CHAPTER 2
Project Description

2.1 Introduction

The Master Plan update for Nut Tree Airport establishes guidelines for improving the Airport's facilities over the next 20 years. The Master Plan represents a comprehensive effort to identify the type and extent of facilities that are required to meet forecasted aviation demand at the Airport. This chapter describes the setting of the Airport, the current Airport facilities and operations, and the components of the preferred alternative identified in the Master Plan update.

2.2 Project Location and Setting

2.2.1 Project Location

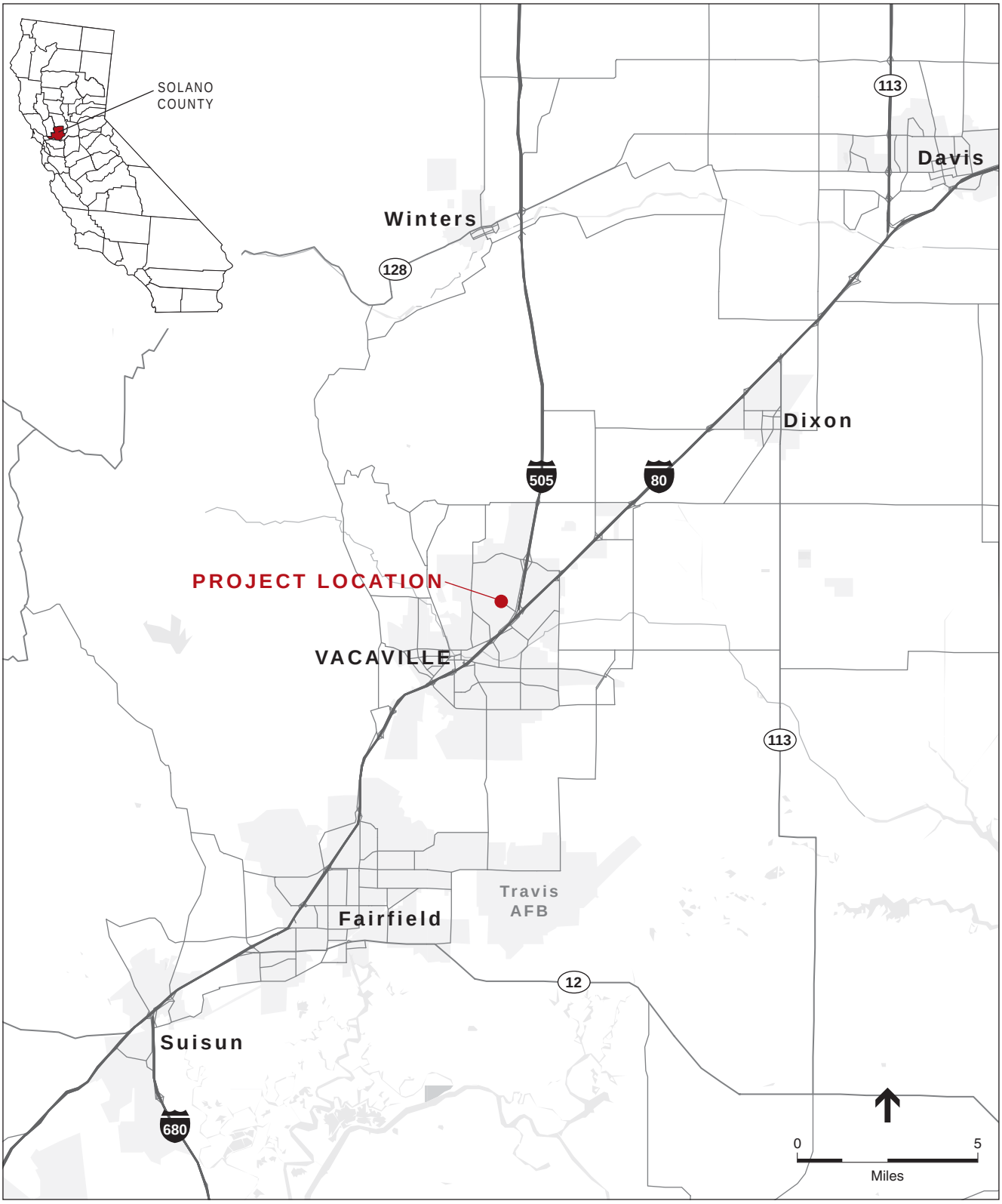
The site of the Proposed Project is the Nut Tree Airport, which is located in the northeastern portion of the City of Vacaville (see **Figure 2-1**). The Airport consists of 286 acres of property (fee simple), and is owned and operated by Solano County.

The project site is accessed via County Airport Road, and is generally bound by East Monte Vista Avenue to the east, Piper Drive to the north, and open space and Putah South Canal to the west and south. The Airport also owns property to the southwest of Putah Canal, which is undeveloped. Regional access to the Airport is provided via Interstates (I) 80 and I-505, which are located less than a mile from County Airport Road.

As shown in **Figure 2-2**, the site consists of a single northeast-to-southwest oriented runway (Runway 2/20), a large aircraft parking apron to the east of the Runway, and a number of hangars, an airport administration building, and vehicular parking, also located east of the Runway. (A more detailed discussion of the project site's existing facilities is provided below.) The topography of the site is primarily flat, with security fencing encompassing the existing boundary of the Airport.

Current Airside Facilities

Nut Tree Airport is operated with one primary runway, Runway 2/20, oriented in a northeast-southwest direction. One parallel taxiway provides access to the runway from the general aviation development areas.



SOURCE: DeLorme Street Atlas USA, 2000; and ESA, 2012

Nut Tree Airport Master Plan EIR . 120526

Figure 2-1
Regional Location

SOURCE: USDA, 2010; ESRI, 2012; and ESA, 2012

Nut Tree Airport Master Plan EIR . 120526

Figure 2-2
Aerial Photograph of Nut Tree Airport

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The Airport Reference Point (ARP) for Nut Tree Airport is located at Latitude 38° 22' 40.0000" N and Longitude 121° 57' 41.7000" W. The Airport has an elevation of 117 feet above mean sea level (AMSL) and encompasses approximately 262 acres.

Runway. The primary runway at the Airport has a designation of 2/20, which is 4,700 feet long and 75 feet wide. The runway is constructed of asphalt and has a gross weight bearing capacity of 30,000 pounds single-wheel main landing gear configuration, and the runway pavement is currently in good condition. The runway is equipped with Medium Intensity Runway Lights (MIRLs), a two-light Precision Approach Path Indicator system (PAPI) and Runway End Identifier Lights (REILs) to each runway end, and is marked with standard/basic non-precision markings on each end.

In addition, Runway 02 has a published left-hand traffic pattern, with Runway 20 having a nonstandard right-hand pattern.

Taxiway. In addition to the runway, the airside facilities at Nut Tree Airport consist of a taxiway system that provides access between the runway surface and the landside aviation use areas. A full-parallel taxiway serves Runway 2/20 (Taxiway A), located on the east side of Runway 2/20 and is separated by 240 feet (runway centerline to taxiway centerline). Taxiway A is constructed of asphalt, and has five connector taxiways that connect to the runway. Taxiway A is 40 feet wide and is also constructed of asphalt. Additionally, an aircraft run-up area/holding bay is located on both the northeast and southwest end of Taxiway A. For night use, the taxiway system is equipped with a Medium Intensity Taxiway Lighting system (MITL).

