

APPENDIX I

CULTURAL AND PALEONTOLOGICAL RESOURCES

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**CULTURAL AND PALEONTOLOGICAL
RESOURCES STUDY FOR THE CHARLES M.
SCHULZ-SONOMA COUNTY AIRPORT
MASTER PLAN IMPLEMENTATION
PROJECT**

SANTA ROSA, SONOMA COUNTY, CALIFORNIA



LSA

July 2011

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MASTER PLAN IMPLEMENTATION
PROJECT**

SANTA ROSA, SONOMA COUNTY, CALIFORNIA

Submitted to

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INTRODUCTION

The County of Sonoma (County), in cooperation with Federal Aviation Association (FAA), is proposing the Charles M. Schulz - Sonoma County Airport Master Plan Implementation Project (project), a series of improvements to the facilities that comprise the Charles M. Schulz – Sonoma County Airport (Airport). LSA Associates, Inc. (LSA), conducted a cultural and paleontological resources study for the project, which is located in Santa Rosa, Sonoma County, California (Appendix A: Figures 1 and 2). The approximately 1,100-acre Area of Potential Effect (APE) contains an Archaeological APE and a Historic Resource APE, both of which were developed by the FAA as the federal Lead Agency and the County as the CEQA Lead Agency. The APEs are hereafter referred to collectively as “the APE” and consist of runways and associated facilities, open fields, and adjacent private property on generally level terrain in central Sonoma County, as depicted on the 1993 *Healdsburg, California* 7.5-minute topographic quadrangle (Appendix A: Figures 2, 3a, and 3b).

The purpose of this cultural and paleontological resources study is to (1) identify cultural resources in the APE that *may* meet the CEQA definition of a historical or unique archaeological resource; (2) identify paleontological resources (fossils) in the APE that may be significant; (3) identify human remains that may be present in the APE, including those interred outside of formal cemeteries; and (4) provide recommendations to avoid, minimize, or mitigate adverse effects on (a) potentially significant cultural and paleontological resources and (b) human remains.

The cultural resources study consisted of background research, consultation with potentially interested parties, and a field survey. No eligibility evaluations or impacts assessments were conducted as part of this study. The study identified two prehistoric archaeological cultural resources, three historic-period archaeological cultural resources, and nine built environment cultural resources in the APE. Additionally, the study found that, while the northern portion of the APE around Redwood Creek has the potential to contain subsurface archaeological deposits based on soil characteristics and geomorphology, project activities are not likely to occur at the depth at where such deposits may exist. Recommendations are made for additional study that is necessary to determine the CEQA status of cultural resources in the APE, as well as for the identification and treatment of unanticipated discoveries made during project implementation.

The paleontological resources study consisted of a fossil locality search and a literature review. Background research was conducted to identify geologic units, paleontological studies, fossil localities (i.e., a location at which paleontological resources have been documented), and the types of fossils that may be within or adjacent to the APE. No paleontological resources were identified in or adjacent to the APE. Further study for paleontological resources is not recommended at this time, but recommendations are made for the identification and treatment of unanticipated discoveries in the APE.

This study was conducted by LSA archaeologists Karin Goetter Beck, Kathleen Kubal, and Alexandra Greenwald. Ms. Kubal has a Bachelor of Arts degree in Anthropology and French, with seven years of research, field, and laboratory experience in California archaeology. Ms. Kubal was a

Master of Arts degree Candidate in Cultural Resources Management at Sonoma State University at the time of the survey and earned her degree in December 2010. Ms. Greenwald has a Bachelor of Arts degree in Anthropology/Archaeology, and has four years of research, field, and laboratory experience in California archaeology. Ms. Beck has a Master of Arts degree in Cultural Resources Management, is a Registered Professional Archaeologist (#15758) and a Registered Professional Historian (#597), and has 15 years experience in California archaeology and history. Ms. Beck meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric and historical archeology.

PROJECT DESCRIPTION

The County, in cooperation with the FAA, is proposing a series of improvements at the Airport. These improvements are anticipated to occur in two separate timeframes. The first timeframe would occur by 2015 and would include the following improvements at the Airport:

- Extend Runway 14/32 by 885 feet for a total pavement length of 6,000 feet
- Extend Runway 1/19 by 200 feet for a total pavement length of 5,202 feet
- Extend Taxiway Y / construct bypass taxiway to Runway 14/32
- Construct 200-foot blast pad for Runway 14 arrival end
- Construct replacement run-up apron located between Taxiway Y and A
- Remove existing run-up and taxiways at approach end of Runway 14
- Construct new taxiway between Runway 14/32 and Taxiway Y
- Add runway edge lights to Runway 1/19
- Construct Taxiway V with edge lights and standard signage
- Reconstruct and widen Taxiway B between Runway 14/32 and Runway 1/19
- Remove segment of Taxiway D and re-grade site
- Construct connecting taxiway to Runway 1/19 and Taxiway Y
- Construct 200-foot-blast pad for Runway 19 arrival end
- Realign Redwood Creek and put portion of creek into a culvert
- Place high-water ditch into a culvert
- Construct RSA beyond arrival end of Runways 1, 14, and 19
- Relocate and pave access roads outside RSA for all runways
- Remove trees and vegetation for airspace clearance
- Temporarily cover or disturb land used for haul roads, staging and spoils areas
- Create two stormwater basins
- Relocate localizer antenna, equipment building, and construct standby generator
- Acquire three parcels of land for RSA construction and approach protection
- Extend Taxiway D to departure end of Runway 32
- Remove eastern segment of Taxiway D

The second timeframe would occur between 2016 and 2030 and would include the following improvements at the Airport:

- Remove Taxiway Z and re-grade site
- Maintain existing airfield pavement through the use of slurry seals, overlays or repairs of isolated failures
- Trim or remove individual trees in the vicinity of the Airport that grow into the airspace required to be protected
- Construct a replacement airline passenger terminal

- Re-use or demolish the existing airline passenger terminal building
- Demolish helipads
- Demolish the existing ARFF (Aircraft Rescue and Fire Fighting) building
- Construct a replacement ARFF building
- Construct new taxi lanes to provide access to new private-use hangars
- Designate a site for an air cargo facility to serve small-package shipping
- Identify an on-Airport aiming point for helicopter landings
- Develop a new Air Traffic Control Tower (ATCT)
- Reuse or demolish existing ATCT
- Acquire property designated in the Master Plan Update (and not associated with the Runway 14-32 extension) for approach protection, including: relocation of residents; demolition of buildings; filling man-made ponds on these properties; and installing new perimeter fencing.
- Relocate and/or construct miscellaneous aviation support facilities. Examples include replacing landing aids (replace the VASI with a PAPI) or construction of individual hangars as in-fill projects.

ENVIRONMENTAL SETTING

The APE is located at the Airport, which encompasses approximately 1,050 acres in central Sonoma County, southeast of the existing limits of the town of Windsor (Appendix A: Figures 1 and 2). The APE is on level terrain at an elevation of 125 feet above mean sea level, in Township 8 North, Range 9 West, Mount Diablo Base Line and Meridian. The APE is bounded by an office and industrial park on the east, a water treatment facility on the northeast and agricultural fields with scattered residences on the north, south, and west. Redwood Creek flows east-to-west through the northern end of the Airport property. The confluence of Airport Creek and Redwood Creek is just inside the eastern boundary of the Airport property. Ordinance Creek flows south-to-north in the northern portion of the Airport and converges with Redwood Creek west of Airport property. Redwood Creek converges with Windsor Creek about one mile downstream (west) off Airport property, and eventually flows into Mark West Creek. Although not on Airport property, Mark West Creek flows near the southern border of the Airport.

GEOLOGY AND SOILS

The APE is situated in an alluvial valley on generally level terrain at about 125 feet above sea level. Geologically, Quaternary (1.8 million years ago [mya] to present) Holocene (10,000 years before present [B.P.] to present) alluvium deposited by Mark West Creek and a tributary of Windsor Creek are present in the northern and southern portions of the APE. The Quaternary Late Pleistocene (126 mya to 10,000 years B.P.) Huichica and Glen Ellen Formation of fluvial gravel, silt, sand, and conglomerate underlies the central portion of the APE (Wagner and Bortugno 1982). Underlying the Quaternary deposits at an unknown depth are the Pliocene (5.3 mya to 1.8 mya) Wilson Grove Formation of marine sandstone, conglomerate, and tuff, and the Sonoma Volcanics (Wagner and Bortugno 1982). Underlying the Pliocene Sonoma Volcanics and Wilson Grove Formation is the Mesozoic (248 mya to 65 mya) Franciscan Complex (Wagner and Bortugno 1982), the basement formation of this region.

