



Airport Feasibility and Viability Study





Draft
AIRPORT FEASIBILITY AND VIABILITY STUDY

For
PINE MOUNTAIN LAKE AIRPORT AND COLUMBIA AIRPORT

Prepared for
COUNTY OF TUOLUMNE, CA

By



In Association With

Kimley»Horn

And



September 2024



TABLE OF CONTENTS

ELEMENT 1: AIRPORTS ASSESSMENT

Pine Mountain Lake Airport (E45) NPIAS Evaluation.....	1-1
Pine Mountain Lake Airport (E45) Property Review.....	1-9
Pine Mountain Lake Airport (E45) Inventory of Airport Infrastructure	1-17
Tuolumne County Airports Assessment	1-25

ELEMENT 2: PINE MOUNTAIN LAKE AIRPORT (E45) ECONOMIC IMPACT STUDY

ELEMENT 3: PINE MOUNTAIN LAKE AIRPORT (E45) RENT STUDY

ELEMENT 4: COLUMBIA AIRPORT (O22) ECONOMIC IMPACT STUDY

ELEMENT 5: COLUMBIA AIRPORT (O22) RENT STUDY



ELEMENT 1:

Airports Assessment





PINE MOUNTAIN LAKE AIRPORT (E45) NPIAS EVALUATION

Prepared by Coffman Associates

Digital records for Pine Mountain Lake Airport (E45) have been included in the *National Plan of Integrated Airport Systems* (NPIAS) inventory since 2001. The NPIAS is the Federal Aviation Administration's (FAA) system for identifying and classifying a public-use airport's eligibility for receiving federal funding for airport development projects. The NPIAS is updated every two years and serves two main purposes: to estimate Airport Improvement Program (AIP) projects and associated costs and to reevaluate airport roles. Airport service levels are defined by a set of criteria that determines if an airport is a primary (commercial service) airport or a nonprimary (general aviation [GA]) airport. Airport roles within the FAA's classification system have been redefined by the FAA over time. E45 was classified as a nonprimary GA airport and served either a local or basic role until the 2023 NPIAS publication, when the airport's role was redesignated as unclassified. All NPIAS airports – except those with an unclassified role – are eligible to receive federal funding for airport development projects. Unrelated to its NPIAS classification, E45 has been ineligible to receive federal funds since 2007 due to noncompliance with federal obligations.

This evaluation will review the NPIAS as it relates to Pine Mountain Lake Airport, including what criteria are required for the airport to return to at least a basic airport role. The analysis will also review the likelihood that conditions at E45 will change to warrant FAA reclassification of the airport, as well as the recommended next steps Tuolumne County could take if redesignating the airport is determined to be possible.

HOW ARE NPIAS CLASSIFICATIONS DETERMINED?

For an airport to be included in the NPIAS, it must be a public-use facility. Public-use airports are typically owned and operated by a public entity, such as a city, county, or public authority. Under certain circumstances, an airport can be privately owned and still open to the public. In addition to being open to the public, the airport must exhibit the essential attributes listed in FAA Order 5090.5, *Formulation of the NPIAS and ACIP*. These broad essential characteristics are defined by the FAA to provide guidance so that all airports are wholly integrated into the larger national system and are ensured to be safe, efficient, environmentally responsible, and able to meet the needs of the traveling public. These essential airport characteristics are shown in **Table 1A**.



TABLE 1A | Essential Airport Characteristics

AIRPORTS SHOULD BE:	CHARACTERISTIC
Safe	Developed and maintained to appropriate design standards
Efficient	Located to provide ease of access and enhanced usage
Affordable to both the users and the government	Relies primarily on producing self-sustaining revenue with minimal burden on the general revenues of the local, state, and federal government. As stated in Executive Order 12893, federal investment will be based on analysis of expected benefits and costs.
Flexible and expandable	Can meet changes in demand and accommodate evolving needs, including but not limited to aircraft designs, airline service strategies, and aeronautical activities.
Permanent	Ensures it will remain open for aeronautical use over the long term
Compatible with surrounding communities	Maintains a balance between the needs of aviation, the environment, and the interests of neighboring areas.
Adaptable to new technology and airspace changes	Developed in concert with improvements to the air traffic control system and associated technological advancements.