Five connecting taxiways link access between Runway 2/20, Taxiway A, and the main aircraft parking apron. Two 40-foot wide taxiways connect the Runway 02 and 20 thresholds to Taxiway A, and an additional 40-foot wide taxiway located approximately 900 feet southeast of the Runway 20 connecting taxiway also provides access to Taxiway A.

Two connecting taxiways provide access to the main aircraft parking apron. The taxiway located on the southern end of the apron is 42 feet wide, and the connecting taxiway located on the northern end of the apron is 46 feet wide.

Current Landside Facilities

The primary landside development area at the Airport is located on the east side of the Airport property. These facilities include an airport administration building, aircraft parking aprons, Fixed Base Operator (FBO) facilities, general aviation aircraft storage hangars, fuel storage facilities, an aircraft maintenance facility, a helicopter maintenance facility, aircraft wash rack, access roadways, and auto parking. **In total, the Airport has approximately 8,400 square feet of office space, and approximately 288,150 square feet of aircraft hangar space.**

Aprons. The main aircraft parking apron at Nut Tree Airport is located east of Taxiway A. This apron consists of approximately 460,000 square feet of aircraft parking and movement space (including taxilanes), providing approximately 75 aircraft tie-down positions, four large aircraft parking positions and three helicopter parking positions.

Hangars and Aircraft Storage. The Airport has approximately 107 hangar units in 25 separate buildings. The Airport leases approximately 61 T-hangars and end hangars and 6 large box hangars, and the remaining hangars (box and corporate) are privately owned. According to Airport staff, there are approximately 24 aircraft owners on the hangar waiting list. Additionally, the Airport has two maintenance facilities, located southeast of the T-hangar apron area.

Fixed Based Operator (FBO). Solano County/Nut Tree Airport owns and operates fueling services at the Airport.

Wings Flight School. The Wings Flight School, which is located at Nut Tree Airport on the northeast area of the apron, offers flight instruction. Wings Flight School services include flight training, aircraft rental and sales, sightseeing tour flights, and aerial photography services.

Shock Trauma Air Rescue. CALSTAR (California Shock Trauma Air Rescue) has a base of operations at the Airport, located near the north end of the Airport ramp. From Nut Tree Airport, CALSTAR provides service to the valley and the East and North Bay Area.

Fuel Storage Facility. The Airport's fuel storage facility, which is owned and operated by Solano County, is located on the southeast side of the aircraft parking apron. Currently, aviation fuels are stored in two underground storage tanks: one 10,000-gallon 100LL AvGas tank and one 10,000-gallon Jet-A tank. AvGas is delivered by a 1,200-gallon truck, and Jet-A fuel is delivered by a 3,000-gallon truck. Solano County is responsible for maintaining the storage tanks to current Environmental Protection Agency (EPA) standards.

Automated Surface Observing System (ASOS). The Airport is served by an Automated Surface Observing System (ASOS), which is located approximately 1,150 feet north of the aircraft parking apron and 778 feet east of the runway centerline. This facility measures the sky condition, visibility, wind, temperature, dew point, relative humidity, pressure, and obstructions to vision (i.e., fog, haze). The ASOS provides up to 12 data updates each hour to airborne pilots via VHF radio frequency. The ASOS may also be accessed via telephone.

Aircraft Rescue and Firefighting (ARFF). The Airport does not presently have an Aircraft Rescue and Fire Fighting (ARFF) facility on the field; however, fire protection services for the Airport are provided by the Vacaville Fire Department Station No. 73, located approximately one mile northwest of the north end of the Airport.

Ground Access. From a regional perspective, ground access to the Airport's administrative building and main entrance is provided by County Airport Road, by way of East Monte Vista Avenue, which is located on the east side of the Airport. East Monte Vista Avenue can be accessed directly from I-505 and I-80.

Parking Facilities. The main public automobile parking area associated with airport facilities is located directly east of the administration building, off County Airport Road. An additional automobile parking area associated with a private corporate hangar is located southeast of the main parking area.

2.2.2 Project Setting

The Airport is located in the City of Vacaville, California. Situated 117 feet AMSL in Northern California, the Airport serves Solano County and multiple communities within the Sacramento Valley region. Rapidly rising terrain associated with the Vaca Mountain Range is located to the west, northwest of Nut Tree Airport. Terrain is relatively flat south and east of the Airport.

Existing land uses associated with the immediate areas surrounding the Airport are generally industrial, business park, commercial, and public park/recreational land uses.

General Plan Land Use

Nut Tree Airport currently occupies 262 acres of land within the Vacaville city limits. The Airport, in its entirety, is owned by Solano County. According to the Land Use Plan Element (Chapter 2) in the City of Vacaville's 2007 General Plan, the Airport is bounded to the west by a local public park, open space, and a small portion of industrial park land uses; to the north by mostly industrial park development; to the east by I-505, business park, and commercial development; and, to the south by I-80, commercial/highway, and commercial development land uses. Airport property is designated public/institutional. Similarly, the Airport is designated as a public/quasi-public land use in the 2008 Solano County General Plan Land Use Diagram.

Guiding land use policies described in the 2007 City of Vacaville General Plan focus on Urban Service Area development within an established "Growth Boundary" until March 2028. Nut Tree Airport is located within the City of Vacaville's 20-year Urban Service Area boundary.

Further, the 2007 General Plan indicates that areas within the City where significant land use changes or major projects may be considered will have required policy plans. Nut Tree Airport falls under the Airport Business Area Policy Plan within the 20-year Urban Service Area Boundary. As stated in the 2007 City of Vacaville General Plan, "land use changes and development proposals within the Vacaville planning area shall be consistent with the Nut Tree Airport Land Use Plan", and "are subject to review per the Solano County Airport Land Use Compatibility Review Procedures". Nut Tree Airport land use compatibility requirements are described in the following sections.

At the time of preparation of this Draft EIR, the City of Vacaville was in the process of updating their 2007 General Plan.

Zoning

The City of Vacaville 2008 *Zoning Map*, developed by the Community Development Department, classified areas to the west of the Airport as Community Facilities, and Open Space; Industrial Park and Community Facilities to the north; Business Park and General Commercial to the east; and, General Commercial, and General Commercial with a Residential Overlay district to the south of the Airport. The City of Vacaville *Zoning Map* also classifies the Airport as Community Facility.

2.3 Existing Airport Operations

2.3.1 Operations and Based Fleet

In 2011, Nut Tree Airport had 198 based aircraft and 101,500 operations. Sixty-one percent of these operations were made up of itinerant aircraft, with the remaining 39 percent consisting of local aircraft. **Table 2-1** breaks down the Airport's current operations by aircraft type.

TABLE 2-1
CURRENT (2011) NUT TREE AIRPORT OPERATIONS

Aircraft Type	Operations
Single-Engine Piston	98,605
Multi-Engine Piston	1,095
Turboprop	290
Business Jet	260
Helicopter	1,250
Total	**101,500**

SOURCE: Solano County, 2012.