The soils in the APE are the Huichica, Zamora, Yolo, and Pajaro series of the Huichica-Wright-Zamora Complex (U.C. Davis Soil Resource Laboratory 2009). Huichica loam, a well-developed soil on 0-15 percent slopes, is approximately 5 feet deep and is formed from alluvium derived from igneous, sedimentary, and metamorphic rock. This type of soil encompasses the majority of the APE. Zamora silty clay loam, a well-developed soil on 0-2 percent slopes, is approximately 5 feet deep and is formed from alluvium derived from sedimentary rock. This type of soil is located along Redwood Creek. Yolo loam, a poorly-developed soil on 0-2 percent slopes, is approximately 5 feet deep and is formed from alluvium derived from sedimentary rock. This type of soil is adjacent to the north bank of Mark West Creek. Pajaro gravelly loam, a poorly-developed soil on 0-5 percent slopes, is approximately 5 feet deep, and is formed from alluvium derived from sedimentary rock (U.C. Davis Soil Resource Laboratory 2009). In addition to the soils described above, poorly-developed clayey, sandy, and gravelly alluvium approximately 5 feet deep is located in the northwestern portion of the

APE adjacent to Redwood Creek near its confluence with Windsor Creek, and in the southern portion of the APE adjacent to Mark West Creek (U.C. Davis Soil Resource Laboratory 2009).

CULTURAL SETTING

Prehistory

The Paleo-Archaic-Emergent cultural sequence developed by Fredrickson (1974) is commonly used to interpret the prehistoric occupation of Central California. Using radiocarbon determinations (Groza 2002; LaJeunesse and Pryor 1996; Meyer and Rosenthal 1997), the sequence is broken into three broad periods: the Paleo-Indian period (11550 to 8550 B.C.); the three-staged Archaic period, consisting of the Lower Archaic (8550 to 5550 B.C.), Middle Archaic (5550 to 550 B.C.), and Upper Archaic (550 B.C. to 1100 A.D.); and the Emergent period (A.D. 1100 to 1769).

The Paleo-Indian Period began with the first entry of people into California. These people probably subsisted mainly on big game, minimally processed plant foods, and had few or no trade networks. During the Lower Archaic, milling stones appear in abundance and hunting is less important than plant foods. Artifacts are made predominately from local materials, suggesting that few if any extensive trade networks were established at this time. The subsistence base begins to expand and diversify during the Middle Archaic with a developing acorn economy, as evidenced by the mortar and pestle, and the growing importance of hunting. Status and wealth distinctions are evidenced in the Upper Archaic archaeological record; regional exchange networks are well established at this time with goods and ideas, such as *Kuksu* ceremonial practices involving spirit impersonations, exchanged. Increased social complexity continued during the Lower Emergent. Territorial boundaries were well established by this time with regularized inter-group exchanges involving more and varied goods, people, and ideas. Bow and arrow technology was also introduced. By the Upper Emergent, a monetary system based on the exchange of clamshell disk beads was established.

Several prehistoric archaeological sites excavated in north-central and south-central Sonoma County provide a chronology of occupation dating from the Paleo-Indian Period until Euro-American contact. In north-central Sonoma County, Basgall (1993) analyzed archaeological data from several sites from the Warm Springs Creek locality and identified three phases of Native American occupation of the area. The oldest occupation from the Warm Springs locality is the Skaggs phase (ca. 5000-2500 B.P.), possibly representing early Yukian settlement and use of the area. Skaggs phase sites include large concave base and "Willits" side-notched projectile points and mano and metates. The Dry Creek phase (ca. 2500-900 B.P.) represents possible Pomoan intrusion into north-central Sonoma County (cf. Stewart 1993) and includes shouldered lanceolate and leaf shaped projectile points and mortars and pestles. Smith phase (900-100 B.P.) sites represent a florescence of Pomoan society and include small corner notched arrow points, continued use of mortars and pestles, clam shell disk and glass trade beads. In south-central Sonoma County tentative evidence exists for Native American use of the Laguna de Santa Rosa northwest of Rohnert Park during the Paleo-Indian period (pre-8000 B.P) and near Spring Lake in Santa Rosa during the Lower Archaic period (8000-4500 B.P.) (Jones and Hayes 1993).

Ethnography

The APE is ethnographically attributed to the Southern Pomo, one of seven distinct Pomoan groups, each of which spoke a different, mutually unintelligible language (McLendon and Oswalt 1978).

Southern Pomo territory extended about five miles south of Santa Rosa northward for about 40 miles. The Southern Pomo held a stretch of coastline extending from Gualala to just north of Stewarts Point, and their easternmost extent included the Big Sulphur Creek drainage west of Cobb Mountain.

The Southern Pomo groups who lived in the vicinity of the APE were the *Ūpawan'i* and *Cīōhūtmō'kōnī* (Barrett 1908:215). These groups lived in tribelets, or “village communities” (Kroeber 1925:228-229, 1932:258), which were generally situated near the Russian River and its numerous tributaries. These communities consisted of a principal village, where the chief resided, with outlying secondary settlements. A village community, ranging in population from 100 to 2,000 persons, claimed communal lands in which members could hunt, fish, or gather plant food without limitations of private ownership (Kroeber 1925:228). Although the structure of Pomo chieftainship varied, generally three levels of chieftainship existed: elected tribelet chiefs, kin-group chiefs, and assistant kin-group chiefs. Although there were exceptions, the tribelet chiefs were usually male. The tribelet chiefs arranged for and presided over ceremonies, entertained visitors, provided advice, and consulted with kin-group chiefs regarding community welfare.

Fish and game were obtained through individual and communal efforts, which ranged from small-scale snare trapping and the bow and arrow, to more complex undertakings such as constructing fish weirs and dams or brush fences to guide deer during hunting drives. The game provided not only food, but also hides and furs used for clothing, bedding, and utilitarian objects. Bones and antlers were made into a variety of tools, as well as ornamental and ceremonial items such as whistles and ear spoons.

The Southern Pomo economy focused on the acorn, a major staple of the California culture area Indians. At some point, probably more than 2,000 years ago, native Californians “discovered or acquired a technology enabling them to concentrate on the magnificent acorn crops.” The Pomo used acorns from seven different species of oaks. Other plant resources include fresh or stored included buckeyes, berries, grass seed, roots, bulbs, and greens. Seaweed and kelp were considered delicacies.

The Pomo are renowned for their utilitarian, ceremonial, gift, and trade baskets. They manufactured baskets using the bark, roots, leaves, or branches of grasses and trees, and used feathers and shells for decoration. Plant fibers were also used for making nets and cordage.

Economic exchange was vital to the Pomo, who traded with each other and with neighboring groups. Such exchanges provided resources that were not available locally and augmented local resources when they were in low supply, such as at times of acorn-crop failure.

History

By the late 18th-century, intensive Hispanic exploration of the Bay Area radically transformed Southern Pomo culture. Spanish settlement of California included the establishment of the mission system. Missions effectively rounded up native peoples, baptized them as Catholic, and created a work-force for maintaining the Spanish hold on Alta California. Local mission San Francisco de Asís was founded in 1776, and Mission San Rafael Arcangel was founded in 1817. In hopes of stemming Russian settlement inland, the Spanish founded Mission San Francisco de Solano in 1823 in the town of Sonoma. In 1812, the Russians established Fort Ross on the Sonoma Coast as an agricultural base to supply their northern settlements engaged in the fur trade with Alta California. By 1841, Fort Ross' importance had decreased considerably, the local population of fur-bearing marine mammals had long

been depleted by over-hunting, and the recently secularized California missions no longer supplemented the agricultural needs of the Alaskan colonies.

Following the secularization of the California missions in 1834, many Pomo lived on ranchos working in the burgeoning agricultural industry (Bean and Theodoratus 1978:299). Large ranchos were established by Mexican citizens throughout California, including 23 land grants in Sonoma County. Cattle ranching and timber grew to be the economic mainstays of Sonoma County until the Gold Rush, when a large population influx created a demand for other consumer products, most notably dairy products.

Referred to as the “Russian River” on early maps (Thompson 1877; Reynolds and Proctor 1898), the APE was nearly surrounded by Mexican land grants: *Sotoyome* to the north, *Los Molinos* to the west, and *San Miguel* to the south were all granted to relatives of General Mariano Vallejo, and *Mallacomes* to the east was granted to José de los Santos Berryessa. Rancho *San Miguel* was granted in 1840 to Mark (William Marcus) West, an Englishman who married General Vallejo’s niece (Gudde 1998:229). West built an adobe hacienda and established a mill, a trading post and post office near the present day Mark West Creek, approximately one mile east of the APE.

Sonoma was one of the original counties formed when California became a state in 1850. Its original county seat was in the town of Sonoma, but was changed to the more centrally located and bustling agricultural center of Santa Rosa in 1854. After the arrival of the San Francisco and North Pacific Railroad in 1870, Santa Rosa eventually surpassed Petaluma as the region’s population and commercial center. The railroad had a stop in the community of Mark West, which provided farmers with a means to transport their produce to market and fostered growth of agriculture in the region. Santa Rosa continued to grow in the 20th century, despite the nearly total destruction of its downtown brought about by the San Francisco earthquake of 1906.

In 1941, Sonoma County purchased over 330 acres of agricultural land and began constructing an airport runway in anticipation of the coming hostilities. With the start of World War II, the United States recognized our nation’s critical defense needs and increased the construction of auxiliary airfields dedicated to training military pilots. In 1942, the U.S. Army took over the Airport and expanded it to over 1,160 acres, extended the runway, and built a second runway and other facilities. From 1943 to 1946, the U.S. Fourth Air Corps operated the Santa Rosa Army Airfield as an advanced flight training center for combat aircrew, providing training primarily to fighter groups and squadrons. At its peak of operation, approximately 300 to 500 aircraft and 10,000 personnel were based on the army field (Sonoma County Airport 2011). In 1946, after the war had ended, Sonoma County resumed operation of the Airport as a civil facility.

