pool vegetation or other special status species with the potential to occur in the vicinity (Figure 2).

### 2.4 REFERENCE SITES

Pools in the Burke's Goldfields Preserve (see Section 1.2.3) were used as a reference site for Burke's goldfields. The Alton Lane Preserve, located in the western part of Santa Rosa (Figure 1), was used as a reference site for Sonoma sunshine and Sebastopol meadowfoam. Many-flowered navarretia only occurs on privately owned property to which access is denied by the owner (Gene Cooley, pers. comm.), and therefore could not field referenced. However the survey period encompassed the full range of time within which many-flowered navarretia is known to flower on the Santa Rosa Plain.

### 2.5 MAPPING

The boundaries of the surveyed areas were mapped and digitized on an aerial photograph (Figures 2 and 3). A GPS unit was brought to the property during each survey in order to accurately map the



locations any special status plants that were observed. Locations of potentially jurisdictional wetland, pond, stream and ditch features that were observed by LSA or previously mapped by LSA and others (LSA 2003b, 2004c; Patterson 1987) and areas of constructed pools (Patterson 1987, WESCO 1988) were also added to the aerial photo (Figure 3).<sup>1</sup>

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<sup>1</sup> The locations and boundaries of potentially jurisdictional features are rough and approximate and have not been delineated in the field. The results depicted on Figure 3 should not be construed as a Corps of Engineers approved wetland delineation map.

## 3.0 FINDINGS

### 3.1 GENERAL BOTANICAL RESOURCES

The entire Airport survey area on the Airport supports annual grasslands consisting of mostly non-native annual grasses interspersed with native and non-native forbs (broadleaved plants). Hydrophytic vegetation is present in wetlands and other seasonally saturated areas, including the irrigated portions of the study area. Most of the grassland in the Airport study area is mowed (Figure 3). Woody vegetation is absent except for a few individuals of coast live oak (*Quercus agrifolia*), Fremont's poplar (*Populus fremontii*), red willow (*Salix laevigata*), and coyote-brush (*Baccharis pilularis*) occurring mostly in the southern portion of the infield. Woody riparian vegetation is also found along Mark West Creek, in the southeastern portion of the Airport, south of Laughin Road, and along Airport Creek and associated drainage swales lying to the northern perimeter of the Airport.

**Annual Grassland; Ruderal Grassland.** Annual grasslands and ruderal grasslands occur throughout the Airport survey area. The dominant grassland species within the survey area include wild oat (*Avena fatua*), foxtail fescue (*Vulpia myuros*), Harding grass (*Phalaris aquatica*), chicory (*Cichorium intybus*), medusahead (*Taeniatherum caput-medusae*) and English plantain (*Plantago lanceolata*). Other common species include rippgut (*Bromus diandrus*), orchard grass (*Dactylus glomeratus*), Bermuda grass (*Cynodon dactylon*), soft chess (*Bromus hordeaceus*), common knotweed (*Polygonum arenastrum*), wild radish (*Raphanus sativus*), and mustards (*Brassica* sp.). Moister grasslands such as the irrigated zones are dominated by Italian ryegrass (*Lolium multiflorum*), umbrella sedge (*Cyperus eragrostis*), velvet grass (*Holcus lanatus*) and Harding grass.

**Northern Hardpan Vernal Pools and Swales; Seasonal Wetlands.** Two types of vernal pools that occur on the Santa Rosa Plain - northern hardpan vernal pools and northern vernal pools, both of which are considered sensitive habitats under the CNDDDB. The survey area supports the northern hardpan vernal pool type. In the relatively undisturbed pools in the survey area, the spring vegetation is typically dominated by native annuals such as vernal pool buttercup (*Ranunculus bonariensis*), yellow-ray goldfields (*Lasthenia glaberrima*), Fremont's goldfields (*Lasthenia fremontii*), maroon-spot downingia (*Downingia concolor*), and slender popcorn-flower (*Plagiobothrys stipitatus*). Later in the season, semaphore grass (*Pleuropogon californicus*), annual hairgrass (*Deschampsia danthonioides*), and coyote thistle (*Eryngium armatum*) are the dominant plant species in the pools.

Disturbed pools and swales and other seasonal wetland areas, including those that are irrigated, are dominated by Italian ryegrass, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), pennyroyal (*Mentha pulegium*) and Bermuda grass (*Cynodon dactylon*).

The majority of the pools are located in the infield between the runways and in a 3,000-foot by 300-foot strip east of and parallel to Runway 14-32 (Figure 3). Based on the vegetation and distribution pattern of these pools, they appear to be remnants of the historic pool systems that once encompassed much of the Plain. A few vernal swales and pools are also scattered near the south end of Runway 14-32, along embankments and berms. These pools and swales appear to have been created inadvertently when some

of the Airport features were constructed and currently contain plant species more typical of disturbed vernal pools.

**Freshwater Marsh.** Freshwater marsh vegetation occurs within the Airport survey area along the margins of freshwater ponds and lakes as well as along the stream corridors. It is characterized by dense stands of tall perennial marsh plants (up to 10 feet), such as cattail (*Typha* sp.) and bulrush (*Scirpus* sp.) in areas where water seldom exceeds three feet in depth. Along its upland edges, dense stands of shorter-statured marsh plants are found, such as sedges (e.g., *Carex obtusa*), spikerush (*Eleocharis macrostachya*), and rushes (*Juncus* spp.). Woody species such as willows (*Salix* spp.) and blackberry (*Rubus discolor*) may occur further upland. The interiors may be broken by open patches of water that often are choked with smartweed (*Polygonum* sp.) and floating pond weeds.

Freshwater marsh occurs on Airport property in the infield at the south end associated with six mitigation ponds created in 1988 (Figure 3). Freshwater marsh also occurs at the southeast end of Runway 14-32 adjacent to a pond, and to the west of the south end of Runway 1-19. Marsh vegetation also occurs in two wetland mitigation features that were constructed in 1998 in the southwest corner of the Airport, east of Runway 1-19. South of Runway 1-19, there is a pond approximately 1,000' long and 400' wide at its widest point, created for agricultural irrigation. Although the margins of the pond have been cleared and mowed to the waterline, occasional stands of freshwater marsh vegetation remain along the edges.

**Riparian Woodland.** This vegetation type is found in the survey area along Redwood Creek near the northern boundary of the Airport. The creek corridor supports a 40-80 foot wide woody riparian community that continues with few interruptions until its eventual confluence with Windsor Creek. On Airport property, the riparian corridor supports mature valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), red willow (*Salix laevigata*) and Siberian elm (*Ulmus pumila*). There is one 400-foot section of the creek at the end of Runway 14-32 that is maintained clear of all woody vegetation to meet safety compliance standards for the Airport as required by the Federal Aviation Administration (FAA). The vegetation in this area is dominated by poison hemlock (*Conium maculatum*) and Harding grass.