According to the Master Plan, use of Runway 2/20 is split 60/40; with 60 percent of arrivals and departures occurring on Runway 20 and ten percent occurring on Runway 2. Percentages for operations by time of day were determined to be as follows: 90 percent during the day (7:00 A.M. to 6:59 P.M.), seven percent during the evening (7:00 P.M. to 9:59 P.M.), and three percent during the night (10:00 P.M. to 6:59 A.M.).

2.3.2 Airspace and Traffic Patterns

The Nut Tree Airport is an uncontrolled (non-towered) airport located in what the Federal Aviation Administration (FAA) classifies as Class G airspace from the surface up to 700 feet above ground level (AGL) where overlying Class E airspace exists and extends up to but not including 17,999 MSL. The Airport has a Common Traffic Advisory Frequency over which aircraft broadcast their position and intentions. However, radio communications are not required to operate at the Airport. The Nut Tree Airport traffic pattern altitude is 1,117 feet AMSL with a non-standard (right turn) pattern for Runway 20 and a standard (left turn) pattern on Runway 02. This keeps aircraft operating in the traffic pattern at the Nut Tree Airport exclusively on the northwest side of the runway.

Aircraft flying under instrument flight rules (IFR) will utilize the instrument procedures available at the Airport. The Nut Tree Airport has three non-precision instrument approach procedures (IAPs), as shown in **Table 2-2**, and one instrument departure procedure (IDP). Two of the IAP's are to Runway 20 and are RNAV Global Positioning System (GPS) approaches, while the third is a Very High Frequency Omni-directional Range (VOR)/ Distance Measuring Equipment (DME) approach that is made to the Airport and not to a specific runway.

The two non-precision approaches made to Runway 20 (RNAV (GPS) Y RWY 20, and RNAV (GPS) Z RWY 20) are straight-in arrivals. The differences between these two approaches are the altitude and visibility minimums that dictate how low an aircraft can descend before having to execute a missed approach procedure, the RNAV (GPS) Z RWY 20 being the approach that allows for the lowest minimums. The missed approach procedures themselves for these two approaches are also different. The RNAV (GPS) Z RWY 20 requires an immediate climbing left turn from the missed approach point, while the RNAV (GPS) Y RWY 20 requires a straight-out climbing missed approach procedure.

The VOR/DME-A approach to the Airport vectors aircraft off of the 241 degree radial from the Sacramento VOR, where once aircraft have visual reference with Runway 02-20, they can then execute a circling visual approach to the runway in use. At any point in time aircraft lose sight of the runway environment, they must execute the missed approach procedure, which is a climbing right turn to the DOLCE intersection for holding.

The single IDP is called the SOKOY TWO Departure, and is used by aircraft departing the Airport under IFR. The SOKOY TWO Departure routes aircraft departing Runway 20 with a left turn to the northeast toward the SOKOY intersection, while the departure off of Runway 02 is a straight-out departure.

TABLE 2-2
EXISTING NUT TREE INSTRUMENT APPROACHES

	Altitude Minimums[1]-Visibility Minimums[2]			
Approach	**Category A**	**Category B**	**Category C**	**Category D**
RNAV (GPS) Y RWY 20	614-1 ¾			N/A
RNAV (GPS) Z RWY 20	520-1		520-1 1/4	N/A
VOR/DME-A[3]	760-1		760-1 3/4	N/A

1. Altitudes are in feet AMSL
2. Visibilities are in Statue Miles
3. Circling Minimums Only

SOURCE: FAA, 2012.

2.4 Proposed Project

As described in the introduction to this chapter, the Airport's Master Plan is a comprehensive planning document that establishes the guidelines for improving the Airport's capital facilities over the next 20 years. The Master Plan identifies the type and extent of facilities that are required to meet forecasted aviation demand and FAA standards for a public use airport designated as a general aviation airport in the National Plan of Integrated Airport Systems (NPIAS).

2.4.1 Project Characteristics

The Proposed Project includes three phases of development that would occur over the next 20 years. These three phases of development represent the preferred alternative, as identified in the current airport layout plan (ALP) for Nut Tree Airport (see **Figure 2-3**) **Tables 2-3** through **2-5** identify and describe the projects included under Phases I, II, and III (see **Figure 2-4**).

TABLE 2-3
PHASE I MASTER PLAN PROJECTS (2013 – 2017)

Project	Description
1. Solarized shade hangars	Construct (36,000 square feet (sf)) of solarized shade hangars on existing apron west of the Administration Building.
2. Shift Runway 2/20	Shift Runway 2/20 200-feet north and relocate the associated runway edge light, signs, and markings. Additional pavement will be added to the end of Runway 20.
3. Relocate the Automated Surface Observing System/Automated Weather Observing System (ASOS/AWOS)	The ASOS/AWOS is currently located north of the Administration Building and east of Runway 2/20. The system would be relocated to the west of the Runway.
4. Relocate fencing, light poles, and other obstructions	Light pole and fence located east of Runway 2/20 to be relocated clear of taxiway object free area (65 feet from runway centerline).
5. South corporate hangar	Construction of 100,000 sf of corporate hangars southeast of the existing parking apron.
6. Airfield perimeter fencing and gates	Replacement and construction of fencing along the southeast border of the Airport.
7. South apron expansion	Construction of a 221,000 sf expansion of the existing aircraft parking apron located east of Runway 2/20.
8. Hangars 1-9 refurbishment	Refurbishment of existing hangars located east of Runway 2/20.
9. Apron Lighting and New Rotating Beacon	Light poles located on the east side of the parking apron will be refurbished, and a new rotating beacon will be installed east of the Administration Building.
10. Non-aviation development	Development of three areas on airport property for non-aviation, commercial or light industrial uses. Two areas, one approximately 1.3 acres and the other 5.5 acres in size, are located east of Runway 2/20. The third area, 2.75 acres in size, is located northwest of Runway 2/20.
11. Stabilized Runway 20 safety area	Grading and re-seeding of a 240'x250' area at the end of Runway 20.
12. Taxilane and Taxiway Rehabilitation	Segments of Taxiway A and G will be strengthened and re-paved.
13. Install new Precision Approach Path Indicators (PAPIs)*	New PAPIs will have to be installed at the end of Runway 02 to replace the ones removed for the Runway shift.
14. Airfield Lights Replacement	Existing lights on the Runway and taxiways will be replaced.
15. Additional taxilane	40'x500' taxilane that would provide potential future access between Runway 20 and adjacent existing industrial facilities.

SOURCE: Nut Tree Airport Master Plan, 2012.