Over the years, the Airport has operated primarily as a general aviation facility serving private/recreational airplanes, and business/corporate aircraft. On and off since the late 1960s, the Airport has offered passenger commuter service. In 2000, the Sonoma County Board of Supervisors voted to change the name to Charles M. Schulz – Sonoma County Airport in honor of the famous “Peanuts” comic strip cartoonist who lived in the county for many years. Today, the Airport offers regularly scheduled, non-stop flights to a number of regional destinations.

LEGISLATIVE CONTEXT

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (California Code of Regulations [CCR] Title 14(3) §15002(i)). CEQA states that it is the policy of the State of California to "take all action necessary to provide the people of this state with... historic environmental qualities...and preserve for future generations examples of the major periods of California history" (Public Resources Code [PRC] §21001(b), (c)). Under the provisions of CEQA, "A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (CCR Title 14(3) §15064.5(b)).

CEQA §15064.5(a) defines a "historical resource" as a resource which meets one or more of the following criteria:

- (1) Listed in, or eligible for listing in, the California Register;
- (2) Listed in a local register of historical resources (as defined at PRC §5020.1(k));
- (3) Identified as significant in a historical resource survey meeting the requirements of §5024.1(g) of the Public Resources Code; or
- (4) Determined to be a historical resource by a project's lead agency (CCR Title 14(3) §15064.5(a)).

A historical resource consists of "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California...Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (CCR Title 14(3) §15064.5(a)(3)).

CEQA requires that historical resources and unique archaeological resources be taken into consideration during the CEQA planning process (CCR Title 14(3) §15064.5; PRC §21083.2). If feasible, adverse effects to the significance of historical resources must be avoided, or the effects mitigated (CCR Title 14(3) §15064.5(b)(4)). The significance of an historical resource is impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for the California Register of Historical Resources. If there is a substantial adverse change in the significance of a historical resource, the preparation of an environmental impact report may be required (CCR Title 14(3) §15065(a)).

If the cultural resource in question is an archaeological site, CEQA (CCR Title 14(3) §15064.5(c)(1)) requires that the lead agency first determine if the site is a historical resource as defined in CCR Title 14(3) §15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be

considered in the same manner as a historical resource (California Office of Historic Preservation 2001a:8). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated in accordance with PRC §21083.2 (CCR Title 14(3) §15064.5(c)(3)). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource (Bass, Herson, and Bogdan 1999:105). CEQA defines a “unique archaeological resource” as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; or
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC §21083.2(g)).

If an impact to a historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the resource. Generally, the use of drawings, photographs, and/or displays does not mitigate the physical impact on the environment caused by demolition or destruction of a historical resource. However, CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less than significant level (PRC §21002.1(b)).

California Register of Historical Resources

The California Register of Historical Resources (California Register) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify and evaluate California’s historical resources (California Office of Historic Preservation 2001b:1), and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC §5024.1(a)). Any resource listed in, or eligible for listing in, the California Register is to be taken into consideration during the CEQA process.

The California Register was modeled after the National Register and the California Register significance and integrity criteria for listing historical resources are consistent with those of the National Register. A resource eligible for the National Register is eligible for the California Register. The National Register criteria, however, have been modified for state use by the California Office of Historic Preservation to include a range of historical resources which better reflect the history of California. There are three instances in which a resource not eligible for the National Register may be eligible for the California Register: moved resources; resources achieving significance in the past fifty years; and reconstructed resources:

- *Moved buildings, structures, or objects:* A moved building, structure, or object that is otherwise eligible may be listed in the California Register if it was (1) moved to prevent its demolition at its former location; and (2) if the new location is compatible with the original character and use of the historical resource.

- *Reconstructed buildings.* A building less than 50 years old may be eligible if it embodies traditional building methods and techniques that play an important role in a community's historically rooted beliefs, customs, and practices (e.g., a Native American roundhouse).
- *Historical resources achieving significance within the past 50 years.* Resources less than 50 years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance.

Significance Criteria. A cultural resource is evaluated under four California Register criteria to determine its historical significance. A resource must be significant in accordance with one or more of the following criteria:

- 1) Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;
- 2) Is associated with the lives of persons important in our past;
- 3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- 4) Has yielded, or may be likely to yield, information important in prehistory or history.

Age. In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource (California Office of Historic Preservation 2006:3; CCR Title 14(11.5) §4852 (d)(2)). The State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older.

Period of Significance. The period of significance for a property is "the span of time when a property was associated with important events, activities, persons, cultural groups, and land uses or attained important physical qualities or characteristics." The period of significance begins with the date of the earliest important land use or activity that is reflected by historic characteristics tangible today. The period closes with the date when events having historical importance ended. The period of significance for an archeological property is "the time range (which is usually estimated) during which the property was occupied or used and for which the property is likely to yield important information." Archeological properties may have more than one period of significance.

Historic Context. The significance of cultural resources is generally evaluated using a historic context which groups information about related historical resources based on theme, geographic limits, and chronological period.

Integrity. The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association."

- *Location* is the place where the historic property was constructed or the place where the historic event occurred. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons.
- *Design* is the combination of elements that create the form, plan, space, structure, and style of a property. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.
- *Setting* is the physical environment of a historic property. Setting refers to the character of the place in which the property played its historical role. Physical features that constitute the setting of a historic property can be either natural or manmade, including topographic features, vegetation, paths or fences, or relationships between buildings and other features or open space.
- *Materials* are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- *Workmanship* is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of the artisan's labor and skill in constructing or altering a building, structure, object, or site.
- *Feeling* is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character.
- *Association* is the direct link between an important historic event or person and a historic property.

Eligibility. Resources that are significant, meet the age guidelines, and possess integrity will generally be considered eligible for listing in the California Register.

Public Resources Code

California Public Resources Code §5097.5 prohibits excavation or removal of any “vertebrate paleontological site...or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands.” Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated cultural materials.

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources.

CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 also applies to paleontological resources (see above).

Sonoma County Landmarks Commission and General Plan Open Space and Resource Conservation Element

The Sonoma County Landmarks Commission was established on April 23, 1974, under Ordinance No. 1768, the same ordinance that provided the procedure for designation of Historic Structures (i.e., Historic Landmarks) and Historic Districts. The Ordinance establishes that the Commission shall consist of one resident from each Supervisorial District, appointed by the Board of Supervisors. The Sonoma County Permit & Resource Management Department assigns one Staff to the Commission. Among the duties and responsibilities of the Landmarks Commission are designating landmarks and historic districts; conducting architectural and design review for proposed projects; pursuing historic preservation grants; and maintaining historic resource inventory records.

The Sonoma County General Plan contains goals, objectives, and policies intended to identify, inventory, and protect significant resources that reflect and embody the history of Sonoma County. The following policies regarding cultural resources are included in the General Plan:

Policy OSRC-19a: Designate the County Landmarks Commission to review projects within designated historic districts.

Policy OSRC-19b: Refer proposals for County Landmark status and rezonings to the Historic Combining District to the County Landmarks Commission.

Policy OSRC-19c: The County Landmarks Commission shall review Historic Building Surveys and make recommendations for designation of structures or cemeteries as County landmarks.*

Policy OSRC-19d: Include a list of historic structures proposed for designation as County landmarks in Specific or Area Plans or Local Area Development Guidelines and refer the list to the Landmarks Commission for their recommendations.

Policy OSRC-19e: Refer applications that involve the removal, destruction or alteration of a structure or cemetery identified in a historic building survey to the Landmarks Commission for mitigation. Measures may include reuse, relocation, or photo documentation.

Policy OSRC-19f: Use the Heritage or Landmark Tree Ordinance and the design review process to protect trees.

Policy OSRC-19g: Pursue grant funding for the preparation and updating of historic resource inventories.

Policy OSRC-19h: Designate the County Landmarks Commission to administer a preservation program for stabilization, rehabilitation, and restoration of historic structures.

Policy OSRC-19i: Develop a historic resources protection program that provides for an ongoing process of updating the inventory of historic resources. Such a program should include: (1) Periodic historic building surveys, (2) Formalized recognition of the inventory of historic resources as recommended by the State Office of Historic Preservation, including rezoning to the Historic Combining District (HD), and (3) Procedures for the protection of recognized historic resources for both ministerial and discretionary permits.

Policy OSRC-19j: Develop an archaeological and paleontological resource protection program that provides: (1) Guidelines for land uses and development on parcels identified as containing such resources, (2) Standard project review procedures for protection of such resources when discovered during excavation and site disturbance, and (3) Educational materials for the building industry and the general public on the identification and protection of such resources.

Policy OSRC-19k: Refer applications for discretionary permits to the Northwest Information Center to determine if the project site might contain archaeological or historical resources. If a site is likely to have these resources, require a field survey and preparation of an archaeological report containing the results of the survey and include mitigation measures if needed.

Policy OSRC-19l: If a project site is determined to contain Native American cultural resources, such as sacred sites, places, features, or objects, including historic or prehistoric ruins, burial grounds, cemeteries, and ceremonial sites, notify and offer to consult with the tribe or tribes that have been identified as having cultural ties and affiliation with that geographic area.