Source: FAA Order 5090.5, Formulation of the NPIAS and ACIP

The airport must then be categorized and classified within the NPIAS. To determine an airport's classification within the national system, the FAA has defined a set of criteria airports must meet for either primary (commercial service) or nonprimary (GA) designation. In general, airports are categorized based on aviation activity, geography, and public-interest measures. Primary airports are commercial service airports with more than 10,000 annual passenger boardings (enplanements). Primary airports are further classified into four categories, which are shown in **Table 1B**. These categories are based on the percentage of the national annual enplanements an airport serves.

TABLE 1B | Commercial Service Airport Categories

AIRPORT CATEGORY	CRITERION
Large Hub	Receives 1.0% or more of annual U.S. commercial enplanements
Medium Hub	Receives 0.25% to 1.0% of annual U.S. commercial enplanements
Small Hub	Receives 0.05% to 0.25% of annual commercial enplanements
Nonhub	Receives less than 0.05% but more than 10,000 of annual U.S. commercial enplanements
Nonprimary Commercial Service	Also referred to as nonhub nonprimary; have scheduled passenger service and receive between 2,500 and 10,000 enplanements

Source: FAA Order 5090.5, Formulation of the NPIAS and ACIP

Nonprimary airports are classified based on the role the airport fulfills in the system, as well as meeting one of the minimum criteria for annual activity. Nonprimary airport categories are described in **Table 1C**. One criterion that is explicitly mentioned as a critical component of NPIAS category reviews is based aircraft data. As noted in Section 3.1.3 of FAA Order 5090.5, an airport sponsor should maintain an accurate list of aircraft based at its airport on the FAA-supported website, *BasedAircraft.com*. Each airport's aircraft list is validated against the FAA aircraft registry on a continual basis.



TABLE 1C | Nonprimary Airport Categories

Nonprimary Airport Category	Fulfills this system role:	And meets one of the following minimum criteria for annual activity:
National	- Supports the national airport system by providing communities access to national and international markets throughout the U.S. - National airports have very high levels of aviation activity with many jets and multi-engine propeller aircraft	5,000 or more instrument operations, 11 or more validated based jets, and 20 or more international flights or 500 or more interstate departures; 10,000 or more enplanements and at least 1 carrier enplanement by a large certificated air carrier; or 500 million pounds or more of landed cargo weight
Regional	- Supports regional economies by connecting communities to regional and national markets - Located in metropolitan areas serving relatively large populations. - Have high levels of activity with some jets and multi-engine propeller aircraft	- In a metropolitan or micropolitan statistical area, 10 or more domestic flights over 500 miles, 1,000 or more instrument operations, and 1 or more validated based jets or 100 or more validated based aircraft; - Nonprimary commercial service airport (requiring scheduled service) within a metropolitan statistical area; or - Currently designated by the FAA as a reliever airport with 90 or more validated based aircraft
Local	- Supports local communities by providing access to markets within a state or immediate region - Most often located near larger population centers, but not necessarily in metropolitan or micropolitan areas - Most flying is conducted by piston aircraft in support of business and personal needs - Typically accommodates flight training, emergency services, and charter passenger service	- Public-owned, 10 or more instrument operations, and 15 or more validated based aircraft; or - Public-owned with 2,500 or more annual enplanements
Basic	- Provides a means for general aviation flying and links the community to the national airport system - Supports general aviation activities, such as emergency response, air ambulance service, flight training, and personal flying - Most flying is self-piloted for business and personal reasons, using propeller-driven aircraft - Often fulfills its role with a single runway or helipad and minimal infrastructure	- Public-owned with 10 or more validated based aircraft, or 4 or more validated based helicopters (if a heliport); or - Public-owned and located 30 or more miles from the nearest NPIAS airport; or - Owned by or serving a Native American community; - Identified and used by the U.S. Forest Service, U.S. Marshals, U.S. Customs and Border Protection (designated, international, or landing rights), or U.S. Postal Service (air stops); or has Essential Air Service; - A new or replacement public-owned airport that has opened within the last 10 years; or - Unique circumstances related to special aeronautical use
Unclassified	- Currently in the NPIAS but with limited activity and may not meet the essential airport attributes in Table 1A - If the next review of an unclassified airport's activity shows levels that meet the criteria for one of the classifications, that airport will be reclassified in the next published NPIAS	