BUILDINGS

NO.	DESCRIPTION	TOP EL. (AMSL) IN FT.
1	AIRPORT ADMINISTRATION/AVIATION MULTI-USE FACILITY	137.1'
2	LARGE BOX HANGAR	135.0'
3	AIRPORT BEACON	238.0'
4	BOX HANGARS	134.0'–145.0'
5	FUEL FARM (TO BE RELOCATED)	118.0'
6	ELECTRIC VAULT	
7	T-HANGARS	125.0'–132.0'
8	PRIVATE BOX HANGARS	125.0'–131.0'
9	MAINTENANCE SHED	137.1'
10	ASOS (TO BE RELOCATED)	141.0'
11	PAPI	N/A
12	OBSTRUCTION LIGHTING	SEE DWG
13	SEG. CIRCLE AND LTD WIND CONE	N/A
14	POLLUTION CONTROL FACILITY/WASHRACK	130.0'
15	AWOS/ASOS SITE (RELOCATED)	145.0'
16	FUTURE APRON EXPANSION	130.0'
17	FUTURE HANGAR DEVELOPMENT	140.0'
18	FUTURE SHADE HANGAR DEVELOPMENT	
19	MODULAR BUILDING	141.0'
20	FUTURE FUEL ISLAND (ABOVE GROUND)	

NON-STANDARD CONDITIONS

DESCRIPTION	AIRPORT REFERENCE CODE	EXISTING CONDITIONS	FUTURE CONDITIONS	PROPOSED CORRECTION
RUNWAY OBJECT FREE AREA LENGTH BEYOND RW 2 END	B-II	150'	300'	200' SHIFT OF RUNWAY 2/20
LIGHT POLE AND FENCE PENETRATE GROUP II TAXIWAY OBJECT FREE AREA	B-II	<65.5'	65.5'	ACQUIRE PROPERTY AND RELOCATE LIGHT POLE AND FENCE
NON-PRECISION RUNWAY THRESHOLD STRIPES	B-II	3	4	RE-MARK RUNWAY AFTER 200' SHIFT

THRESHOLD SITING SURFACE PENETRATIONS

NO.	DESCRIPTION	ELEVATION	PENETRATION	SURFACE	DISPOSITION
7	TREE	221.0	32.1'	RWY 2 THRESHOLD SITING SURFACE	REMOVE / TOP
8	TREE	191.6	7.2'	RWY 2 THRESHOLD SITING SURFACE	REMOVE / TOP
9	TREE	202.0	20.9'	RWY 2 THRESHOLD SITING SURFACE	REMOVE / TOP
10	TREE	219.0	38.5'	RWY 2 THRESHOLD SITING SURFACE	REMOVE / TOP

OBSTRUCTION SOURCE: NOAA LPV SURVEY 03-26-05.

AIRPORT DATA

	EXISTING	INITIAL	FUTURE
AIRPORT ELEVATION (AMSL)	116.8'	SAME	SAME
AIRPORT REFERENCE POINT (ARP)	LAT. 38°22'40.00"N LON. 121°57'41.70"W	LAT. 38°22'41.64"N LON. 121°57'40.31"W	LAT. 38°22'44.38"N LON. 121°57'38.21"W
AIRPORT REFERENCE CODE	B-II	SAME	SAME
NPIAS CATEGORY	PRIMARY COMM. SERVICE	SAME	SAME
MEAN MAX. TEMPERATURE (HOTTEST MONTH)°F	95°	SAME	SAME
TERMINAL NAVAIDS	SEG. CIRCLE, BEACON	SAME	SAME
AIRPORT ACREAGE	286	375.8	375.8

SPONSOR APPROVAL

SIGNATURE DATE

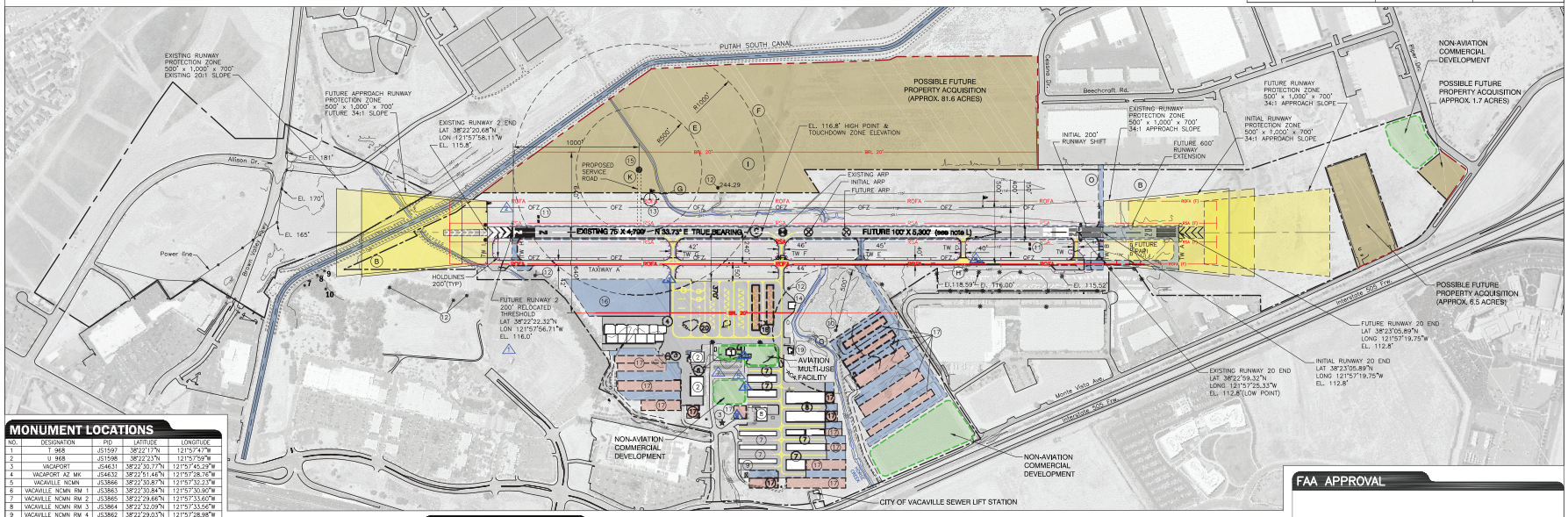
True North

14° 12.0' E MAG. DEC. DECEMBER 2011
-0.6.0'W ANNUAL CHANGE

0 200' 400' 800' 1200'
GRAPHIC SCALE IN FEET

DRAWING LEGEND

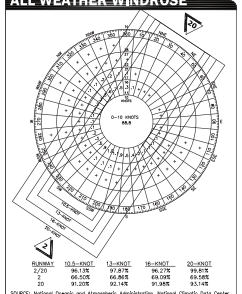
	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY 6' CHAIN LINK FENCE		
AIRPORT SECURITY BARBED WIRE FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
UNPAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE		
RUNWAY SAFETY AREA	RSA	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA	ROFA (F)
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
WIND CONE		
PRECISION APPROACH PATH INDICATOR (PAPI)		
HOLDLINES		
AIRPORT REFERENCE POINT		
RUNWAY END IDENTIFIER LIGHTS		
LIGHT POLE		
MONUMENTS	4	



MONUMENT LOCATIONS

NO.	DESIGNATION	PID	LATITUDE	LONGITUDE
1	1 968	JS1597	38°22'17"N	121°57'47"W
2	U 968	JS1598	38°22'23"N	121°57'59"W
3	VACAPORT	JS4631	38°22'30.77"N	121°57'42.23"W
4	VACAPORT AZ MK	JS4632	38°22'51.46"N	121°57'28.76"W
5	VACAVILLE NCMN	JS3866	38°22'30.87"N	121°57'32.23"W
6	VACAVILLE NCMN RM 1	JS3863	38°22'30.84"N	121°57'30.90"W
7	VACAVILLE NCMN RM 2	JS3865	38°22'29.66"N	121°57'33.60"W
8	VACAVILLE NCMN RM 3	JS3864	38°22'32.09"N	121°57'33.56"W
9	VACAVILLE NCMN RM 4	JS3862	38°22'29.03"N	121°57'28.98"W