Policy OSRC-19m: Develop procedures for consulting with appropriate Native American tribes during the General Plan adoption and amendment process.

Policy OSRC-19n: Develop procedures for complying with the provisions of State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98, if applicable, in the event of the discovery of a burial or suspected human bone. Develop procedures for consultation with the Most Likely Descendant as identified by the California Native American Heritage Commission, in the event that the remains are determined to be Native American.

METHODS

BACKGROUND RESEARCH

Background research was done to identify cultural resources within, and cultural resource studies of, the APE. The research consisted of a records search at the Northwest Information Center and a literature review.

Records Search

As a primary means of establishing baseline conditions in the APE, a records search (NWIC #09-0542) of the APE was conducted on October 30, 2009, then updated when the APE was expanded on April 29, 2011 (NWIC #10-1069), at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural resource records and reports for Sonoma County. As part of the records search, the following State of California inventories for cultural resources in and adjacent to the APE were reviewed:

- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976);
- *Five Views: An Ethnic Historic Site Survey for California* (California Office of Historic Preservation 1988);
- *California Historical Landmarks* (California Office of Historic Preservation 1996);
- *California Points of Historical Interest* (California Office of Historic Preservation 1992); and
- *Directory of Properties in the Historic Property Data File* (California Office of Historic Preservation, May 27, 2009; March 15, 2011). The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest.

The records search identified one cultural resource (CA-SON-1322) within the Area of Direct Impact (ADI) portion of the APE and two cultural resources (P-49-2795 and P-49-3564) within the APE:

- **CA-SON-1322**, a prehistoric archaeological site originally recorded by Origer and Amaroli (1981), located on the south bank of Redwood Creek in the northern ADI. The site measures 40 meters (east-west) by 25 meters (north-south) and consists of a sparse to moderate scatter of obsidian and chert flakes, with fire cracked rock. Artifacts include one obsidian flake, an obsidian projectile point base (collected), and a basalt mortar fragment.
- **P-49-2795**, a 20th-century site originally recorded by Gillies and MacDonald (2000), located northeast of the intersection of Windsor Road and Mark West Station Road, in the western portion of the APE, approximately 1,500 ft. west of Runway 19. The site measures 100 ft. (east-west) by 75 ft. (north-south) and consists of a concrete building pad, a U-shaped piece of concrete, a depression, and a pile of rusted ferrous roll-up doors.

- **P-49-3564**, a mid-20th-century refuse deposit recorded by Longfellow (2000), located on the east side of Slusser Road, just south of its intersection with Laughlin Road, approximately 2,000 ft. southeast of the southern end of Runway 19. The deposit, discovered during trenching, measured approximately 20 feet in length and was 7 feet below the present road surface. The artifacts included condiment and alcohol bottles, automotive-related sheet metal, and wire fencing.

Sixteen cultural resources were identified within a one-mile radius of the APE. The following sixteen cultural resource studies have been conducted *within* the APE:

Beard, Vicki

- 1996 *A Cultural Resources Study for the Airport Hangar Project, Sonoma County Airport, Sonoma County, California.* Tom Origer & Associates, Rohnert Park, California.
- 1999 Letter Report: *Preliminary Building Evaluations for the Airport Land Acquisition Program.* Tom Origer & Associates, Rohnert Park, California.
- 2002 Letter Report: *Evaluation of buildings at 6815 Windsor Road, Windsor (APN 066-250-009).* Tom Origer & Associates, Rohnert Park, California
- 2003 Letter Report: *Assessment of buildings at 1904 Sanders Road, Windsor (APN 164-170-002).* Tom Origer & Associates, Rohnert Park, California.
- 2005 *A Cultural Resources Survey for Planned Airport Security Fencing and Improvements Project, Sonoma County, California.* Tom Origer & Associates, Rohnert Park, California.
- 2008 *A Cultural Resources Survey of the Parcel at 1770 Sanders Road, Windsor, Sonoma County, California.* Tom Origer & Associates, Rohnert Park, California.

Derr, Eleanor H.

- 1997 Letter Report: *Sonoma CDF Air Attack Base.* Cultural Resources Unlimited, Rancho Cordova, California.

Gerike, Christian, and Sara E.P. Gillies

- 2000 *Plan for Evaluation of Cultural Resources, Santa Rosa Geysers Recharge Project, Sonoma County, California.* LSA Associates, Inc., Point Richmond, California.

King, Ana

- 1978 *An Archaeological Investigation of a Portion of the Barber Property, North of Airport Boulevard, Sonoma County, California.* Sonoma State University, Anthropology Laboratory, Rohnert Park, California.

Longfellow, Joy, and Christian Gerike

- 2004 *Cultural and Paleontological Resources Monitoring 2000-2003, the Geysers Recharge Project, Sonoma County, California.* LSA Associates, Inc., Point Richmond, California.

Origer, Thomas M.

1981 *An Archaeological Study for the Airport/Larkfield/Wikiup Wastewater System, Sonoma County, California*. Sonoma State University Academic Foundation, Inc., Rohnert Park, California.

Origer, Thomas M., and Sharon A. Waechter

1990 *An Archaeological Survey of the County Service Area #31 Wastewater Irrigation Pipeline Routes, South and Southwest of the Sonoma County Airport, Sonoma County, California*. Thomas M. Origer, Consulting Archaeologist, Cotati, California.

Pulcheon, Andrew Lee

2000 *Portrait of the Forgotten Fields: Sonoma County and Its Auxiliary Airfields of WWII*. Master's thesis, Sonoma State University, Rohnert Park, California.

Quinn, James P., and Thomas M. Origer

2001 *A Cultural Resources Survey for the Santa Rosa Memorial Park, Shiloh Addition, Windsor, Sonoma County, California*. Tom Origer & Associates, Rohnert Park, California.

Steen, Eileen, and Thomas M. Origer

2007 *A Cultural Resources Survey of a Portion of the Sonoma County Airport Approach Zone Protection Project, 1808 Sanders Road, Windsor, Sonoma County, California*. Tom Origer & Associates, Rohnert Park, California.

William Self & Associates, Inc.

2004 *Archaeological Assessment for the Charles M. Schulz-Sonoma County Airport Reclaimed Water Project*. William Self & Associates, Inc., Orinda, California.

Literature and Map Review

LSA reviewed the following publications, maps, and websites for archaeological, ethnographic, historical, and environmental information about the APE and its vicinity:

- *California Place Names* (Gudde 1998);
- *Historic Spots in California* (Hoover et al. 1990);
- *Handbook of the North American Indians: Pomo* (McLendon and Oswalt 1978);
- *Handbook of the Indians of California* (Kroeber 1925);
- Soil Survey of Sonoma County, California (U.C. Davis Soil Resource Laboratory);
- *Geologic Map of the Santa Rosa Quadrangle* (Wagner and Bortugno 1982);
- *Geologic Map of the San Francisco-San Jose Quadrangle* (Wagner, Bortugno, and McJunkin 1990);
- *Sebastopol, Calif., 7.5-minute topographic quadrangle* (U.S. Geological Survey [USGS] 1954);
- *Healdsburg, Calif., 7.5-minute topographic quadrangle* (USGS 1940, 1955, and 1993);

- *General Land Office* Plat of Township 8 North, Range 9 West, Sonoma County (General Land Office 1864);
- *Map of Sonoma County, California* (Bowers 1867);
- *Historical Atlas of Sonoma County* (Thompson 1877);
- *Illustrated Atlas of Sonoma County California* (Reynolds and Proctor 1898)
- *Official Map of Sonoma County* (McIntyre and Lewis 1908); and
- *Official Map of Sonoma County* (Peugh 1934).

The *Map of Sonoma County, California* (Bowers 1867) depicts a church and cemetery in the location of Shiloh Cemetery. Ten years later, the *Historical Atlas of Sonoma County* (Thompson 1877) depicts only a church in the same location; it is unclear why the cemetery was not also shown.

The Airport and a number of buildings are depicted on the *Healdsburg, California* topographic quadrangles (USGS 1940, 1955). These buildings are addressed in the Field Methods and Report Findings sections of this report.

Paleontological Resources

Background research was conducted to determine whether paleontological resources (fossils) and geologic formations known to contain fossils are within or adjacent to the APE. This research consisted of a fossil locality search and literature review of geological literature and maps.

Fossil Locality Search. A fossil locality search was conducted on November 3, 2009, by Dr. Pat Holroyd of the University of California Museum of Paleontology (UCMP), Berkeley. The purpose of this search was to (1) identify previous studies and known paleontological sites within and near the APE; and (2) identify the geologic formations and types of fossils that might be expected within and adjacent to the APE based on the existing geological and paleontological data.

There are no recorded fossil localities within or adjacent to the APE. Two fossil localities, approximately two miles southwest of the APE, are found in the same Pliocene (5.3 mya to 1.8 mya) Wilson Grove Formation of marine sandstone that underlies the APE (Wagner and Bortugno 1982; Berkeley Natural History Museum 2009). The fossils from this locality include the following specimens from the Pliocene Blancan (4.75 mya to 1.8 mya) period; *Teleostei* (a bony ray-finned fish), *Odontoceti* (toothed whale), *Delphininae* (oceanic dolphin), *Pontoporia sternbergi* (La Plata dolphin), *Myliobatis californica* (bat ray), *Callorhinus ursinus* (Northern Fur Seal), *Thalassoleon mexicanus* (Ocean Lion fur seal), and *Mysticeti* (baleen whale) (Berkeley Natural History Museum 2009).