## 3.2 SPECIAL-STATUS SPECIES

As described in Table A, a total of 16 special-status plant species have the potential to occur in the Airport survey area, based on the presence of potentially suitable habitat. Table A also provides the listing status of each species, habitat requirements, blooming periods, and the results of surveys for each species. With the exception of Burkes goldfields (*Lasthenia burkei*), none of the special-status species were found by LSA in the Airport survey area during appropriately-timed surveys in 2003 and 2004.

The following are brief accounts of the four listed vernal pool plant species known to occur on the Santa Rosa Plain, and the results of LSA's surveys for these species on the Airport property:

### 3.2.1 Burke's Goldfields (*Lasthenia burkei*)

USFWS - Endangered species (56 FR 61173, December 2, 1991).

CDFG - Endangered species.

CNPS - List 1B, i.e., plant rare, threatened, or endangered in California (and elsewhere).

**Description and Life History.** Burke's goldfields is an annual species in the sunflower family (Asteraceae). The simple or branched, hairy stems are less than 12 inches. The leaves, which are less than 2 inches long, are entire (no teeth, lobes, etc.) or pinnately lobed. The flowerhead has a dome-shaped to conical-shaped receptacle with relatively few (8-13) and short ray flowers less than 0.2 inches long (outer ring of flowers in a daisy-like flowerhead). The hairy achenes (fruits) are less than 0.05 inches long with a pappus (projections at the crown of an achene) of one long awn and many short scales.

Burke's goldfields is morphologically distinguishable from other goldfields species (*Lasthenia glaberrima*, *L. californica*, *L. fremontii*) that also occur in Sonoma County vernal pools by its free phyllaries (leaf-like structures subtending a flowerhead), its pappus, and its generally pinnately divided leaf lobes. Furthermore, the flowers of Burke's goldfields remain yellow in alkali solution whereas those of at least California goldfields turn red. Burke's goldfields blooms from April through June.

**Habitat.** Burke's goldfields occur in vernal pools and swales, wet meadows, and seeps.

**General Distribution.** Burke's goldfields is endemic to the Central Coastal Ranges and has historically been reported from Mendocino, Lake, and Sonoma counties. The CNDDDB (2004) records 32 occurrences. The type locality is in Mendocino County; however, this population, which is also the only known occurrence in that county, is possibly extirpated (CNDDDB 2004). Two occurrences, both presumed extant, are recorded from Lake County. The remaining 29 occurrences are from Sonoma County with the center of distribution in the northwestern and central areas of the Santa Rosa Plain. Three of these occurrences are from south of Highway 12 and one occurrence from north of Healdsburg. Four of the 29 occurrences in Sonoma County are known to be extirpated, and two are possibly extirpated (CNDDDB 2004).

**Occurrence on or near Sonoma County Airport.** CNDDDB (2004) occurrence record No. 7 refers to the population of Burke's goldfields on and in the immediate vicinity of Sonoma County Airport. Seven small sub-populations are mapped by the CNDDDB (Appendix B). Other occurrences in the project vicinity include colonies mapped between Sonoma County Airport and Shiloh Rd, at the junction of Highway 101 and Shiloh Road, northwest of Windsor along Starr Road, on the east side of Redwood Highway north of Arata Lane, southwest of the Windsor Road/Arata Lane intersection, and in the Wikiup wetlands mitigation bank east of the Airport, between Highway 101 and Redwood Highway. A population has also been introduced at the SACMA Preserve, directly north of Airport Boulevard.

Sub-populations of Burke's goldfields (*Lasthenia burkei*) occur in three locations on the Airport property, all of which are designated as protected preserves: the SACMA site, directly north of Airport Boulevard, Burke's Goldfields Preserve, and the Runway 14-32 Wetland Preserve (see Section 1.2.3 and Figures 2 and 4). The SACMA sub-population consists of CDFG-salvaged soil that contained seeds of Burke's goldfields (*Lasthenia burkei*) that was introduced into constructed vernal pools at the SACMA site in 1999. The source of the salvaged soil was a vernal pool lost during construction of a project in the industrial park immediately to the east of the Airport. As of 2003, a total of seven constructed pools at SACMA supported between 1,000-1,500 individual plants of Burke's goldfields (LSA 2004a). The Burke's Goldfields Preserve site consists of an estimated >100,000 individuals in a dense cover. This sub-population consists of naturally occurring plants and seeded plants introduced into two constructed pools in 1988. Colonies of Burke's goldfields were observed in several pools in

the Runway 14-32 Preserve in the late 1980s (Patterson 1987; CNDDDB 2004). Although there has been no recent verification of the presence of Burke's goldfields in these pools, casual observations of a member of the *Lasthenia* genus were made by County biologist Richard Stabler in 2003 (R. Stabler pers. com.) It is likely that the plants observed were Burke's goldfields. These sites will be re-visited by LSA botanists in the spring 2005 to verify the continued presence of the species.

### 3.2.2 Sonoma Sunshine (*Blennosperma bakeri*)

USFWS - Endangered species (56 FR 61173, December 2, 1991).

CDFG - Endangered species.

CNPS - List 1B, i.e., plant rare, threatened, or endangered in California (and elsewhere).

**Description and Life History.** Sonoma sunshine is an annual species in the sunflower family (Asteraceae). Plants are less than 12 inches with alternate, linear leaves. The lower leaves are entire, and the upper leaves have one to three lobes that are 0.4-1.2 inches long. The flower-heads (including the ray and disk flowers) are yellow. The stigma of the ray flowers is red and that of the disk flowers is white. The anthers produce white pollen. The sharply 4-6 angled achenes (fruits) are 0.1-0.2 in long with small rounded or conical protuberances. Sonoma sunshine is distinguished from a species in the same genus, common stickyseed (*Blennosperma nanum*), by its leaves (fewer and longer lobes) and robustness. Sonoma sunshine blooms in March and April.

**Habitat.** Sonoma sunshine occurs in vernal pools and swales and mesic grassy areas.

**General Distribution.** Sonoma sunshine is endemic to Sonoma County. The CNDDDB (2004) records 26 populations, 22 of which are presumed extant. Five occurrences, two of which are extirpated, are outside the Santa Rosa Plain in Sonoma Valley. The remaining populations (one population is considered extirpated) are found on the Santa Rosa Plain predominantly to the west and northwest of Santa Rosa.

**Occurrence near Sonoma County Airport.** The closest populations to the Airport occur northwest of Santa Rosa, along Wood Road and between Hartman Road and the end of Alton Road, 2 - 2.5 miles southeast of the Airport. This species was not observed in the Airport survey area by LSA botanists during two years of appropriately timed surveys in 2003 and 2004.