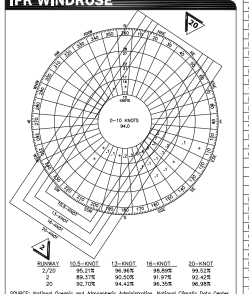
ALL WEATHER WINDROSE



RUNWAY	10.5-KNOT	13-KNOT	16-KNOT	20-KNOT
2/20	98.13%	97.87%	96.27%	89.87%
2	66.50%	66.86%	69.09%	69.58%
20	91.20%	92.14%	91.85%	93.14%

SOURCE: National Oceanic and Atmospheric Administration, National Climatic Data Center, Station 72483, Vacaville, California. Total Observations 43,056. Period of Record: August 2007–December 2009.
NOTE: Wind analysis calculated utilizing the FAA Airport Design Software supplied with FAA AC 150/5300-13.

IFR WINDROSE



RUNWAY	10.5-KNOT	13-KNOT	16-KNOT	20-KNOT
2/20	95.21%	94.96%	93.86%	89.53%
2	89.37%	90.50%	91.97%	90.42%
20	90.70%	94.42%	96.36%	96.36%

SOURCE: National Oceanic and Atmospheric Administration, National Climatic Data Center, Station 72483, Vacaville, California. Total Observations 12,476. Period of Record: August 2007–December 2009.
NOTE: Wind analysis calculated utilizing the FAA Airport Design Software supplied with FAA AC 150/5300-13.

RUNWAY DATA

ITEM	EXISTING RUNWAY 2/20	INITIAL RUNWAY 2/20	FUTURE RUNWAY 2/20
APPROACH VISIBILITY MINIMUMS	VISUAL/1-MILE	1-MILE/1-MILE	SAME/SAME
FAR PART 77 APPROACH CATEGORY	B/NP	NP/NP	SAME/SAME
FAR PART 77 APPROACH SLOPE	20:1/34:1	34:1/34:1	SAME/SAME
RUNWAY WIDTH AND LENGTH	75' X 4,700'	SAME	100' X 6,300' (see note L)
PAVEMENT SURFACE TYPE	ASPHALT	SAME	SAME
PAVEMENT STRENGTH (IN 1000 LBS.)	305	SAME	SAME
TAXIWAY SURFACE TYPE	ASPHALT	SAME	SAME
RUNWAY LIGHTING	HIRL	SAME	SAME
RUNWAY MARKING	NP, RCL, EDGE	SAME	SAME
TAXIWAY LIGHTING	MITL	SAME	SAME
EFFECTIVE RUNWAY GRADIENT %	0.06	0.07	0.06
MAXIMUM RUNWAY GRADIENT %	0.16	0.15	0.13
RUNWAY LINE-OF-SIGHT	CRITERIA MET		
VISUAL APPROACH AIDS	PAPI, REIL	SAME	SAME
INSTRUMENT APPROACH AIDS	VOR, GPS	SAME	SAME
AIRPORT REFERENCE CODE	B-II	SAME	SAME
CRITICAL AIRCRAFT	[MISSALT FALCON 50]	SAME	DASSAULT FALCON 50
WING SPAN	54.5'	SAME	61'1"
UNDER CARRIAGE WIDTH	17'2"	SAME	13'
APPROACH SPEED (KNOTS)	100	SAME	113
MAXIMUM TAKEOFF WEIGHT (LBS.)	12,500	SAME	38,800
RUNWAY SAFETY AREA WIDTH	150'	SAME	SAME
RUNWAY SAFETY AREA BEYOND R/W END	300'/300'	SAME/SAME	SAME/SAME
RUNWAY OBJECT FREE AREA WIDTH	500'	SAME	SAME
RUNWAY OBJECT FREE AREA BEYOND R/W END	300'/300'	SAME/SAME	SAME/SAME
OBSTACLE FREE ZONE WIDTH	400'	SAME	SAME
OBSTACLE FREE ZONE BEYOND R/W END	200'/200'	SAME/SAME	SAME/SAME
OBSTACLE FREE ZONE CRITERIA	NO OFZ OBJECT PENETRATIONS		
RUNWAY CL TO TAXIWAY CL	240'	SAME	SAME
TAXIWAY CL TO FIXED OR MOVEABLE OBJECT	250'	SAME	SAME
TAXIWAY OBJECT FREE AREA WIDTH	131'	SAME	SAME
TAXIWAY SAFETY AREA WIDTH	79'	SAME	SAME
TAXIWAY WINGTIP CLEARANCE	26'	SAME	26'
TAXIWAY CENTERLINE TO FIXED/MOVEABLE OBJECT	370'	SAME	SAME
THRESHOLD SITING CRITERIA	SEE TABLE		

REVISIONS

NO.	DESCRIPTION	DATE
1	'AIRPORT LAYOUT PLAN' DRAWING, BY MEAD & HUNT, INC., SANTA ROSA, CALIFORNIA	6/2007

RUNWAY COORDINATES & ELEVATIONS

ITEM	RUNWAY 2/20 EXISTING	RUNWAY 2/20 INITIAL	RUNWAY 2/20 FUTURE
RUNWAY END COORDINATES	LAT. 38°22'20.68"N / LAT. 38°22'59.32"N LON. 121°57'58.11"W / LON. 121°57'25.33"W	LAT. 38°22'22.32"N / LAT. 38°23'05.89"N LON. 121°57'56.71"W / LON. 121°57'23.94"W	LAT. 38°22'22.32"N / LAT. 38°23'05.89"N LON. 121°57'56.71"W / LON. 121°57'19.75"W
RUNWAY END ELEVATION	115.8'/112.8'	116.0'/SAME	SAME/SAME
RUNWAY HIGH/LOW POINT ELEVATION	112.8'/116.8"	SAME/SAME	SAME/SAME
TOUCHDOWN ZONE ELEVATION (TDZE)	116.8'/116.7'	SAME/SAME	SAME/SAME

NOTES

A. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
B. Coordinates and elevations taken from FAA website, http://surveys.jcsd.gov/pls/datasheet_prd/pkg_airport.PRO_AIRPORT_RUNWAY?v_crit_num=3153
All elevations and coordinates are based on NAVD 88 and NAD 83 datum.
C. Forward azimuth reckoned from north. Sources: FAA Inverse 3D.
D. Section Corners–The Nut Tree Airport is located in Rancho Los Putos. The original Government Land Office surveys did not survey (set Section Corner Locations) within boundary of Rancho Los Putos.
E. ASOS Zone 1 – Objects restricted to 15' below future wind sensor elevation.
F. ASOS Zone 2 – Objects restricted to 10' above future wind sensor elevation.
G. Creek disposition to be determined.
H. Light pole and fence to be relocated clear of taxiway OFA (65.5 feet from centerline).
I. Eucalyptus trees to be removed.
J. Replace/relocate barbed wire fencing with 6' chain link.
K. Future AWOS/ASOS location does not meet siting criteria per FAA Order 6560.20B. FAA confirmation pending.
L. For runway width space reservation purposes only: Future Runway 2/20 width to remain B-II throughout planning horizon. Project eligibility not factored.
M. Please see Airport Capital Improvement Plan (ACIP) for a complete list of planned development projects.
N. Property lies in a portion of Section 10 & 15, T.6 N, R.1 W, M.D.M. Solano County , CA. No identified section corners appear in the airport layout plan view.
O. Possible Taxiway funded by others concurrent with, or subsequent to, initial 200 foot runway threshold shift.