Source: FAA Order 5090.5, Formulation of the NPIAS and ACIP



PINE MOUNTAIN LAKE AIRPORT'S HISTORICAL AND CURRENT NPIAS ROLE

HISTORICAL ROLE

E45 has been included in the NPIAS records found online, dating back to 2001. The airport has been classified as a GA airport supporting local aviation activities that typically involve personal, recreational, and business use. Historical NPIAS classifications, along with recorded numbers of based aircraft, are listed in **Table 1D**. From 2001 to 2011, the NPIAS generally reported nonprimary airports as GA airports; however, new system roles were defined in 2012 by the FAA's *General Aviation Airports: A National Asset* report. As such, the publication of the 2013 NPIAS further classified GA airports into five nonprimary airport categories, which are defined in **Table 1C**.

Between 2013 and 2021, E45 fluctuated between the basic and local roles, most likely due to the change in its number of based aircraft, as based aircraft counts are a critical component of the NPIAS review. The minimum number of based aircraft to be categorized as a local airport is 15, while the minimum for a basic airport is 10.

GA airports included in the NPIAS are also eligible for AIP development funds, which typically focus on pavement reconstruction and improvements to meet current airport design standards. Five-year development estimates were published for each NPIAS airport, but this does not necessarily mean the funds were utilized. The five-year development estimates were included for E45 from 2001-2009; however, the development estimates were reported as zero dollars from the 2011 NPIAS publication through 2023. This is most likely due to the ineligibility of E45 to receive federal funding due to its noncompliance with FAA obligations (grant assurances), as detailed in the next paragraph.

TABLE 1D | Historical Pine Mountain Lake Airport NPIAS Classification

NPIAS Year	Nonprimary Airport Category	No. of Based Aircraft	5-Year Development Estimate
2001	GA	103	\$1,038,000
2005	GA	103	\$525,000
2007	GA	118	\$823,684
2009	GA	118	\$823,684
2011	GA	78	\$0
2013	Basic	13	\$0
2015	Basic	25	\$0
2017	Local	24	\$0
2019	Local	23	\$0
2021	Basic	11	\$0
2023	Unclassified	7	\$0

Source: FAA historical and current NPIAS publications

In 2007, the FAA San Francisco Airports District Office (ADO) sent the Tuolumne County airports director a letter regarding federal grant assurances and funding. The letter stated: "In order for Pine Mountain Lake Airport to receive continued Airport Improvement Program (AIP) funding, the following items need correcting: (1) unrestricted airport access, and (2) existing residential airpark." The letter explains how the items mentioned conflict with Grant Assurance 5, *Preserving Rights and Powers*, and Grant Assurance 21, *Compatible Land Uses*. The letter encouraged the county to develop a plan as a correction tool to address the public access and incompatible land use issues. Another letter from the FAA was issued in March 2012, reiterating the need for the sponsor to correct the same two issues identified by the 2007 letter. The March 2012 letter identified that an access plan is required regarding access to airports from residential property, referencing the *Federal Register Interim Policy*, which was published on March 18, 2011. In addition to the requirements for the access plan, the letter also states: "All existing residential through-the-fence (RTTF) access points must be identified on the Airport Layout Plan (ALP)."