### 3.2.3 Sebastopol Meadowfoam (*Limnanthes vinculans*)

USFWS - Endangered species (56 FR 61173, December 2, 1991)

CDFG - Endangered species.

CNPS - List 1B, i.e., plant rare, threatened, or endangered in California (and elsewhere).

**Description and Life History.** Sebastopol meadowfoam is an annual species in the meadowfoam family (Limnanthaceae). Plants are less than 12 inches tall with erect to decumbent (spreading) stems. Mature plants have once pinnately divided leaves with 3 to 5 leaflets. White, bell-shaped flowers, with petals ranging in length from 0.5 to 0.7 inches, are borne singly at the end of stems and bloom in the spring. The nutlets (fruits) are 0.2 inches long with dense, short tubercles. Sebastopol meadowfoam blooms in April and May.

**Habitat.** Sebastopol meadowfoam occurs in vernal pools/swales and in wet grassland and meadows, commonly in valley oak savanna, on poorly drained soils of clay and sandy loam.

**General Distribution.** Sebastopol meadowfoam is endemic to central Sonoma County in the vicinity of Santa Rosa and Windsor, with the exception of one population (likely introduced) at the Yountville Ecological Preserve in Napa County.

The CNDDDB (2004) records 41 occurrences of Sebastopol meadowfoam, 33 of which are presumed extant. The distribution of the meadowfoam on the Santa Rosa Plain is centered in the central and southern portions of the Plain. Two occurrences are outside of the Santa Rosa Plain, one at Atascadero Creek Marsh, west of Sebastopol, the other in the vicinity of Knights Valley, northeast of Windsor.

**Occurrence near Sonoma County Airport.** The closest presumed extant population to the Airport is located in the vicinity of Wood Road and Woolsey Road near River Road, northwest of Santa Rosa (CNDDDB 2004). A population that occurred in a swale near the area that is presently the Sonoma County Airport Burke's Goldfields Preserve is reported as extinct. The swale is currently dominated by freshwater marsh perennials and no longer provides habitat for the meadowfoam (Pavlik, et al. 1998, as cited in CNDDDB 2004). This population was not observed by LSA botanists during surveys of the Burke's Goldfields Preserve as a reference site in 2003 and 2004. This species was also not observed elsewhere in the Airport survey during this period.

During 2003 and 2004, LSA botanists paid particular attention to vernal pools and seasonal wetlands in the southern portion of the Airport property, due to the presence of dense cover by Douglas' meadowfoam (*Limnanthes douglasii*), a meadowfoam also associated with vernal pools and other mesic areas. Sebastopol meadowfoam was not observed.

### 3.2.4 Many-flowered Navarretia (*Navarretia leucocephala* ssp. *plieantha*)

USFWS - Endangered species (59FR 65311, December 19, 1994).

CDFG - Endangered species.

CNPS - List 1B, *i.e.*, plant rare, threatened, or endangered in California (and elsewhere).

**Description and Life History.** Many-flowered navarretia is an annual species of the phlox family (Polemoniaceae). The plant is 1-3 cm (0.4-1.2 in) tall with many spreading branches that form a mat. The linear leaves are 2-4 cm (0.8-1.6 in) long and are either entire or have a few widely spaced lobes. The inflorescence consists of up to 60 blue flowers, subtended by leaf-like bracts. The funnel-shaped corolla is 5-6 mm (0.22-0.24 in) long with unbranched veins. This species blooms from May through June.

Many-flowered navarretia is morphologically distinguished from other subspecies (*Navarretia leucocephala* ssp. *bakeri*, ssp. *leucocephala*) that also occur in vernal pools in Sonoma County by its blue flower color and its low-growing habit (stature).

**Habitat.** Many-flowered navarretia occurs in vernal pools situated on volcanic ash flow.

**General Distribution.** Many-flowered navarretia is endemic to Lake and Sonoma counties. It is known from nine locations; five populations are presumed extant in Lake County and four populations, three of which are presumed extant, are in Sonoma County. One population in Annadel State Park is possibly extirpated.

**Occurrence near Sonoma County Airport.** The closest known population to Airport property is located near Saunders Road, approximately one mile northeast of the Airport (CNDDDB 2004). This species was not observed in the Airport survey area by LSA botanists during two years of appropriately timed surveys in 2003 and 2004.

### 3.2.5 White Sedge (*Carex albida*)

USFWS - Endangered species (62FR 54972, October 22, 1997).

CDFG - Endangered species.

CNPS - List 1B, *i.e.*, plant rare, threatened, or endangered in California (and elsewhere).

**Description and Life History.** White sedge is a perennial herb in the sedge family (Cyperaceae). The plant grows to 2-3 feet tall, having flat, 1-2 inches wide leaves with closed sheaths. Inflorescence contain 4 to 7 oval to oblong spikelets that are 0.3 to 0.7 inches long. The mature fruits are three-sided. The blooming period is May through July.

**Habitat.** Freshwater marshes, swamps and bogs.

**General Distribution.** The species was historically known to occur in four populations, all in Sonoma County. It was extirpated from three of these locations due to wetland drainage and irrigation spraying with wastewater effluent. The remaining population consists of approximately 1,000 plants (as surveyed in 1993) in a sphagnum bog known as Pitkin Marsh.

**Occurrence near Sonoma County Airport.** The single known population at Pitkin Marsh is located approximately 4.8 miles southwest of the Sonoma County Airport. The potential for occurrence of this species is very low due to the disturbed, hydrologically-altered nature of the Airport's marshes and the presence of extensive wastewater irrigation. This species was not observed in the Airport survey area by LSA botanists during two years of appropriately timed surveys in 2003 and 2004.

### 3.2.6 Showy Indian Clover (*Trifolium amoenum*)

USFWS - Endangered species (62FR 54808, October 22, 1997).

CDFG - Endangered species.

CNPS - List 1B, *i.e.*, plant rare, threatened, or endangered in California (and elsewhere).

**Description and Life History.** Showy Indian clover is an annual plant in the pea family (Fabaceae). It has hairy, erect stems that grows to 27 inches in height. The 0.8 to 1.2-inch long leaves are pinnately compound and obovate. The flowers are purple with white tips, 0.5 to 0.6 inches long, occurring in dense, round or ovoid heads. The flowering period is April through June. Showy Indian clover is morphologically distinguished from *Trifolium macraei*, by its larger size and the flowers which lack subtending bracts.

**Habitat.** Coastal bluffs, grasslands.

**General Distribution.** Showy Indian clover was historically known to occur in 20 populations in 7 Bay Area counties. However, all the known populations are believed to have been extirpated by the late-1980s due to urbanization, land conversion to agriculture and competition from weedy, non-native

plant species. In 1993, a single plant was found near Occidental but was not observed again in later years. In 1996, a small population was observed in grasslands in the Valley Ford quadrangle.