FAA APPROVAL

The preparation of this document may have been supported, in part, through the Airport Improvement Program financial assistance from the Federal Aviation Administration as provided under Title 49, United States Code, section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this plan by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public laws.

Solano County
General Services Department
Vacaville, CA (707)469-4600

Nut Tree Airport
Vacaville, California

Airport Layout Plan

SCALE	DATE	SHEET NO.
1" = 400'	DECEMBER 2012	1 of 7

SOURCE: BDC, 2012; and ESA, 2012

Figure 2-3
Airport Layout Plan

TABLE 2-4
PHASE II MASTER PLAN PROJECTS (2018 – 2022)

Project	Description
16. North T-hangar development	Phase I development of utility infrastructure and access road to accommodate T-hangars to be located north of existing hangars, east of Runway 2/20, and south of existing non-aviation buildings.
17. North T-hangar development – Phase II West	Phase II development of north T-hangars includes the construction of 46,500 sf of T-hangar space.
18. East corporate hangars	Construction of 20,000 sf of corporate hangars to be located south of County Airport Road and east of Runway 2/20.
19. North T-hangar development – Phase III Middle	Phase III development of north T-hangars includes the construction of 47,500 sf of T-hangars to the north of existing hangars and east of Runway 2/20.
20. North T-hangar development – Phase IV East	Phase IV development of north T-hangars includes the construction of 33,000 sf of T-hangar space and 56,000 sf of box hangars to the north of existing hangars and east of Runway 2/20.
21. Expand the multi-use arrival/departure facility	Remodel and expansion of the existing administration building to accommodate airport staff, public restrooms, meeting space, public lobby space, aviation retail and offices, a pilots lounge, and a restaurant.
22. Airfield pavement rehabilitation	Replacement or reinforcement of existing airfield pavement.

SOURCE: Nut Tree Airport Master Plan, 2012.

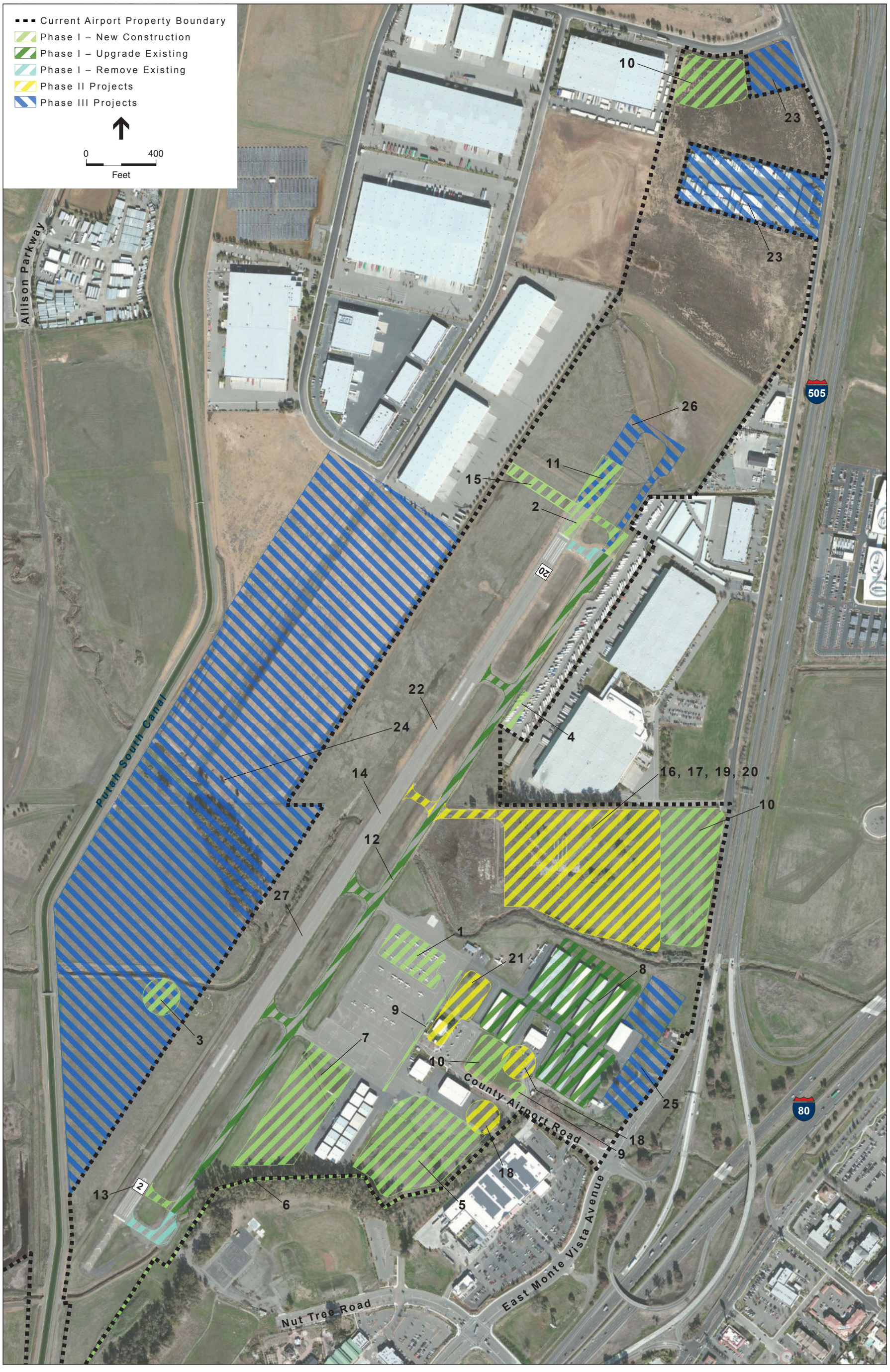
TABLE 2-5
PHASE III MASTER PLAN PROJECTS (2022 – 2031)

Project	Description
23. North land acquisition	Acquire 8.2 acres of land north of Runway 20 in order to ensure approach protection.
24. Westside land acquisition	Acquire 82 acres of land immediately west of the Airport.
25. East hangar expansion	Development of 16,000 sf of T-hangars and 100,000 sf of box hangars east of Runway 2/20, and immediately adjacent to East Monte Vista Avenue.
26. Extend Runway 20 to 5,300 feet	Extension of Runway 20 by 600 ft to the northeast.
27. Airfield Pavement Rehabilitation	Replacement or reinforcement of existing airfield pavement.