The *Federal Register Interim Policy* provided guidance for mitigating existing and potential problems associated with airport access from residential property. Later laws that followed regarding RTTF agreements specified that airport sponsors are not in violation of grant assurances for entering into airport access agreements with adjacent residential property owners, as long as the agreements are made according to the terms and conditions of 49 U.S. Code 47107(s), *Agreements Granting Through-the-Fence-Access to General Aviation Airports*. This code states that the agreement “between an airport sponsor and a property owner should be a written agreement that prescribes the rights, responsibilities, charges, duration, and other terms the airport sponsor determines are necessary to establish and manage the airport sponsor’s relationship with the property owner.” The terms and conditions between the airport sponsor and property owner require the property owner to meet the following minimum requirements:

1. Pay an airport access charge that is determined by the airport sponsor and is comparable to those charged to tenants and operators on the airport that make similar use of the airport;
2. Bear the cost of building and maintaining the infrastructure that – as determined by the airport sponsor – is necessary to provide aircraft located on the property adjacent to or near the airport with access to the airport’s airfield;
3. Maintain the property for residential, noncommercial use for the duration of the agreement;
4. Prohibit access to the airport from other properties through the property of the property owner; and
5. Prohibit any aircraft refueling from occurring on the property.

An exemption to the terms and conditions listed above may apply to agreements made prior to 2012 if the agreements are subject to deed restrictions that are perpetual and cannot be brought into compliance; however, the exemption no longer applies if modifications to the agreement can be made.

CURRENT ROLE

The 2023 NPIAS publication designates E45 as an unclassified airport. Unclassified airports experience limited activity and may not meet the essential airport characteristics from **Table 1A**. When considering classification based solely on based aircraft counts, an airport with fewer than 10 based aircraft (on physical airport property) would be designated as an unclassified airport. According to the 2023 NPIAS, E45 decreased from 11 based aircraft in 2021 to seven based aircraft in 2023, thus dropping below the threshold of 10 necessary to meet the minimum based aircraft count to classify as a basic airport. The FAA’s National Based Aircraft Registry also identified seven validated based aircraft, as of May 2023. There are currently 173 public-owned unclassified airports and 40 privately owned unclassified airports in the 2023 NPIAS. In this publication, 28 airports were reported to have a decline in activity which resulted in a reclassification to an unclassified role. Of these 28 airports, 27 were previously designated as basic, while one was previously classified as regional.

When considering the previously detailed essential airport characteristics, E45 meets most definitions, while improvements in some elements are ongoing and may require additional coordination with the FAA to be met. The essential airports characteristics for E45 are analyzed below based on the available information received for this study.



- **Safe** | Meeting safety and design standards at E45 is an ongoing effort. The airport is currently addressing obstruction hazards identified by the California Department of Transportation, Division of Aeronautics (Caltrans). Caltrans conducted a state permit compliance inspection and FAA Airport Master Record (5010) update in April 2023. The inspection identified tree obstructions penetrating Title 14 Code of Federal Regulations (CFR) Part 77 surfaces around the airport, including the Runway 9 approach and Runway 9-27 transitional surfaces. The airport sponsor has begun tree trimming to address the tree heights. Additional discrepancies were identified relating to airport design standards, including standards for airport markings. Informational markings on Taxiway A may not be painted within movement areas and are directed to not be repainted the next time markings are redone at the airport. Airport informational signage was also found to be non-standard along both taxiways. The sponsor was advised to replace signage, following FAA Advisory Circular (AC) 150/5340-18G, *Standards for Airport Signage*, at the earliest convenience. Upon review of the previous ALP from 2006, design and safety standards appear to be in compliance, except for one item. The ALP identifies that the north taxiway is 20 feet wide, while the standard is 25 feet. There was a frangible deer fence located within the Runway 9-27 runway object free area (ROFA), but this has since been removed according to Airport management. The ALP requested a standard modification for the fence; however, the county should coordinate with the FAA to ensure that safety standards are met.
- **Efficient** | E45 provides ease of access and enhanced usage. Tiedowns and fuel are available for transient aircraft and parking is available for vehicles on the landside.
- **Affordable to both the users and the government** | Tuolumne County provides funds for airport upkeep and there is an ongoing effort to identify funding and revenue sources within this study process.
- **Flexible and expandable** | E45 has available land to meet changes in demand and evolving needs. The previous ALP depicts additional hangar sites, should demand require expansion of facilities on airport property.
- **Permanent** | Airport property will only be used for aeronautical activities, as it was deeded.
- **Compatible with surrounding communities** | Public-owned airports are typically most compatible with land uses other than residential; however, the surrounding community is comprised of residential homes with aircraft hangars and easement access adjacent to the airport property for homeowners' aviation use. These homeowners participate in aviation and benefit from the access to the airport property. The county should continue to monitor land use and zoning in the vicinity of the airport to protect aviation activities and operations, which is evident through a current update to the county's airport land use compatibility plan (ALUCP).
- **Adaptable to new technologies and airspace changes** | Tuolumne County will address new technologies and airspace changes as they become realized in the future.