**Occurrence near Sonoma County Airport.** The single known population in the Valley Ford vicinity is located at least 13 miles from Airport. The potential for occurrence on Airport lands is very low due to the highly disturbed nature of the Airport's grasslands, on-going wastewater irrigation and mowing. This species was not observed in the Airport survey area by LSA botanists during two years of appropriately timed surveys in 2003 and 2004.

### 3.3 OTHER VEGETATION

#### 3.3.1 Overall Plant Species Presence

A list of all plant species observed in the Airport survey area is provided in this report as Appendix A. The plant list organizes survey results into the eleven subareas which are depicted on Figure 4. A total of 264 plant species was observed in the survey area during the surveys conducted from April through June in 2003 and 2004 (Appendix A). A total of 134 species (51 percent) are native plants. A total of 15 of the non-native species are considered to be noxious weeds that are moderately to highly invasive into natural ecosystems (California IPC 1999).

Most of the absolute cover in drier and irrigated portions of the parcels consists of introduced, weedy plants whereas vernal pools, seasonal wetlands and swales and marsh areas support a mix of native and non-native plant cover. The Redwood Creek riparian corridor is dominated by native species.

#### 3.3.2 Other Special Status Species Presence

Other than Burke's goldfields, two other special status species may occur in the Airport survey area, Northern California black walnut (*Juglans californica* var. *hindsii* - CNPS List 1b) may occur in the Redwood Creek riparian corridor along the Airport's northern boundary (Figure 4). Walnut trees with the morphological characteristics of var. *hindsii* were observed in the creek corridor, however the trees may in fact be a hybrid with the cultivated variety, *J. regia*, with which the native species readily hybridizes (CNPS 2001). Alternatively, the tree may indeed be the native variety but may have been introduced by humans since the only known occurrences of this species in Sonoma County may have been a result of the spread of nuts traded by Native Americans tribes from the Central Valley (Best et al. 1996).

A second special status species that may occur within the Airport survey area is saline clover (*Trifolium depauperatum* var. *hydrophilum*). *T. depauperatum* was observed in the SACMA Preserve during spring surveys in 2002 and 2003. However, it is not known if this plant is variety *hydrophilum*, a CNPS List 1B species, or one of the non-special status varieties (var. *amplectens* or var. *truncatum*) known to occur in Sonoma County. During spring 2005 surveys at the SACMA Preserve, LSA botanists will attempt to key out this plant in order to ascertain its variety.

Two species of rush (*Rhynchospora alba* and *R. globularis* var. *globularis*), both CNPS List 2 species, have flowering periods that extend through August, which is beyond the survey periods that ended in late June of each year. However, both species are perennial plants that, if present, would have been observed in vegetative and early flowering stages during the survey periods. The species would also



have been present during focused surveys of Airport marsh sites on November 11, 2004. No *Rhynchospora* species were observed during any of these surveys.

Although not considered to be special status plant species under this study's guidelines and the guidelines of CEQA, the survey area was found to contain two other notable plant species: Gardner's yampah (*Perideridia gairdneri* ssp. *gairdneri*) and Lobb's aquatic buttercup (*Ranunculus lobbii*). These species were found to occur in several locations as shown on Figure 4. The CNPS List 4 is a "watch list" of uncommon species or species of limited distribution that could be considered rare in the future.

## 4.0 CONCLUSIONS

7. Burke's goldfields occurs on the Airport property in two designated preserve areas (SACMA Preserve and Burkes' Goldfields Preserve) and probably occurs in the Runway 14-32. LSA Associates will visit the Runway 14-32 Preserve in the Spring 2005 to verify the presence of this species in the preserve. The population in the Burke's Goldfield Preserve is large (>100,000 individuals) but is confined to two pools. The SACMA population is relatively small (1,000 - 1,500 individuals) but occurs in seven pools. This population appears to be expanding based on annual monitoring reports from this preserve (LSA 2003a, 2004a).
8. Burke's goldfields has disappeared from 13 other locations documented to support this species on Airport lands in 1987 (Patterson 1987). Much of this decline has undoubtedly been due the treated wastewater irrigation and regular mowing program conducted in support of Airport operations.
9. Based on the results of two years of protocol-level plant surveys, no other federal or state listed plant species are likely to occur within the airport survey area.
10. Two CNPPS List 1B species may occur within the survey area (Figure 4). Northern California black walnut may occur in the Redwood Creek riparian corridor along the Airport's northern boundary. However, the species occurring there may be a hybrid or may have been introduced by humans from nuts collected in the Central Valley. Saline clover occurs within the SACMA Preserve but whether or not this plant is the rare variety (var. *hydrophilum*) of saline clover will not be known until further taxonomic identification is conducted by LSA botanists in the Spring 2005.
11. Two CNPS List 4 species ("Watch List") were found to occur within the survey area in the locations shown on Figure 4. The species are Gardner's yampah and Lobb's aquatic buttercup.

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**APPENDIX A**  
**PLANT SPECIES OBSERVED IN THE SONOMA COUNTY AIRPORT**  
**SURVEY AREA**

**Appendix A. Plant Species Observed at Sonoma County Airport  
LSA Botanical Surveys 2002-2004**

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Achyrachaena mollis</i> Blow-wives	Yes			●	●	●	●			●		
<i>Aira caryophyllea</i> Air grass	No			●	●	●	●	●	●	●	●	
<i>Alisma plantago-aquatica</i> Water-plantain	Yes	●		●	●					●	●	●
<i>Allium vineale</i> Wild garlic	No			●	●						●	
<i>Alopecurus saccatus</i> Pacific foxtail	Yes			●	●						●	
<i>Alopecurus aequalis</i> var. <i>aequalis</i> Short-awn foxtail	Yes			●								●
<i>Amaranthus retroflexus</i> Pigweed	No			●	●	●	●	●	●		●	●

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Amaryllis belladonna</i> Naked lady	No			●								
<i>Ammannia</i> sp.	Yes											●
<i>Amsinckia menziesii</i> var. <i>intermedia</i> Fiddleneck	Yes			●								
<i>Anagallis arvensis</i> Scarlet pimpernel	No	●		●	●				●	●		●
<i>Anthemis cotula</i> Mayweed	No	●		●	●	●	●	●	●		●	●
<i>Anthoxanthum aristatum</i> Vernal grass	No			●	●	●	●	●	●	●	●	●
<i>Arundo donax</i> Giant reed	No (NW)			●							●	
<i>Atriplex triangularis</i> Fathen	Yes	●		●	●							●