CONSULTATION

Native American

On November 3, 2009, a letter describing the project with maps depicting the APE was faxed to the State of California Native American Heritage Commission (NAHC) requesting a review of the Sacred Lands File for any Native American cultural resources that might be affected by the proposed project

(Appendix B). The NAHC is the official state repository for Native American sacred site location records. Katy Sanchez, NAHC Program Analyst, responded in a faxed letter dated November 19, 2009, that the Sacred Lands File did not “indicate the presence of Native American cultural resources in the immediate APE.” Ms. Sanchez provided a list of Native American contacts (Appendix B).

On December 2, 2009, letters describing the project and maps depicting the APE were sent to the Native American representatives on the contact list provided by the NAHC, requesting any information or concerns they might have regarding the APE (Appendix B).

Nick Tipon, Chairman: Sacred Sites Protection Committee, Federated Indians of Graton Rancheria. On December 21, 2009, a letter was received from Mr. Tipon regarding the Federated Indians of Graton Rancheria’s (FIGR) concerns regarding the project (Appendix B). “FIGR currently has knowledge of cultural resources, sacred sites or gathering places on or in the immediate vicinity of this project location.” FIGR is concerned about the soil disturbance and the depth of construction due to “several drainages in the APE that may contain buried archaeological sites.” FIGR requested their letter be forwarded to the FAA and that they would like to begin Section 106 consultation.

On March 24, 2011, and pursuant to the FIGR request, an on-site consultation meeting was held between project representatives, the FAA, and FIGR representative Ken Tipon. Mr. Tipon was informed about the project’s objectives and proposed improvements. While reviewing the location of CA-SON-1322, Mr. Tipon requested that the project require tribal monitoring of construction activities within and adjacent to the recorded boundary of the archaeological deposit. Mr. Tipon also requested that mitigation measures be considered for the possible loss of sedge located near CA-SON-1322; sedge was mentioned in the original archaeological site record.

Frank Ross, Federated Indians of Graton Rancheria. On December 23, 2009, the letter to Mr. Ross was returned with the marking “Return to Sender, Attempted – Not Known, Unable to Forward.” On December 29, 2009, Mr. Ross was sent an email with the original letter and maps attached requesting he respond with any questions or concerns regarding the APE (Appendix B). On December 29, 2009, Mr. Ross replied to the email and commented that the area is sensitive and he feels that any areas identified as lithic scatters should be regarded as having a high level of sensitivity.

No other responses to the letters were received. Follow-up telephone calls were made. A summary of these calls is presented below.

Gene Buvelot, Federated Indians of Graton Rancheria. On January 7, 2010, a message was left for Mr. Buvelot requesting contact if he has any questions or concerns. No response has been received to date.

Ya-Ka-Ama. On January 7, 2010, a conversation occurred with Betty, the receptionist for Ya-Ka-Ama, who said the letter was given to the tribal board of directors and if no contact has occurred, they have no concerns.

Greg Sarris, Chairperson, Federated Indians of Graton Rancheria. On January 7, 2010, a message was left for Mr. Sarris on his secretary’s voicemail requesting contact if he has any questions or concerns. No response has been received to date.

Suki Waters. On January 7, 2010, several attempts were made to call Ms. Waters, but there was no answer and no voicemail to leave a message.

Brenda L. Tomaras, Tomaras & Ogas, LLP, Attorneys for the Lytton Rancheria of California. On May 10, 2011, the FAA received a letter from Ms. Tomaras regarding the Lytton Rancheria's concerns regarding the project (Appendix B). "The Lytton Tribe's primary concerns stem from the project's potential impacts on Native American cultural resources through future ground-disturbing activities." The letter goes on to voice concern about the "protection of unique and irreplaceable cultural resources, such as Pomo village sites and archaeological items which would be displaced by ground-disturbing work on the project" and that "project conditions or mitigation be put in place which would require archaeological monitoring for any ground-disturbing activities which might occur within native soils which are within or along the creek bed and within 50 meters of the known cultural sites."

Historical Organizations

On November 3, 2009, a letter was sent describing the project with maps depicting the APE to Jeremy Nichols, President of the Sonoma County Historical Society, requesting any information or concerns about historical sites in the APE (Appendix C). No response to the letter was received, and, several weeks after sending the letter, a follow-up telephone call was made. A summary of this call is presented below.

Jeremy Nichols, President, Sonoma County Historical Society. On January 7, 2010, Mr. Nichols was sent an email with the original letter and maps attached requesting he respond with any questions or concerns regarding the APE (Appendix C). Mr. Nichols notified LSA that an incorrect version of the letter and map were sent and, upon this notification, LSA sent a corrected version. On January 18, 2010, Mr. Nichols sent an email expressing concerns over the adjacent cemeteries, but otherwise stated that the Sonoma County Historical Society has no objections to the project.

FIELD SURVEY

On November 12, 24, and December 22, 2009, and January 27-29, 2010, LSA archaeologists Alexandra M. Greenwald, Kathleen Kubal, and Karin Goetter Beck conducted a pedestrian field survey of portions of the APE. The archaeologists surveyed only areas that had not been previously surveyed and those portions of the APE that were accessible. Airport operations staff provided an escort within the Transportation Security Administration-secured boundaries of the Airport. Visibility of the ground's surface was poor due to grasses and standing water due to recent rains, as well as thick riparian vegetation near the creeks in the northern portion of the APE. Areas that were clearly modified for airport operations and safety were either briefly field reviewed or inspected during a windshield survey while the field crew were escorted through the Airport. The remainder of the APE was inspected using 15-meter wide or less zig-zag transects, and the ground surface was occasionally scraped free of obstructions to get a better view of soils and possible archaeological deposits. Where possible, earthen cuts, creek banks, animal burrows, and backdirt were examined for archaeological deposits. Particular scrutiny was given to the location of the previously recorded archaeological site CA-SON-1322, north of Runway 14/32 and south of Redwood Creek. The survey was documented in field notes, maps, and photographs.

On April 29, 2011, Karin Goetter Beck surveyed an addition to the southeast portion of the APE, south of Laughlin Road and within the Runway Protection Zone (RPZ) of Runway 14/32. The pedestrian field survey of this portion of the APE directed particular scrutiny to areas near Mark West Creek.

Results -- Archaeology

CA-SON-1322. One basalt flake was identified near the fence in the approximate location of CA-SON-1322, but no other indication of the presence of CA-SON-1322 was identified during the field survey. The California Department of Parks and Recreation 523 Series forms (DPR 523 forms) for CA-SON-1322 are in Appendix D. This resource may be subject to physical disturbance as part of the project.

LSA-RSQ0901-01. A previously unidentified prehistoric archaeological site (field designation LSA-RSQ0901-01) was discovered approximately 400 feet east of the purported location of CA-SON-1322, on the opposite bank of Redwood Creek. This site consists of a sparse scatter of obsidian flakes in various stages of reduction in an area of approximately 40 meters (east-west) by 15 meters (north-south). The DPR 523 forms for LSA-RSQ0901-01 are in Appendix D. This resource may be subject to physical disturbance as part of the project.

P-49-2795. This resource is a historic-period concrete building pad located in the western portion of the APE. There are no proposed construction activities that would physically disturb the location of this resource.

P-49-3564. This historic-period refuse deposit is in the southwestern portion of the APE. There are no proposed construction activities that would physically disturb the location of this resource.

Results -- Built Environment

The following nine built environment cultural resources in the APE are depicted on historical topographic quadrangles and were identified during the field survey:

| Resource | Age | Potential Project Activity | Description |
|--------------------------------------|----------------|----------------------------|---|
| Sonoma County Airport | ca. 1941 | ADI – modify | Airfield, hangars, buildings with extensive improvements from 1940 to the present |
| Shiloh Cemetery | ca. late 1800s | APE - Indirect Impact | Historical cemetery |
| 1754 Sanders Road APN 164-170-008 | Built 1945 | Land Acquisition | Highly modified with a mix of old and new windows and sliders |
| 1640 Sanders Road APN164-170-013 | Built 1947 | Land Acquisition | Highly modified with new vinyl windows on log cabin, recently replaced roof |
| 1696 Sanders Road APN 164-170-009 | Built 1946 | Land Acquisition | Highly modified with dormers on the rear, new windows, enclosed and attached shed patio |
| 1670 Sanders Road APN 164-170-012 | Built 1946 | Land Acquisition | Highly modified with a recently replaced roof and new windows |
| 7007 Windsor Road | Built 1961 | Land Acquisition | Typical architecture of |

| | | | |
|--|--|------------------|--|
| APN 066-250-022 | | | this area from 1960s era |
| 3117 N. Laughlin Road APN 059-200-018 | Appears on 1955 <i>Healdsburg, Calif.</i> quadrangle | Land Acquisition | Appears 50 years or older, from what could be seen from public ROW |
| 3725 Laughlin Road APN 059-200-002 | Appears on 1955 <i>Healdsburg, Calif.</i> quadrangle | Land Acquisition | Appears 50 years or older, from what could be seen from public ROW |

ARCHAEOLOGICAL SENSITIVITY

The background research included a review of publications and maps for archaeological and environmental information about the soils, geology, and sediments in the APE. This information was used to assess the sensitivity of the APE for buried archaeological resources. Soil development, the geomorphology of the APE, the presence of archaeological sites, and proximity to watercourses were factors in the sensitivity assessment. The field survey identified no surface or subsurface deposits nor any topographic or vegetation anomalies that may indicate the presence of buried archaeological deposits. No subsurface excavation was conducted for the presence of paleosols or buried archaeological materials. Based on the geomorphology and soil information, the southern portion of the APE is sensitive for buried prehistoric archaeological deposits.