In the airport's current role as an unclassified facility, E45 is ineligible to receive federal funding for airport development projects; however, it may still receive state apportionment funding for specific projects. State apportionment funding is excess funding from the FAA which is allocated to states for their use at nonprimary airports. States received a portion of the excess funding based on their population and area proportions relative to other states. State apportionment funding may be used for four types of projects, including pavement maintenance on the primary runway, obstruction removal for the primary runway, rehabilitation of the primary runway, or a project that is considered necessary for the safe operation of the airport.

PROBABILITY AND STEPS FOR RECLASSIFICATION

The FAA reviews all airports in the NPIAS on an annual and biennial basis and adjusts their roles in the national system. The next NPIAS publication will be in 2025. Once an airport is included in the NPIAS, it is generally not reevaluated for continued inclusion; however, its activity levels will be reviewed to verify and update the airport's classification and role. E45 will likely remain unclassified until it meets at least one of the minimum activities defined in **Table 1C** for basic airport classification. Table 1E provides an analysis of the minimum annual activity levels the airport would need to meet to be classified as a basic airport.

TABLE 1E | Reclassification Analysis

Basic Airport Minimum Annual Activity	Probability of Meeting the Activity
Public-owned with 10 or more validated based aircraft	E45 currently has 7 based aircraft and is most likely to achieve a basic classification if based aircraft numbers increase to 10 or more.
Public-owned and located 30 nm or more from the nearest NPIAS airport	E45 is public-owned; however, it is located 15 nm from Columbia Airport (O22) and 22 nm from Mariposa-Yosemite Airport (MPI) and therefore does not meet this activity.
Owned by or serving a Native American community	E45 does not serve a Native American community.
Identified and used by the U.S. Forest Service, U.S. Marshals, U.S. Customs and Border Protection, or U.S. Postal Service; or has Essential Air Service	E45 has temporarily based U.S. Forest Service helicopters for firefighting staging in the past; however, it is not identified as a base airport used by the U.S. Forest Service and is therefore unlikely to meet this activity.
A new or replacement public-owned airport that has opened within the last 10 years	Not applicable
Unique circumstances related to special aeronautical use	Not applicable
nm = nautical miles	

Sources: Coffman Associates analysis; FAA National Based Aircraft Registry

The probability for reclassification of E45 to regain basic airport status is measured by two elements: (1) meeting one of the minimum basic airport activities listed in **Table 1E** and (2) meeting the essential airport characteristics from **Table 1A**. When considering the basic airport criteria, E45 is most likely to meet the activity relating to validated based aircraft. This minimum annual activity would require E45 to recognize at least 10 validated based aircraft on airport property. As previously discussed, the airport's current based aircraft count is seven, as of 2023. Unfortunately, there is no way the sponsor can directly control the activity level of based aircraft at the airport because aircraft are based at the discretion of



aircraft owners. Aircraft owners are likely to base their aircraft at airports that are close to their homes or businesses and at airports that provide competitive aviation services, such as hangar rentals and fuel. The second element to consider regarding the probability of reclassification is based on meeting the essential airports checklist. The airport sponsor's ability to meet this element is within its control, as the airport's infrastructure and safety standards are physical elements on airport property and may be improved.