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Avena fatua</i> Wild oats	No			●	●	●	●	●	●	●	●	
<i>Avena barbata</i> Slender wild oats	No			●	●		●	●		●	●	
<i>Baccharis pilularis</i> Coyote-brush	Yes	●		●	●						●	
<i>Bellardia trixago</i> Bellardia	No			●	●	●	●				●	
<i>Blennosperma nanum</i> var. <i>nanum</i> Blennosperma	Yes			●	●	●	●				●	
<i>Brassica nigra</i> Black mustard	No (NW)			●	●							
<i>Brassica rapa</i> Spring mustard	No			●	●		●				●	
<i>Briza maxima</i> Rattlesnake-grass	No			●	●		●				●	



Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Briza minor</i> Quaking-grass	No			●	●	●	●	●	●	●	●	●
<i>Brodiaea elegans</i> Harvest brodiaea	Yes			●	●		●		●			
<i>Bromus catharticus</i> Rescue grass	No			●								
<i>Bromus diandrus</i> Ripgut brome	No			●	●	●	●	●		●	●	●
<i>Bromus hordeaceus</i> Soft chess	No	●		●	●	●	●	●	●	●	●	
<i>Bromus madritensis</i> ssp. <i>rubus</i> Foxtail chess	No			●	●							
<i>Bromus tectorum</i> var. <i>tectorum</i> Cheat grass	No (NW)	●										
<i>Bromus carinatus</i> California brome	Yes			●	●							

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)	
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA		
<i>Callitriche heterophylla</i> var. <i>bolanderi</i> Bolander's water-starwort	Yes												●
<i>Callitriche</i> sp. Water starwort	Yes		●	●	●								
<i>Calochortus luteus</i> Yellow mariposa lily	Yes			●	●	●							
<i>Camissonia ovata</i> Suncup	Yes			●	●	●	●	●		●			
<i>Capsella bursa-pastoris</i> Shepherd's purse	No			●	●						●		
<i>Cardamine oligosperma</i> Milk-maids	Yes			●									
<i>Carduus pycnocephalus</i> Italian thistle	No (NW)	●			●					●			
<i>Carex</i> sp. Sedge		●		●	●								

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Carex obtusa</i> Slough sedge	Yes	●		●	●							
<i>Castilleja attenuata</i> Valley tassels	Yes			●			●			●		
<i>Castilleja campestris</i>	Yes									●		
<i>Castilleja densiflora</i> Owl's-clover	Yes			●								
<i>Centaurea solstitialis</i> Yellow starthistle	No (NW)	●		●	●	●			●		●	
<i>Centaureum muehlenbergii</i> Canchalagua	Yes			●	●	●	●	●	●			
<i>Cerastium glomeratum</i> Mouse-ears	No			●	●					●		
<i>Chamaesyce maculata</i> Spotted spurge	No					●						
<i>Chamomilla suaveolens</i> Pineapple weed	No			●	●	●	●	●	●		●	

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Chlorogalum pomeridianum</i> Soaproot	Yes	●		●	●	●						
<i>Cicendia quadrangularis</i> Cicendia	Yes			●		●			●	●		
<i>Cichorium intybus</i> Chicory	No	●	●	●	●	●	●	●	●		●	
<i>Cirsium vulgare</i> Bull-thistle	No (NW)	●		●	●						●	
<i>Conium maculatum</i> Poison hemlock	No (NW)	●									●	
<i>Convolvulus arvensis</i> Bindweed	No			●	●	●	●	●		●	●	●
<i>Conyza canadensis</i> Horseweed	Yes			●	●							
<i>Conyza bonariensis</i> Mare's tail	No	●			●							
<i>Cortaderia jubata</i> Pampas grass	No (NW)			●	●							

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Cotula coronopifolia</i> Brass buttons	No					●				●		●
<i>Crassula connata</i> Pygmyweed	Yes			●	●		●					●
<i>Crassula aquatica</i> Pygmyweed	Yes			●	●		●			●	●	
<i>Crataegus</i> sp. Hawthorn	Yes									●		
<i>Crepis occidentalis</i> Hawk's-beard	Yes					●						
<i>Crypsis schoenoides</i> Swamp timothy	No			●	●							
<i>Cynodon dactylon</i> Bermuda-grass	No			●	●		●		●			
<i>Cynosurus echinatus</i> Dogtail grass	No									●		
<i>Cyperus eragrostis</i> Umbrella sedge	Yes	●		●	●	●	●	●	●	●	●	●

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Dactylus glomeratus</i> Orchard grass	No			●								
<i>Danthonia californica</i> California oatgrass	Yes		●	●	●	●	●	●	●	●	●	●
<i>Deschampsia danthonioides</i> Annual hairgrass	Yes		●	●	●	●	●			●	●	●
<i>Deschampsia cespitosa</i> ssp. <i>holciformis</i> Pacific hairgrass	Yes											●
<i>Dipsacus sativus</i> Common teasel	No	●		●	●		●			●	●	
<i>Downingia concolor</i> Downingia	Yes		●	●	●	●	●			●	●	●
<i>Echinochloa crus-galli</i> Barnyard grass	No										●	
<i>Echinochloa muricata</i> Barnyard grass	No											●

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Eleocharis macrostachya</i> Common spikerush	Yes	●	●	●	●	●				●	●	●
<i>Eleocharis acicularis</i> Least spikerush	Yes	●		●	●	●				●		
<i>Epilobium ciliatum</i> Northern willowherb	Yes											●
<i>Epilobium pygmaeum</i> Pygmy-willowherb	Yes	●				●				●		
<i>Epilobium brachycarpum</i> Willowherb	Yes	●		●	●	●	●			●	●	●
<i>Eremocarpus setigerus</i> Turkey mullein	Yes		●	●				●		●		●
<i>Eriogonum</i> sp. Buckwheat	Yes			●								
<i>Erodium botrys</i> Broad-leaved filaree	No	●		●	●	●	●	●	●	●	●	
<i>Erodium cicutarium</i> Redstem filaree	No			●	●		●	●	●		●	

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Eryngium armatum</i> Armed coyote-thistle	Yes		●	●	●	●	●			●		●
<i>Eschscholzia californica</i> California poppy	Yes			●	●	●	●	●		●	●	
<i>Eucalyptus globulus</i> Blue-gum	No (NW)				●							
<i>Festuca arundinacea</i> Tall fescue	No			●	●	●	●			●	●	
<i>Filago gallica</i> Filago	No			●	●	●	●	●	●			
<i>Filago californica</i>	Yes									●		
<i>Foeniculum vulgare</i> Sweet fennel	No (NW)	●		●	●						●	
<i>Fraxinus latifolia</i> Oregon ash	Yes	●									●	
<i>Galium aparine</i> Bedstraw	No			●	●	●				s	●	



Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Geranium molle</i> Dove's foot geranium	No									●		
<i>Geranium dissectum</i> Cut-leaf geranium	No			●	●	●			●	●	●	
<i>Glyceria declinata</i> Mannagrass	No (NW)	●		●	●					●	●	●
<i>Gnaphalium luteo-album</i> Weedy cudweed	No			●	●	●			●			●
<i>Gratiola ebracteata</i> Bractless hedge-hyssop	Yes		●	●	●		●			●		
<i>Grindelia camporum</i> Great Valley gumweed	Yes					●	●	●				
<i>Hemizonia congesta</i> ssp. <i>luzulifolia</i> Hayfield tarweed	Yes					●						
<i>Hemizonia congesta</i> ssp. <i>congesta</i> Yellow hayfield tarweed	Yes			●	●					●		

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Hemizonia fitchii</i> Fitch's tarweed	Yes						●	●	●	●		
<i>Hemizonia parryi</i> ssp. <i>parryi</i> Pappose spikeweed	Yes									●		
<i>Hemizonia</i> sp. Tarweed	Yes					●	●			●		
<i>Hesperavax caulescens</i> var. <i>hesperavax</i>	Yes			●	●			●	●			
<i>Heterotheca grandiflora</i> Telegraph weed	Yes	●		●								
<i>Hirschfeldia incana</i> Mediterranean mustard	No			●							●	
<i>Holcus lanatus</i> Velvet grass	No (NW)			●	●	●				●	●	
<i>Holocarpha heermannii</i>	Yes	●										
<i>Hordeum brachyantherum</i> Meadow barley	Yes		●	●	●					●	●	●

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i> Mediterranean barley	No		●	●	●	●	●	●	●	●	●	●
<i>Hordeum murinum</i> ssp. <i>leporinum</i> Hare barley	No			●	●	●		●		●	●	●
<i>Hypericum perforatum</i> Klammath-weed	No (NW)			●	●						●	
<i>Hypochaeris radicata</i> Hairy cat's-ear	No			●	●	●	●	●	●	●	●	●
<i>Hypochaeris glabra</i> Smooth cat's-ear	No		●	●	●	●	●	●	●	●	●	●
<i>Juglans californica</i> var. <i>hindsii</i> (?) (LIST 1B) Northern California black walnut	Yes	?										
<i>Juncus patens</i> Blue rush	Yes					●						

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Juncus bufonius</i> Toadrush	Yes		●	●	●	●				●	●	●
<i>Juncus capitatus</i> Headrush	No			●	●	●	●			●		
<i>Juncus effusus</i> Soft rush	Yes			●	●	●						
<i>Juncus occidentalis</i> Western rush	Yes				●	●	●					
<i>Juncus phaeocephalus</i> Brownhead rush	Yes			●	●	●				●		●
<i>Juncus tenuis</i> Slender rush	Yes	●		●	●	●	●			●	●	
<i>Juncus uncialis</i> Dwarf rush	Yes			●	●		●					
<i>Juncus xiphioides</i> Iris-leaved rush	Yes	●		●	●	●						
<i>Juncus balticus</i> Baltic rush	Yes	●										

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Kickxia</i> sp. Fluellin	No			●	●							
<i>Lactuca serriola</i> Prickly lettuce	No	●		●	●						●	●
<i>Lactuca saligna</i> Narrow-leaved lettuce	No	●		●	●						●	
<i>Lasthenia glaberrima</i> Smooth goldfields	Yes			●			●			●	●	
<i>Lasthenia fremontii</i> Fremont's goldfields	Yes					●						
<i>Lasthenia glabrata</i> Yellowray goldfields	Yes							●				
<i>Lasthenia burkei</i> (FE, SE) Burke's goldfields	Yes		●							●		
<i>Lathyrus</i> sp. Vetch	Yes			●								
<i>Layia platyglossa</i> Tidy-tips	Yes			●	●							

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Leontodon taraxacoides</i> Hawkbit	No		●	●	●	●	●	●	●	●	●	●
<i>Lepidium latifolium</i> Perennial pepperweed	No (NW)			●	●							
<i>Lessingia</i> sp.	Yes									●		
<i>Leymus triticoides</i> Creeping wildrye	Yes			●	●						●	
<i>Lilaea scillioides</i> Flowering quillwort	Yes		●	●	●	●	●			●	●	●
<i>Limnanthes douglasii</i> Douglas's meadowfoam	Yes			●	●	●	●			●		
<i>Linum perenne</i> Flax	No					●	●					
<i>Lolium multiflorum</i> Italian wildrye	No	●		●	●	●	●	●	●	●	●	●
<i>Lolium perenne</i> Perennial wildrye	No									●		

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Lotus micranthus</i> Small-flowered lotus	Yes			●	●	●	●	●		●		
<i>Lotus purshianus</i> Spanish clover	Yes			●	●	●	●	●	●	●	●	●
<i>Lotus corniculatus</i> Bird's'-foot trefoil	No			●	●	●	●	●				
<i>Ludwigia peploides</i> Floating seedbox	No			●								
<i>Lupinus nanus</i> Sky-lupine	Yes			●	●	●	●	●	●	●		
<i>Lupinus bicolor</i> Miniature lupine	Yes		●	●	●	●	●	●	●	●	●	
<i>Lythrum hyssopifolium</i> Hyssop loosestrife	No	●		●	●		●	●	●	●	●	●
<i>Madia sativa</i> Coast tarweed	No									●		
<i>Malva neglecta</i> Common mallow	No											●

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Medicago polymorpha</i> burclover	No			●	●	●	●	●	●		●	●
<i>Medicago lupulina</i> Burclover	No			●	●	●	●	●	●	●	●	●
<i>Mentha pulegium</i> Penny-royal	No (NW)	●		●	●	●	●			●	●	●
<i>Microseris</i> sp. Microseris	Yes			●	●	●	●	●	●			
<i>Mimulus guttatus</i> Marsh monkey-flower	Yes											
<i>Mimulus tricolor</i>	Yes									●		
<i>Muilla maritima</i> Common muilla	Yes			●	●		●					
<i>Nassella pulchra</i> Purple needle-grass	Yes			●	●	●	●	●			●	
<i>Navarretia tagetina</i> Navarretia	Yes			●	●	●	●			●	●	



Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Navarretia intertexta</i> Needle-leaf navarretia	Yes					●	●					
<i>Oxalis corniculata</i> Creeping oxalis	No			●								
<i>Panicum capillare</i> Witchgrass	No						●					
<i>Parentucellia viscosa</i> Parentucellia	No			●	●	●	●	●	●		●	
<i>Paspalum dilatatum</i> Dallis grass	No			●	●							
<i>Perideridia kelloggii</i> Kellogg's yampah	Yes		●	●	●					●		
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> (List 4) Gardner's yampah	Yes									●		
<i>Petrorhagia</i> sp.	No									●		