Geomorphology

The age of a particular landform, such as an alluvial fan or levee, can be used to determine the sensitivity for buried archaeological deposits. Certain landforms are too old (>15,000 years B.P.) or too young (<150 years B.P.), to contain buried prehistoric archaeological deposits. Within the time frame of prehistoric human occupation, younger depositional landforms have a higher possibility of paleosols and associated archaeological deposits than do older landforms.

Soil Development

The degree of soil development can be used to assess the relative age of a landform. Soil is decomposed rock that has been broken down over time as a result of topography, climate, and biota. The interaction of these factors changes the texture and chemistry of the rock and results in the structural development of soil horizons. The effect of these factors extends to various depths depending upon on the length of time development has taken place. Poorly-developed soil profiles are generally younger with few horizons; well-developed soils are generally older, as they develop over a longer period, and have more horizons. The degree of soil development can be interpreted from a soil's profile: a well-developed soil will have a profile containing several different horizons with different textures and structures.

Well-developed soils are associated with older landforms that may have been stable for several thousand years. The presence of such soils indicates that archaeological deposits should be at or near the surface and will generally have a low sensitivity for buried archaeological deposits. Conversely, poorly-developed soils are associated with younger landforms formed in the recent geologic past and generally have a higher sensitivity for buried archaeological deposits beneath them.

Sensitivity Study Results

The age of the alluvium underlying the APE dates to the Holocene (10,000 years B.P. to present) and Late Pleistocene (126,000 to 10,000 years B.P) and is old enough to contain buried prehistoric archaeological deposits.

Well-developed soils, including Huichica loam and Zamora silty clay loam, are located in the central portion of the APE. Poorly-developed soils, including Yolo loam, Pajaro gravelly loam, and the poorly-developed clayey, sandy, and gravelly alluvium, are located in the southern and northern portions of the APE. The poorly-developed soils have been exposed for only a geologically short period of time, and may have buried prehistoric archaeological deposits.

The majority of ground disturbance with any considerable depth in the APE is the re-alignment of Redwood Creek in the northern portion of the APE and its borrow mound in the southwestern APE. The soil in the southwestern APE is the well-developed Huichica loam. This area has a low likelihood of encountering buried archaeological deposits. The soil in the area of Redwood Creek where the re-alignment and culvert are proposed is within the well-developed Zamora silty clay loam. However, due to the creek and its proximity to previously recorded archaeological resources, this area along Redwood Creek is considered to have moderate-to-high sensitivity for buried archaeological resources.

REPORT OF FINDINGS

CULTURAL RESOURCES

The background research, consultation, and field survey identified the cultural resources described below in or adjacent to the APE. In addition, the soil in the vicinity of Redwood Creek where the creek re-alignment and culvert are proposed is within the well-developed Zamora silty clay loam. However, due to the proximity of the creek and identified archaeological deposits, this area along Redwood Creek has moderate-to-high sensitivity for buried archaeological deposits.

It is important to note that the following assessments are *preliminary*; are based solely on background research and field survey; and do not constitute formal eligibility evaluations. No archaeological excavation was undertaken as part of these preliminary evaluations. Additional study is necessary to make formal eligibility determinations for these resources.

CA-SON-1322

This resource is a prehistoric archaeological site located within the Area of Direct Impact (ADI) in the northern portion of the APE near Redwood Creek. Although this site was not relocated during field survey, a basalt flake was identified in the general vicinity of the site's mapped location. Proposed construction in this area may physically disturb the recorded location of this archaeological site.

It is LSA's opinion that CA-SON-1322 *may* meet the eligibility requirements for listing in the California Register of Historical Resources (California Register) due to the potential for subsurface archaeological deposits that have traditional or cultural significance to FIGR and that may yield information important in prehistory.

LSA-RSQ0901-01

This resource is a prehistoric archaeological site located within the ADI in the northern portion of the APE near Redwood Creek. Proposed construction in this area may physically disturb the location of this archaeological site.

It is LSA's opinion that LSA-RSQ0901-01 *may* meet the eligibility requirements for listing in the California Register due to the potential for subsurface archaeological deposits that have traditional or cultural significance to FIGR and that may yield information important in prehistory.

P-49-2795

This resource is a historic-period concrete building pad located within the western portion of the APE. There are no proposed construction activities that would physically disturb the location of this resource.

It is LSA's opinion that P-49-2795 *may not* meet the eligibility requirements for listing in the California Register due to its condition and diminished historical integrity.

P-49-3564

This historic-period refuse deposit is adjacent to the southwestern portion of the APE. There are no proposed construction activities that would physically disturb the location of this resource.

It is LSA's opinion that P-49-3564 *may not* meet the eligibility requirements for listing in the California Register due to its potential lack of historical integrity.

Sonoma County Airport

The Airport has been in operation since the early 1940s, when it was an Army Air Corps training facility. Only four buildings remain from the WWII period: the Butler Hangar (with new adjacent development); the Redwood Hangar (modified over the years and new adjacent development); the Airport Maintenance Shop (heavily modified over the years); and the Pacific Coast Air Museum entrance and gift shop. The Airport's control tower and terminal were built in the early 1960s and are proposed to be replaced.

It is LSA's opinion that there is a possibility that the Airport and/or individual structures *may* meet the eligibility requirements for listing in the National Register and the California Register due to age and association with an important pattern of events (WWII mobilization and pilot training). However, there have been a number of substantial changes to the physical form of the Airport and facilities. These modifications have altered the physical appearance of the Airport such that it does not possess the majority of historic fabric and visual characteristics present during the WWII period.

Shiloh Cemetery

This resource is depicted on several historical maps from the late 1800s. The cemetery was not surveyed.

Normally, cemeteries are not a property type that is eligible for listing in the National Register; however, a cemetery *can* be eligible if it is the resting place of people of transcendent importance, is particularly old, has distinctive design features, or is associated with historic events. It is LSA's opinion that the Shiloh Cemetery *may* meet the eligibility requirements for listing in the National Register and the California Register due to its age, association with historic events, or a potential to yield information important in history.

1754 Sanders Road

County records indicate that this single-story ranch style residence was built in 1945 (Sonoma County Assessor Records). The architectural style and building materials (except for the windows) are consistent with that date. The windows appear to have been replaced over the years; some are from an older generation made with aluminum, while others are of a more modern vinyl fabrication. These modifications have altered the appearance and fabric of the house. This parcel is a future land acquisition.

It is LSA's opinion that the property at 1754 Sanders Road *may not* meet the eligibility requirements for listing in the California Register due to a potential lack of historical integrity.

1696 Sanders Road

County records indicate that this ranch style residence was built in 1946 (Sonoma County Assessor Records). The house, originally a single-story building, has been modified with a second story and includes several shed-style dormers on the rear façade. In addition, the rear façade has been modified with an extension of the roof to cover and enclose the back door. The original windows appear to have been replaced with modern vinyl windows. These modifications have altered the appearance and fabric of the house. This parcel is a future land acquisition.

It is LSA's opinion that the property at 1696 Sanders Road *may not* meet the eligibility requirements for listing in the California Register due to a potential lack of historical integrity.

1670 Sanders Road

County records indicate that this single-story ranch style residence was built in 1946 (Sonoma County Assessor Records). The house has been modified with a new roof and modern vinyl windows. These modifications have altered the appearance and fabric of the house. This parcel is a future land acquisition.

It is LSA's opinion that the property at 1670 Sanders Road *may not* meet the eligibility requirements for listing in the California Register due to a potential lack of historical integrity.

1640 Sanders Road

County records indicate that this single-story log cabin-style residence was built in 1947 (Sonoma County Assessor Records). The house has been modified with a new roof, modern vinyl windows, and gutters. These modifications have altered the appearance and fabric of the house. This parcel is a future land acquisition.

It is LSA's opinion that the property at 1640 Sanders Road *may not* meet the eligibility requirements for listing in the California Register due to a potential lack of historical integrity.

7007 Windsor Road

County records indicate that this single-story ranch style residence was built in 1961 (Sonoma County Assessor Records). The house appears to be an undistinguished example of typical architecture from the 1960s. This parcel is a future land acquisition.

It is LSA's opinion that the property at 7007 Windsor Road *may not* meet the eligibility requirements for listing in the California Register due to its ubiquitous architecture of its era, with no distinguishing design or construction characteristics and a potential lack of historical integrity.

3117 N. Laughlin Road

This resource consists of a residence and several farm buildings and is depicted on several historical maps from the early- to mid-1900s. This parcel is a future land acquisition and was not surveyed.

It is LSA's opinion that the property at 3117 N. Laughlin Road *may* meet the eligibility requirements for listing in California Register due to its age, significant historical associations, or potential to yield important information in history.