It is recommended for the airport sponsor to take the following next steps. First, address the grant assurance noncompliance issues identified by the FAA in 2007 and 2012. AIP funding has been withheld (regardless of E45's NPIAS role) due to these issues and will continue to be withheld until the sponsor addresses them. Second, the sponsor should continue to address the safety and design standards issues related to the Caltrans permit and airport record inspection, as well as maintaining and improving (as appropriate) airport design and safety standards, in accordance with FAA AC 150/5300-13B, *Airport Design*. These steps will ensure Pine Mountain Lake Airport meets the essential airport characteristics defined by the FAA.



PINE MOUNTAIN LAKE AIRPORT (E45) PROPERTY REVIEW

Prepared by Coffman Associates

This section includes a review of all Pine Mountain Lake Airport (E45) properties, property rights, deeds, and easements. Residential through-the-fence (RTTF) access and other information related to the airport property are also discussed for a better understanding of the uniqueness of the airport property and associated operations/activities.

HISTORY OF AIRPORT PROPERTY ACQUISITION

Pine Mountain Lake Airport began as a private airport owned by Boise Cascade, LLC, a forest products company that developed the Pine Mountain Lake subdivision. In 1973, the airport property was deeded to Tuolumne County, which has operated the airport since. Residential homes/businesses in the Pine Mountain Lake subdivision border the airport property and have been provided with through-the-fence airport access from the associated properties prior to the county's acquisition. There are 49 residential parcels that share a border with the airport property and an additional 39 parcels that border a private taxiway loop north of the airport property which connects to the airport taxiway system. Due to the significant use of private airport access from residential homes and properties, the 1973 deed to the county included easements for aircraft access from some of these properties. Additionally, the deed included a "claw back" condition, which states that the grantor has the right to retake possession of the land if the property is not maintained or used exclusively as an airport. However, based on the County's research with regard to the Marketable Record Title Act of 1982, it considers this deed restriction unenforceable. Further explanation of the deeded easements associated with the airport property is included later in this report. A map of the airport property and surrounding parcels is included on **Exhibit 2A**. A summary of the easements and access granted to parcels bordering the airport property is included in **Table 2A** below.