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Phalaris aquatica</i> Harding-grass	No	●	●	●	●	●	●	●		●	●	
<i>Phalaris arundinacea</i> Harding grass	No							●				
<i>Phleum pratense</i> Cultivated timothy	No			●	●					●	●	
<i>Picris echioides</i> Prickly ox-tongue	No			●	●	●	●	●	●	●	●	●
<i>Plagiobothrys stipitatus</i> Slender popcorn-flower	Yes			●	●	●	●	●	●	●		●
<i>Plantago elongata</i> Elongate plantain	Yes			●								
<i>Plantago erecta</i> California plantain	Yes			●	●	●	●	●	●	●		
<i>Plantago lanceolata</i> English plantain	No			●	●	●	●	●	●	●	●	
<i>Plantago major</i> Common plantain	No	●		●	●		●				●	

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Plantago coronopus</i> Cut-leaf plantain	No				●	●	●	●	●		●	
<i>Pleuropogon californicus</i> Semaphore grass	Yes			●	●	●	●				●	●
<i>Poa annua</i> Blue-grass	No			●	●	●	●	●	●	●	●	●
<i>Pogogyne douglasii</i> Douglas's pogogyne	Yes									●		●
<i>Polygonum arenastrum</i> Common knotweed	No	●		●	●		●			●		●
<i>Polygonum persicaria</i> Lady's thumb	No				●							
<i>Polypogon monspeliensis</i> Rabbit's foot grass	Yes			●	●					●		●
<i>Populus alba</i> White poplar	No			●								
<i>Populus nigra</i> var. <i>italica</i> Lombardy poplar	No			●								

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Populus fremontii</i> Fremont's poplar	Yes			●	●						●	
<i>Portulaca oleracea</i> Common purselane	No											●
<i>Prunus cerasifera</i> Cherry Plum	No	●	●							●		
<i>Prunus cerasifera</i> Plum rootstock	No	●		●						●	●	
<i>Psilocarphus oregonus</i> Oregon woolly-heads	Yes									●		●
<i>Psilocarphus brevissimus</i> Dwarf woolly-heads	Yes			●	●		●			●		
<i>Quercus douglasii</i> Blue oak	Yes			●								
<i>Quercus garryana</i> Oregon oak	Yes									●		
<i>Quercus lobata</i> Valley oak	Yes	●		●							●	

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Quercus agrifolia</i> Coast live oak	Yes	●		●	●						●	
<i>Ranunculus arvensis</i> Corn buttercup	No			●								
<i>Ranunculus</i> sp.										●		
<i>Ranunculus lobbii</i> (List 4) Lobb's buttercup	Yes			●	●					●		
<i>Ranunculus muricatus</i> Spiny-fruit buttercup	No	●	●	●	●							●
<i>Ranunculus pusillus</i> Low buttercup	Yes			●						●		
<i>Raphanus sativus</i> Wild radish	No	●		●	●		●			●	●	
<i>Rorippa curvisiliqua</i> Curve-pod yellow-cress	Yes			●	●	●				●	●	
<i>Rosa californica</i> California rose	Yes	●		●								

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Rubus ursinus</i> California blackberry	Yes	●										
<i>Rubus discolor</i> Himalayan blackberry	No	●		●	●		●	●			●	
<i>Rumex acetocella</i> Sheep sorrel	No			●	●	●	●			●	●	
<i>Rumex crispus</i> Curly dock	No	●		●	●	●	●	●	●	●	●	
<i>Rumex pulcher</i> Fiddle-dock	No	●		●	●	●				●		
<i>Salix laevigata</i> Red willow	Yes	●		●	●							
<i>Salix lasiolepis</i> Arroyo willow	Yes			●	●						●	
<i>Salix lutea</i> Yellow willow	Yes	●										
<i>Salix exigua</i> Sandbar willow	Yes	●			●						●	

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Sambucus mexicana</i> Blue elderberry	Yes	●										
<i>Scandix pecten-veneris</i> Shepherd's needle	No		●							●	●	
<i>Scirpus microcarpus</i> Small-flowered rush	Yes			●	●							
<i>Scirpus acutus</i> Common tule	Yes			●	●							
<i>Senecio vulgaris</i> Common groundsel	No			●	●						●	
<i>Silybum marianum</i> Milk-thistle	No	●									●	
<i>Sisyrinchium bellum</i> Blue-eyed grass	Yes			●	●	●	●	●		●	●	
<i>Soliva sessilis</i>	No									●		
<i>Sonchus asper</i> Prickly sowthistle	No			●	●	●		●		●	●	

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Spergula arvensis</i> Stickwort	No			●	●	●			●	●		
<i>Spergularia rubra</i> Sand-spurrey	No	●		●	●	●	●			●		
<i>Symphoricarpos</i> sp. Snowberry	Yes			●							●	
<i>Taeniatherum caput-medusae</i> Medusa-head	No (NW)	●		●	●	●				●		
<i>Taraxacum officinale</i> Dandelion	No	●		●	●			●		●	●	
<i>Teesdalia coronopifolia</i> Teesdalia	No				●		●	●				
<i>Torilis arvensis</i> Hedge parsley	No			●	●							
<i>Toxicodendron diversilobum</i> Poison-oak	Yes	●		●	●					●	●	
<i>Tragopogon porrifolius</i> Salsify	No	●			●	●					●	



Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	SACMA-II (Duran Property)
<i>Trichostema</i> sp. Bluecurls	Yes									●		
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i> (?) <b>List 1B</b> Balloon clover	Yes				●	●	●			●		
<i>Trifolium dubium</i> Shamrock	No			●	●			●				
<i>Trifolium fucatum</i> Bull clover	Yes			●	●	●						
<i>Trifolium gracilentum</i> Pinpoint clover	Yes			●						●	●	
<i>Trifolium hirtum</i> Rose clover	No			●	●		●		●		●	
<i>Trifolium hybridum</i> Alsike clover	No				●							
<i>Trifolium microdon</i>	No									●		

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Trifolium microcephalum</i> Small-headed clover	Yes						●					
<i>Trifolium pratense</i> Red clover	No			●	●							
<i>Trifolium subterraneum</i> Subterranean clover	No			●	●	●		●	●	●	●	
<i>Trifolium variegatum</i> Variegated clover	Yes			●	●		●					
<i>Trifolium willdenovii</i> Tomcat clover	Yes			●			●					
<i>Trifolium wormskioldii</i> Cow clover	Yes			●			●					
<i>Triphysaria pusilla</i> Small owl's-clover	Yes			●	●	●	●	●	●	●	●	
<i>Triphysaria vericolor</i> ssp. <i>faucibarbata</i>	Yes									●●		
<i>Triphysaria eriantha</i> Johnny-tuck	Yes			●	●	●	●	●				