SOURCE: Nut Tree Airport Master Plan, 2012.

2.4.2 Forecasted Operations

Utilizing the growth rate from the FAA Aerospace Forecast, Fiscal Year 2010-2030 for general aviation hours flown by piston driven aircraft, the Master Plan forecasts an annual growth rate of 1.1 percent for aircraft operations and a 0.9 percent growth rate of based aircraft over a 20-year planning horizon. During this period, operations are forecasted to grow from 101,500 (current) to 108,286 by 2017, and 127,329 by 2031. Based aircraft at Nut Tree Airport are forecasted to increase from 198 (current) to 233 by 2017, and 267 by 2031. **Table 2-6** provides forecasted aircraft operations by aircraft type.



SOURCE: USDA, 2010; ESRI, 2012; and ESA, 2012

Nut Tree Airport Master Plan EIR . 120526

Figure 2-4

Proposed Project – Phase, I, II, and III

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TABLE 2-6
FORECASTED NUT TREE AIRPORT OPERATIONS

	Operations by Year	
Aircraft Type	**2017**	**2031**
Single-Engine Piston	106,252	123,697
Multi-Engine Piston	1,181	1,374
Turboprop	317	364
Business Jet	284	326
Helicopter	1,334	1,568
Total	**109,369**	**127,329**

SOURCE: Solano County, 2012.

2.4.3 Project Baseline

For the purposes of evaluating potential impacts associated with the development of the Proposed Project described above, this EIR relied upon a baseline condition that represented the physical environmental condition in the vicinity of the Proposed Project site at the time the notice of preparation was published (September 14, 2012). In order to determine potential impacts associated with forecasted increases in aircraft operations (as described in Table 2-6), this EIR relied upon the most current year with 365 days of operational data; in this case, 2011 (see Table 2-1).

2.5 Objectives of the Proposed Project

The purpose of the Proposed Project is to develop the facilities at Nut Tree Airport necessary for accommodating forecasted aviation demand over a 20-year planning period. The Airport is designated as a "general aviation" airport in the FAA's) NPIAS. In this role, the Airport accommodates general aviation activity in the I-80 corridor between the Eastern San Francisco Bay Area and Sacramento. The following objectives for the Proposed Project affirm the Airport's role in the NPIAS as an airport of significance:

1. Continue to provide general aviation services that will meet the present and forecasted air transportation needs of the region;
2. Provide an increasing range of general aviation services to the flying public;
3. Continue to serve as a vital and supporting transportation link connecting Solano County, Travis Air Force Base, and the cities of Vacaville, Fairfield, and Dixon to the region and beyond;
4. Preserve and further the history and value that Nut Tree Airport has in the local community;
5. Continue to maintain compatibility between the Airport and the surrounding community; and
6. Balance future development of the Airport with the protection of the environment.

2.6 Approvals

The Solano County Board of Supervisors (Board of Supervisors) will use the information contained in this Environmental Impact Report (EIR) to evaluate the potential environmental effects of the Proposed Project, and the Board of Supervisors will render a decision whether to approve the Project. Responsible and cooperating agencies may also use this EIR as needed for their subsequent discretionary actions such as issuing permits for the Proposed Project. The EIR will serve as an information document for the public as well.

The Proposed Project requires the following approvals:

- Certification of the EIR; and
- Approval of the Master Plan.

In addition, other agencies will have jurisdiction over the Proposed Project activities, including, but not limited to the following:

- Central Valley Regional Water Quality Control Board – issuance of a National Pollutant Discharge Elimination System (NPDES) permit;
- City of Vacaville – approval **by City Council** of land acquisition pursuant to Government Code Section 65402(b); and
- City of Vacaville – wastewater discharge and water supply allowances.

2.7 Cumulative Projects

A project may have significant environmental effects when viewed in connection with the effects of past, other current, and probable future projects. Where these combined effects are significant, CEQA Guidelines Section 15065(a)(3) and 15130(a) define these effects as "cumulatively considerable," and require that these impacts are discussed within an EIR. This chapter presents a discussion of potential cumulative effects of the Proposed Project, along with feasible mitigation measures that may reduce the impacts to less than significant.

Section 15130(b) of the CEQA Guidelines states that the following three elements are necessary to an adequate discussion of significant cumulative impacts:

- Either: (A) a list of past, present, and probable future projects producing related or cumulative impacts, including those projects outside the control of the Lead Agency (i.e., the list approach); or (B) a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.
- A summary of expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available.

- A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the Project's contribution to any significant cumulative effects.

The discussion of cumulative impacts must reflect the severity of the impacts as well as the likelihood of environmental impacts attributable to the project alone. As state in the CEQA Guidelines, "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable."

According to the CEQA Guidelines (Section 15355):

a. The individual effects may be changes resulting from a single project or a number of separate projects.
b. The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probably future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, as stated in Section 15064(h)(4) of the CEQA Guidelines, it should be noted that:

> The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

As described above, CEQA Guidelines Section 15130 identifies two methods for identifying other projects that when combined with the Proposed Project could result in a cumulative effect: (1) a list of related projects in the vicinity of the proposed project, or (2) a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Due to the fact that each environmental resource is affected by a project in different ways, either methodology, or a combination of both, may be applied to a cumulative impact analysis. For example, the list method may provide a more accurate depiction of localized impacts (e.g., traffic) and growth in the near-term; however, it may overstate certain impacts as some projects never come to fruition. Conversely, because jurisdictions plan for development far in advance of when it may actually occur, the summary of projections method provides a better projection of growth in the long-term. Because the projection method often relies on regional plans and their environmental documents, this methodology also provides a better understanding of potential regional impacts (e.g., air quality).