3725 Laughlin Road

This resource consists of a residence that is depicted on a historical map from the mid-1950s. This parcel is a future land acquisition and was not surveyed.

It is LSA's opinion that the property at 3725 Laughlin Road *may* meet the eligibility requirements for listing in the California Register due to its age and potential to yield important information in history.

PALEONTOLOGICAL RESOURCES

No paleontological resources were identified in the APE. However, one of the geological formations underlying the APE is sensitive for paleontological resources. Ground-disturbance in Pleistocene alluvium below the soils and Holocene alluvium in the APE may encounter paleontological resources. Project activities are unlikely, however, to extend below the 20-foot deep deposits of soils and Holocene alluvium underlying the APE.

RECOMMENDATIONS

CULTURAL RESOURCES

This study identified two prehistoric archaeological cultural resources, two historic-period archaeological cultural resources, and nine built environment cultural resources in or adjacent to the APE.

Archaeological Eligibility Evaluations

Of the four archaeological resources within the APE, two resources (CA-SON-1322 and LSA-RSQ0901-01) *may* meet the eligibility requirements for listing in the California Register, although no formal eligibility evaluations have been conducted.

Those archaeological deposits that will be physically disturbed by the project should be evaluated to determine if they are eligible for inclusion in the National Register or California Register. This would determine whether they qualify as historic properties (under Section 106) or historical or unique archaeological resources (under CEQA), and would facilitate an assessment of whether an adverse effect or significant impact would occur as the result of their disturbance. Any such evaluation should include the participation of potentially interested parties. FIGR, in particular, should be consulted regarding the eligibility of the prehistoric archaeological deposits, potential effects to such deposits, and ways to avoid, offset, or minimize adverse effects to such deposits.

Built Environment Eligibility Evaluations

Of the nine built environment resources within the APE, four resources (Sonoma County Airport, Shiloh Cemetery, 3117 N. Laughlin Road, and 3725 Laughlin Road) *may* meet the eligibility requirements for listing in the California Register, although no formal eligibility evaluations have been conducted. Two of those resources (3117 N. Laughlin Road, and 3725 Laughlin Road) were not accessible during LSA's fieldwork and have not been surveyed.

Those built environment resources that will be physically disturbed by the project should be evaluated to determine if they are eligible for inclusion in the California Register. This would determine whether they qualify as historic properties (under Section 106) or historical resources (under CEQA), and would facilitate an assessment of whether an adverse effect or significant impact would occur as the result of their disturbance.

Accidental Discovery Procedures

In the event that deposits of prehistoric or historical archaeological materials are discovered during project activities in the APE, all work within 25 feet of the discovery should be redirected. It is recommended that adverse effects to archaeological deposits be avoided by project activities. If avoidance is not feasible, the archaeological deposits should be evaluated for their eligibility for listing in the California Register, and whether they qualify as "unique archaeological resources" under CEQA. The County should (1) contact a qualified archaeologist to assess the situation; (2)

consult with descendant communities and interested parties (as appropriate); (3) and develop an approach for the treatment of the discovery. The assessment of the find's significance, the potential that it will be affected, and potential treatment approaches should be accomplished through discussions and exchanges of information with the consulting parties, particularly FIGR and the County. Project personnel should not collect or move any archaeological materials.

Upon completion of the assessment, the archaeologist should prepare a report documenting the methods and results, and provide recommendations for the treatment of the archaeological deposits discovered. The report should be submitted to the County and the NWIC.

Prehistoric materials can include flaked-stone tools (e.g. projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite tool making debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.

Human Remains Procedures

If human remains are discovered during project activities, work within 25 feet of the discovery should be redirected and the Sonoma County Coroner notified immediately. At the same time, an archaeologist, if not present, should be contacted to assess the situation and consult with the County, FIGR, and the Coroner. Project personnel should not collect or move any human remains and associated materials.

If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Upon completion of the assessment, the archaeologist should prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report should be submitted to the County and the NWIC.

PALEONTOLOGICAL RESOURCES

No paleontological resources were identified in the APE. However, one of the geological deposits underlying the APE is sensitive for paleontological resources. Ground-disturbance in Late Pleistocene alluvium below the soils and Holocene alluvium in the APE may encounter paleontological resources. Project activities are unlikely, however, to extend below the Holocene alluvium underlying the APE.

Accidental Discovery

If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 feet should be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the

treatment of the discovery. Project personnel should not collect or move any paleontological materials. It is recommended that adverse effects to such deposits be avoided by project activities.

Paleontological resources are considered significant if they may provide new information regarding past life forms, paleoecology, stratigraphy, or geological formation processes. If found to be significant, and project activities cannot avoid the paleontological resources, adverse effects to paleontological resources should be mitigated. Mitigation may include monitoring, recording the fossil locality, data recovery and analysis, a final report, and accessioning the fossil material and technical report to a paleontological repository. Public educational outreach may also be appropriate.

Upon completion of the assessment, a report documenting methods, findings, and recommendations should be prepared and submitted to the County for review, and, if paleontological materials are recovered, a paleontological repository, such as the University of California Museum of Paleontology.

Paleontological resources include fossilized remains and trace evidence of plants and animals and associated deposits. Marine sediments may contain invertebrate fossils such as snail, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land animal fossils may include bones of ground sloth, dire wolf, saber-toothed cat, camel, bison, mammoth, horse, rodent, bird, reptile, and amphibian fossils. Paleontological resources also include such trace fossils as plant imprints, petrified wood, and animal tracks.

REFERENCES CONSULTED

Barrett, Samuel A.

- 1908 The Ethno-geography of the Pomo and Neighboring Indians. *University of California Publications in American Archaeology and Ethnology* 6(1):1-332. Berkeley.

Basgall, Mark E.

- 1993 Chronological Sequences in the Southern North Coast Ranges, California. In *There Grows a Green Tree: Papers in Honor of David A. Fredrickson*, edited by Greg White, Pat Mikkelsen, William R. Hildebrandt, and Mark E. Basgall, pp. 167-195. Center for Archaeological Research at Davis Publication No. 11. University of California, Davis.

Bean, Lowell John, and Dorothea Theodoratus

- 1978 Western Pomo and Northeastern Pomo. In *California*, edited by Robert F. Heizer, pp. 289-305. Handbook of the North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Beard, Vicki

- 1996 *A Cultural Resources Study for the Airport Hangar Project, Sonoma County Airport, Sonoma County, California*. Tom Origer & Associates, Rohnert Park, California.
- 1999 Letter Report: *Preliminary Building Evaluations for the Airport Land Acquisition Program*. Tom Origer & Associates, Rohnert Park, California.
- 2002 Letter Report: *Evaluation of buildings at 6815 Windsor Road, Windsor (APN 066-250-009)*. Tom Origer & Associates, Rohnert Park, California
- 2003 Letter Report: *Assessment of buildings at 1904 Sanders Road, Windsor (APN 164-170-002)*. Tom Origer & Associates, Rohnert Park, California.
- 2005 *A Cultural Resources Survey for Planned Airport Security Fencing and Improvements Project, Sonoma County, California*. Tom Origer & Associates, Rohnert Park, California.
- 2008 *A Cultural Resources Survey of the Parcel at 1770 Sanders Road, Windsor, Sonoma County, California*. Tom Origer & Associates, Rohnert Park, California.

Beck, Warren A., and Ynez D. Hasse

- 1974 *Historical Atlas of California*. University of Oklahoma Press, Norman.

Berkeley Natural History Museum

2009 Berkeley Natural History Museum, Museum of Paleontology searchable database. Accessed at <<http://bnhm.berkeley.edu/query/index.php>> on November 30, 2009.

Bowers, A.

1867 Map of Sonoma County, California. 2nd edition. A. Bowers.

Bramlette, Allan G., and Brian F. Terhorst

1987 *An Archaeological Study for the Westwind Business Park Project, City of Santa Rosa, Sonoma County, California*. Sonoma State University Academic Foundation, Inc., Rohnert Park, California.

California Department of Parks and Recreation

1976 *California Inventory of Historic Resources*. California Department of Parks and Recreation.

California Office of Historic Preservation

1988 *Five Views: An Ethnic Historic Site Survey for California*. California Department of Parks and Recreation, Sacramento.

1992 *California Points of Historical Interest*. California Department of Parks and Recreation, Sacramento, California.

1996 *California Historical Landmarks*. California Department of Parks and Recreation, Sacramento.

2008 *Directory of Properties in the Historic Property Data File, May 27, 2009*. California Department of Parks and Recreation, Sacramento.

Derr, Eleanor H.

1997 Letter Report: *Sonoma CDF Air Attack Base*. Cultural Resources Unlimited, Rancho Cordova, California.

Elsasser, Albert B.

1978 Development of Regional Prehistoric Cultures. In *California*, edited by Robert F. Heizer, pp. 37-57. Handbook of North American Indians, Volume 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Flynn, Katherine

1991 Letter Report: *Archaeological Evaluation of Sonoma Chaparral LP Property, 3690 Laughlin Road, Windsor*. Archaeological Resource Service, Petaluma, California.

General Land Office

1864 *Plat of Township 8 North, Range 9 West, Mount Diablo Base Line and Meridian*. U.S. Department of the Interior, Washington, D.C.