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA	
<i>Triteleia laxa</i> Ithuriel's spear	Yes			●	●	●	●	●	●			
<i>Triteleia hyacinthina</i> White brodiaea	Yes		●	●	●	●				●		
<i>Typha domingensis</i> Southern cattails	No	●		●	●							
<i>Typha latifolia</i> Broad-leaved cattails	Yes	●		●	●						●	
<i>Ulmus pumila</i> Siberian elm	No	●										
<i>Veronica anagallis-aquatica</i> Water speedwell	No			●						●		
<i>Veronica americana</i> American speedwell	Yes				●							
<i>Vicia sativa</i> Spring vetch	No		●	●	●							
<i>Vicia americana</i> American vetch	Yes			●	●	●		●	●		●	

Scientific Name Common Name	Native Species	Survey Subarea (see Figure 3)										SACMA-II (Duran Property)	
		North of Goldfields Preserve	Goldfields Preserve	Infield	South of Infield	Executive Hangar Taxiway	Apex Aviation	Reach Helicopter	Maintenance Shop	SACMA	West of SACMA		
<i>Vicia benghalensis</i> Vetch	No			●							●	●	
<i>Vicia lutea</i> Yellow vetch	No	●	●	●	●								
<i>Vicia villosa</i> Hairy vetch	No	●	s	●	●								
<i>Vitis californica</i> Wild grape	No	●			●								
<i>Vulpia myuros</i> Foxtail fescue	No			●	●						●		
<i>Vulpia bromoides</i> Annual fescue	No			●	●	●	●	●	●			●	
<i>Wyethia angustifolia</i> Narrow-leaved mule's-ears	Yes			●	●	●	●				●	●	
<i>Xanthium strumarium</i> Cocklebur	Yes			●									

Key:

**NW** = Noxious weed species as defined by the California Invasive Plant Council (1999) and/or noxious weed in vernal pool ecosystems on the Santa Rosa Plain.

**FE** = Federally-listed as endangered.

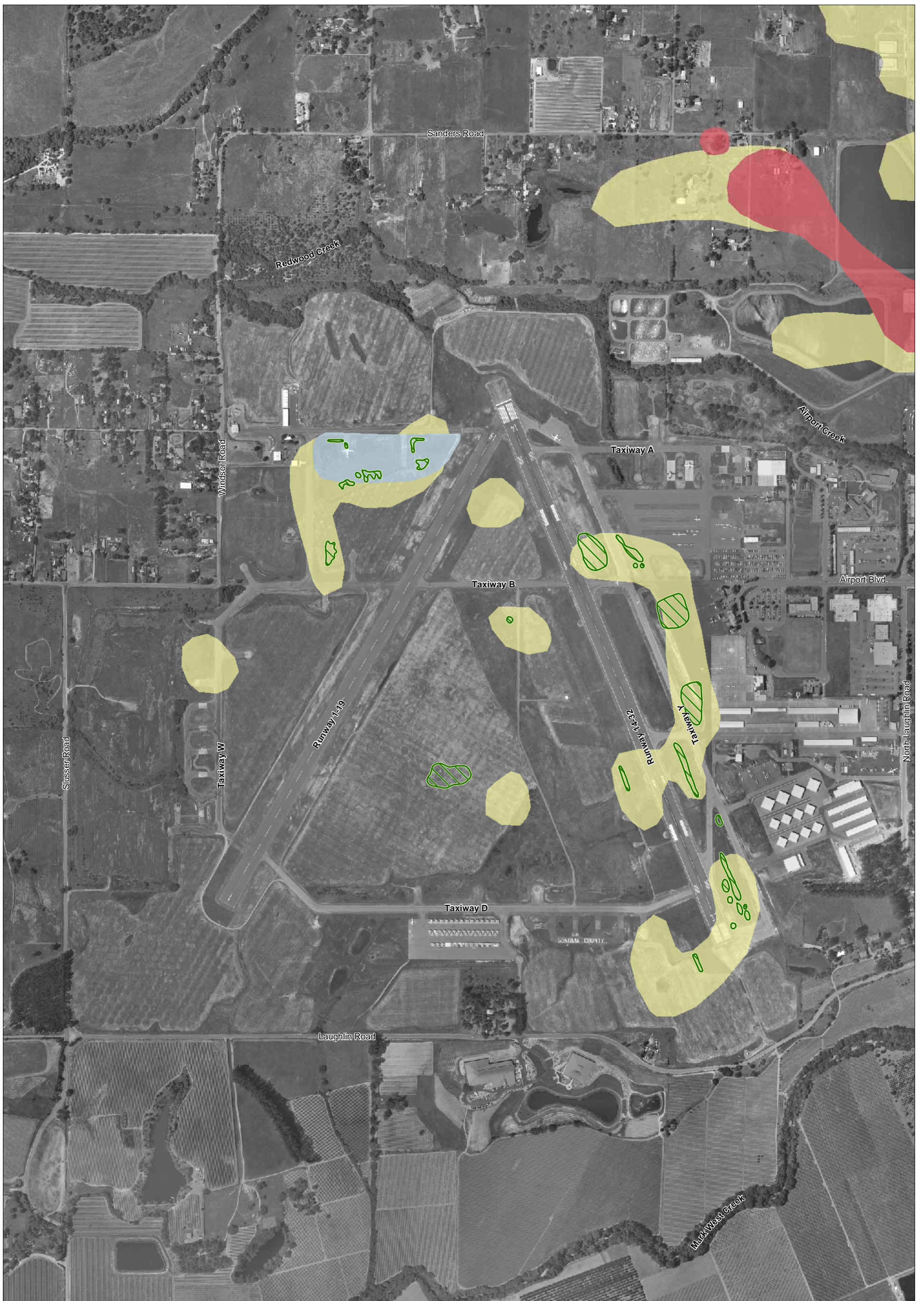
**SE** = State-listed as endangered.

**List 1B** = CNPS considers species rare, threatened, or endangered in California and elsewhere.

**List 4** = Species is on the CNPS "Watch List" of plant species with a limited distribution.

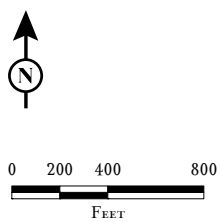
(?) = Identity of plant species uncertain but may be the species status.

**APPENDIX B**  
**LOCATIONS OF CNDDDB HISTORIC OCCURRENCE RECORDS -**  
**SONOMA COUNTY AIRPORT**



LSA

APPENDIX B



 BURKE'S GOLDFIELDS PRESENT IN 1987

CNDDDB HISTORIC RECORDS

 BURKE'S GOLDFIELDS

 SEBASTOPOL MEADOWFOAM

 MANY-FLOWERED NAVARRETTIA

Sonoma County Airport

Locations of Historic Plant Occurrence Records - CNDDDB and Patterson (1987)