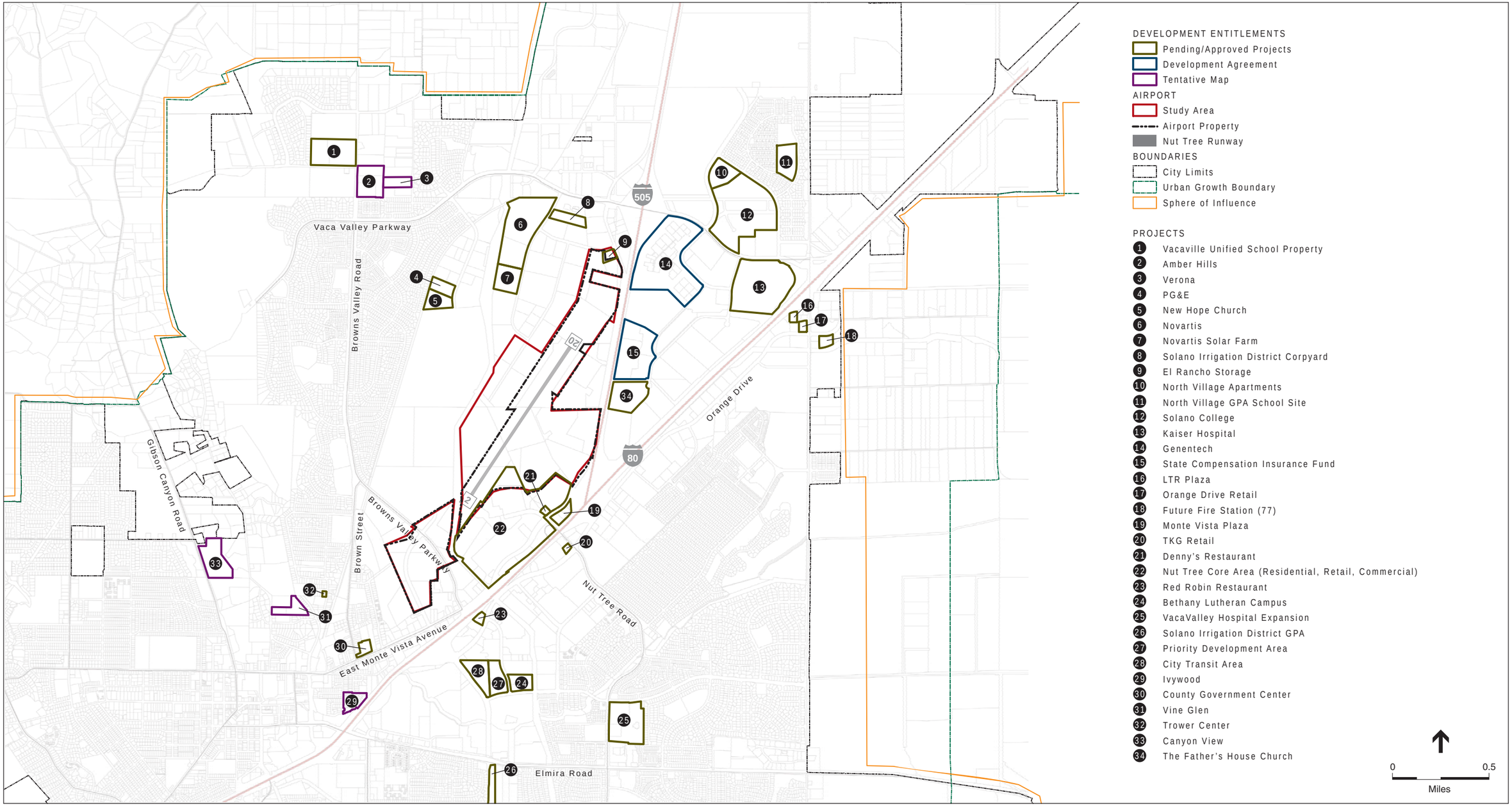
As set forth above in Section 15355(b) of the *CEQA Guidelines*, related projects consist of "closely related past, present, and reasonable foreseeable probable future projects." Though Nut Tree Airport is a regionally-serving general aviation airport, given the Airport's location within the City of Vacaville, it is appropriate to assess the Proposed Project's potential cumulative impacts within the context of past, present, and reasonably foreseeable projects under the jurisdiction of the City. As such, the Proposed Project's cumulative impacts are accounted for by examining and analyzing potential projects that are known within the City of Vacaville, as well as potential development that has been identified in regional plans.

Figure 2-5 identifies the location of the 34 known cumulative development projects. These projects are also listed in **Table 2-7**. The list of cumulative projects represents development that has been identified by the City of Vacaville as relevant past, present, and reasonably foreseeable projects. In addition to the list provided in **Table 2-7** potential development identified in both the *City of Vacaville General Plan* and the *Solano County General Plan* were taken into consideration.

Cumulative impacts analyzed in this EIR (impacts from related projects in conjunction with the proposed project) would likely represent a "worst-case" scenario for the following reasons:

- Not all of the related projects will be approved and/or built. Further, it is also likely that several of the related projects will not be constructed at the same time as the proposed project or opened until after the proposed project has been built and occupied.
- Impact projections for related projects would likely be, or have been, subject to unspecified mitigation measures, which would reduce potential impacts.

Many related projects are expressed in terms of gross square footage or are conceptual plans such as master plans that assume complete development; in reality, such projects may be smaller (i.e., the net new development) because of the demolition or removal of existing land uses resulting from the development of the related project.



SOURCE: City of Vacaville, 2010; and ESA, 2012

Figure 2-5
Cumulative Project Map

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TABLE 2-7
CUMULATIVE PROJECT LIST

Map No.	Project Name	Description	Status
1	VUSD Property	Proposed RLD in the General Plan Update	Pending
2	Amber Hills	19.1 acres of single-family residential development	Tentative Map
3	Verona	4.72 acres of single-family residential development	Tentative Map
4	PG&E	28K sf operations center; 5K sq ft office expansion approved 9/12	Approved
5	New Hope Church	45K sf church complex; 400 & 700 seat auditoriums	Approved (partially built)
6	Novartis	Pharmaceutical manufacturing facility	Approved (partially built)
7	Novartis Solar Farm	5-acre solar power generation facility	Built
8	SID Corpyard	Moved to SW corner of Piper & Cessna within an existing building	Existing
9	El Ranch Storage	45,700 sf storage facility and outdoor vehicle storage on 2.5 acres	Approved
10	NV Apartments	9.9 acres of multi-family residential development totaling 228 units	Approved
11	NV GPA Schools Site	64 unit single family on approximately 10 acres	Approved
12	Solano College	153,000 sf educational facility; 6000 student enrollment max	Approved
13	Kaiser Hospital	780,000 sf hospital on 50 acres; 200 bed facility	Approved and complete
14	Genentech	950,000 sf manufacturing facility	Development Agreement
15	State Compensation Insurance Fund	434,000 sf office complex on 33 acres	Development Agreement (3 of 5 approved buildings are built)
16	LTR Plaza	15,000 sf highway commercial	Approved and complete
17	Orange Drive Retail	11K sf highway commercial	Approved
18	Fire Station (77)	N/A	Approved
19	Monte Vista Plaza	Highway Commercial	Approved
20	TKG Retail	7,000 sf highway commercial	Approved
21	Denny's	6,500 sf restaurant	Approved and complete
22	Nut Tree Apartments	12 acres of multi-family residential development totaling 216 units	Approved
23	Red Robin	7,000 sf restaurant	Complete
24	Bethany Lutheran Campus	Church and school	Approved and partially complete
25	Vacavalley Hospital Expansion	149,000 sf hospital complex	Approved and partially complete
26	SID GPA	10-acre Residential Low-Medium Density & .87 acre Office Commercial	Approved

TABLE 2-7
CUMULATIVE PROJECT LIST

Map No.	Project Name	Description	Status
27	Priority Development Area	8.9 acres of Residential Overlay (for High Density)	Approved
28	City Transit Center	10-bus terminal/ 230 surface parking spaces & 3-story, 400-car garage	Approved and first phase complete
29	Ivywood	5.9 acres of single-family residential development totaling 37 units	Approved Final Map
30	County Government Center	35,000 sf government office and health clinics	Approved and complete
31	Vine Glen	6.3 acres of single-family residential development totaling 19 units	Tentative Map
32	Trower Center	Small community center	Pending/Approved
33	Canyon View	14.1 acres of single-family residential development totaling 15 units	Tentative Map
34	The Father's House Church	115,000 sf church complex on 25 acres	Approved

SOURCE: City of Vacaville, 2012.