Gerike, Christian

1980 *An Archaeologist Study for the Laughlin Road Bridge Widening Project (89001, P.M. 31.61), Sonoma County, California*. Cultural Resources Facility, Sonoma State University.

Gerike, Christian, and David Hunt

1979 Archaeological Site Record for CA-SON-1249H. Anthropology Laboratory, Sonoma State College, Rohnert Park, California.

Gerike, Christian, and Sara E.P. Gillies

2000 *Plan for Evaluation of Cultural Resources, Santa Rosa Geysers Recharge Project, Sonoma County, California*. LSA Associates, Inc., Point Richmond, California.

Gillies, Sara E.P., and Christina MacDonald

2000 California Department of Parks and Recreation Form 523 Records for P-49-2795. LSA Associates, Inc., Point Richmond, California.

Golla, Victor

2007 Linguistic Prehistory. In *California Prehistory, Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 71-82. AltaMira Press, New York.

Gudde, Erwin G.

1998 *California Place Names: The Origin and Etymology of Current Geographical Names*. Fourth edition, revised and enlarged by William Bright. University of California Press, Berkeley.

Harden, Deborah R.

2004 *California Geology*. Second edition. Pearson Prentice Hall. New Jersey.

Hoover, Mildred Brooke, Hero Eugene Rensch, Ethel Rensch, and William N. Abeloe

1990 *Historic Spots in California*. Fourth edition, revised by Douglas E. Kyle. Stanford University Press, Stanford.

- Jones, Terry L., and John F. Hayes
1993 Problems and Prospects in Sonoma County Archaeology. In *There Grows a Green Tree: Papers in Honor of David A. Fredrickson*, edited by Greg White, Pat Mikkelsen, William R. Hildebrandt, and Mark E. Basgall, pp. 197-216. Center for Archaeological Research at Davis Publication No. 11. University of California, Davis.
- Jones, Terry L., and Kathryn A. Klar (editors)
2007 *California Prehistory: Colonization, Culture, and Complexity*. Altamira Press, New York.
- King, Ana
1978 *An Archaeological Investigation of a Portion of the Barber Property, North of Airport Boulevard, Sonoma County, California*. Sonoma State University, Anthropology Laboratory, Rohnert Park, California.
- Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bulletin of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C. Reprinted 1976 by Dover, New York.
1932 *The Patwin and Their Neighbors*. University of California Publications in American Archaeology and Ethnology 29(4):253-423. Berkeley.
- Longfellow, Joy
2000 California Department of Parks and Recreation Form 523 Records for P-49-3564. LSA Associates, Inc., Point Richmond, California.
- Longfellow, Joy, and Christian Gerike
2004 *Cultural and Paleontological Resources Monitoring 2000-2003, the Geysers Recharge Project, Sonoma County, California*. LSA Associates, Inc., Point Richmond, California.
- Marschner, Janice
2000 *California 1850: A Snapshot in Time*. Coleman Ranch Press, Sacramento, California.
- McIntyre and Lewis
1908 Official Map of the County of Sonoma, California.
- McLendon, Salley, and Robert Oswalt
1978 Pomo: An Introduction. In *California*, edited by Robert F. Heizer, pp.274-288. Handbook of North American Indians, Volume 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- Meyer, Jack, and Jeffrey S. Rosenthal
1997 *Archaeological and Geoarchaeological Investigations at Eight Prehistoric Sights in the Los Vaqueros Reservoir Area, Contra Costa County, California*. Anthropological Studies Center, Sonoma State University, Rohnert Park, California.

Milliken, Randall

1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press, Menlo Park, California.

Moratto, Michael J.

1984 *California Archaeology*. Academic Press, Inc. Orlando, Florida.

Morgan, Chris, and Graham Dalldorf

1999 California Department of Parks and Recreation Form 523 Records for P-49-002704. Pacific Legacy, Inc., Santa Cruz, California.

National Park Service

1997 *How to Apply the National Register Criteria for Evaluation*. U.S. Department of the Interior, Washington, D.C.

Origer, Thomas M.

1981 *An Archaeological Study for the Airport/Larkfield/Wikiup Wastewater System, Sonoma County, California*. Sonoma State University Academic Foundation, Inc., Rohnert Park, California.

1986 *An Archaeological Survey for the Airport Boulevard Assessment District, Sonoma County, California*. Thomas M. Origer, Consulting Archaeologist, Cotati, California.

1992 *An Archaeological Survey for the Windsor Water District Property Off Saunders Road, Windsor, Sonoma County, California*. Thomas M. Origer, Consulting Archaeologist, Cotati, California.

1998 *A Cultural Resources Survey for the Westwind Business Park – Phase 5, Sonoma County, California*. Thomas Origer & Associates, Rohnert Park, California.

Origer, Thomas M., and K. Stanton-Roscoe

1981 Archaeological Site Record for C #915: Sarasy Property. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, California.

Origer, Thomas M., and Paul Amaroli

1981 Archaeological Site Record for CA-SON-1322. Anthropology Laboratory, Sonoma State College, Rohnert Park, California.

Origer, Thomas M., and Sharon A. Waechter

1990 *An Archaeological Survey of the County Service Area #31 Wastewater Irrigation Pipeline Routes, South and Southwest of the Sonoma County Airport, Sonoma County, California*. Thomas M. Origer, Consulting Archaeologist, Cotati, California.

Peugh, E.

1934 Official Map of Sonoma County, California.

Psota, Sunshine

- 1993 Addendum: Archaeological Site Record for CA-SON-1324. Anthropological Studies Center, Sonoma State University, Rohnert Park, California.

Pulcheon, Andrew Lee

- 2000 *Portrait of the Forgotten Fields: Sonoma County and its Auxiliary Airfields of WWII*. Master's Thesis, Cultural Resources Management, Sonoma State University, Rohnert Park, California.
- 2002 California Department of Parks and Recreation Form 523 Records for P-49-003092. LSA Associates, Inc., Point Richmond, California.

Quinn, James P., and Thomas M. Origer

- 2001 *A Cultural Resources Survey for the Santa Rosa Memorial Park, Shiloh Addition, Windsor, Sonoma County, California*. Tom Origer & Associates, Rohnert Park, California.

Reynolds & Proctor

- 1898 *Illustrated Atlas of Sonoma County California*. Reynolds & Proctor, Santa Rosa, California. Reprinted 1998 by Windmill Publications, Inc., Mt. Vernon, Indiana.

Shipley, William F.

- 1978 Native Languages of California. In *California*, edited by Robert F. Heizer, pp. 80-98. Handbook of the North American Indians, Volume 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Sonoma County

- 2008 *Draft Initial Study, Airport Mast Plan Project, Charles M. Schulz - Sonoma County Airport*. Sonoma County Permit and Resource Management Department, Santa Rosa, California.

Sonoma County Airport

- 2011 Our History. Accessed at <http://www.sonomacountyairport.org/our-history> on March 16 2011.

Steen, Eileen, and Thomas M. Origer

- 2007 *A Cultural Resources Survey of a Portion of the Sonoma County Airport Approach Zone Protection Project, 1808 Sanders Road, Windsor, Sonoma County, California*. Tom Origer & Associates, Rohnert Park, California.

Stirton, R. A.

- 1951 Prehistoric Land Animals of the San Francisco Bay Region. In *Geology Guidebook of the San Francisco Bay Counties: History, Landscape, Geology, Fossils, Minerals, Industry, and Routes to Travel*, prepared by Olaf P. Jenkins, pp. 177-186. Bulletin 154. State of California Division of Mines, San Francisco.

Thompson, Thos. H.

- 1877 *Historical Atlas of Sonoma County*. Thos. H. Thompson and Company, Oakland, California.

U.C. Davis Soil Resource Laboratory

2009 Online Soil Survey, California Soil Resource Laboratory. Accessed at
<<http://casoilresource.lawr.ucdavis.edu/drupal/node/27>> on November 30, 2009.

U.S. Army

1915 *Healdsburg Quadrangle*. 15-minute topographic quadrangle. Reprinted 1920. United States Army Corps of Engineers, Washington, D.C.

U.S. Geological Survey

1954 *Sebastopol, Calif.* 7.5-minute topographic quadrangle. Photorevised 1980. United States Geological Survey, Washington, D.C.

1940 *Healdsburg, Calif.* 15-minute topographic quadrangle. United States Geological Survey, Washington, D.C.

1955 *Healdsburg, Calif.* 15-minute topographic quadrangle. United States Geological Survey, Washington, D.C.

1993 *Healdsburg, Calif.* 7.5-minute topographic quadrangle. United States Geological Survey, Washington, D.C.

Wagner, David L., and Edward J. Bortugno

1982 Geologic Map of the Santa Rosa Quadrangle, California, 1:250,000. Regional Geologic Map Series No 2A. Department of Conservation Division of Mines and Geology, California.

Wikipedia

2011 Charles M. Schulz – Sonoma County Airport. Accessed at
http://en.wikipedia.org/wiki/Sonoma_County_Airport on March 23, 2011.

William Self & Associates, Inc.

2004 *Archaeological Assessment for the Charles M. Schulz-Sonoma County Airport Reclaimed
Water Project*. William Self & Associates, Inc., Orinda, California.