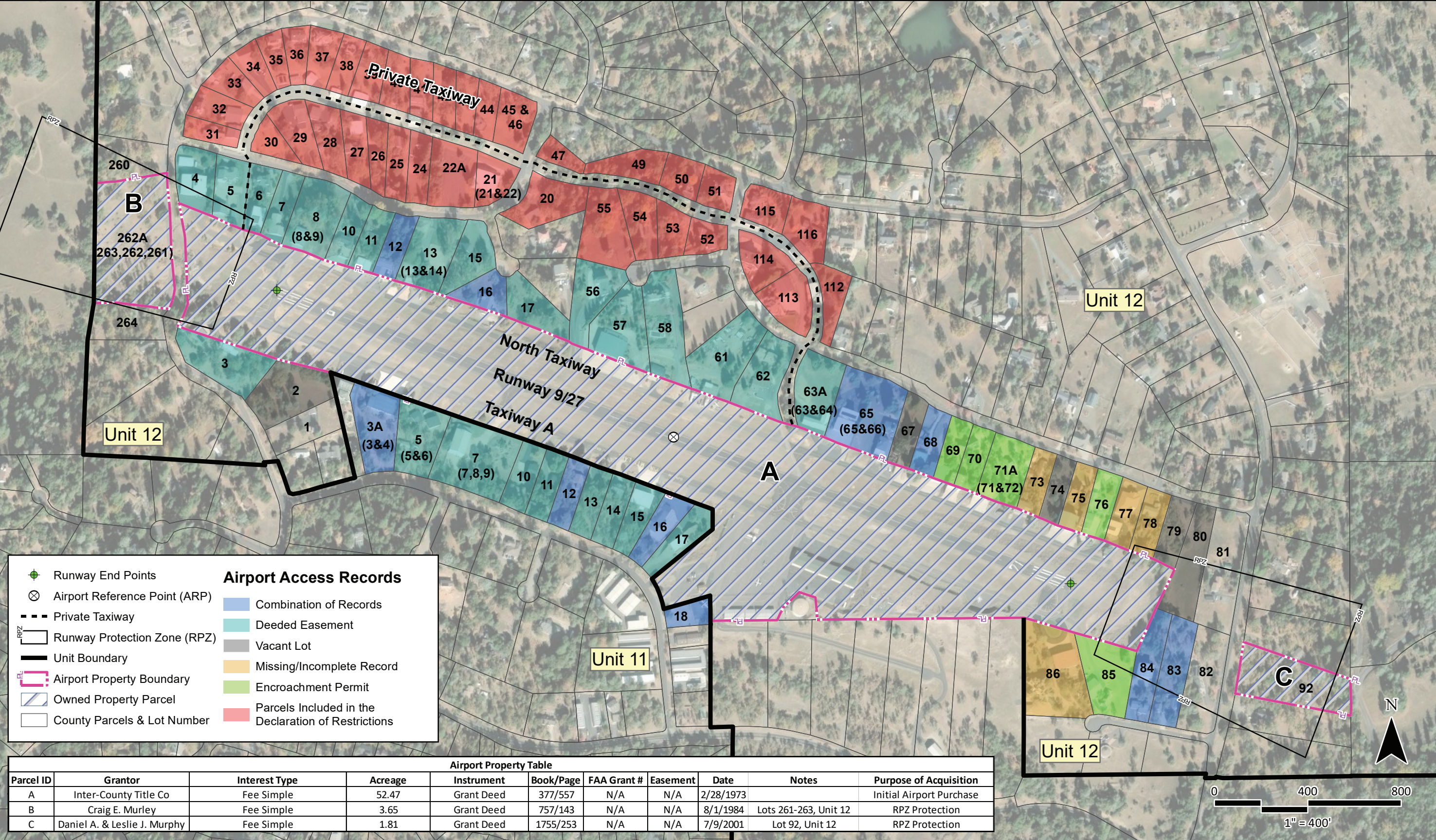
Table 2A is a summary of airport property that borders E45. Records from the Tuolumne County Assessor's Office and airport records were collected and reviewed to generate this summary of various deeds, easements, and permits associated with the airport. Included below are descriptions of the type of access a property has; the resolution or document number; and the permitted year the document, deed, or permit was completed. Most of the property adjacent to the airport has some record of encroachment permit documented; however, upon satellite imagery inspection, five lots appear to have private taxiways that encroach onto airport property, but records of encroachment were either not available from the county assessor, or the permit was incomplete.



TABLE 2A | Airport Property Easement and Access Summary

Unit	Lot	Access Type	Resolution, Permit Number, or Document	Permit Issue Year	Comments
11	3	Deeded Easement	Resolution 272-72	1973	
11	3A (3 & 4)	Deeded Easement, Encroachment Permit	Resolution 272-72, Resolution 171-77	1973, 2008	
11	5 (5 & 6)	Deeded Easement	Resolution 272-72	1973	
11	7 (7, 8, 9)	Deeded Easement	Resolution 272-72	1973	
11	10	Deeded Easement	Resolution 272-72	1973	
11	11	Deeded Easement	Resolution 272-72	1973	
11	12	Deeded Easement	Resolution 272-72	1973	
11	13	Deeded Easement	Resolution 272-72	1973	
11	14	Deeded Easement	Resolution 272-72	1973	
11	15	Deeded Easement	Resolution 272-72	1973	
11	16	Deeded Easement	Resolution 272-72	1973	
11	17	Deeded Easement	Resolution 272-72	1973	
11	18	Deeded Easement, Airport Aviation and Airspace Utilization Easement	Resolution 272-72, Vol. 611, Pages 404-407, Doc. 8390, Resolution 473-80	1973, 1980	
12	2				Lot appears vacant on satellite image. No encroachment.
12	3	Deeded Easement	Resolution 272-72	1973	
12	4	Deeded Easement	Resolution 272-72	1973	
12	5	Deeded Easement	Resolution 272-72	1973	
12	6	Deeded Easement	Resolution 272-72	1973	
12	7	Deeded Easement	Resolution 272-72	1973	
12	8	Deeded Easement	Resolution 272-72	1973	
12	10	Deeded Easement	Resolution 272-72	1973	
12	11	Deeded Easement	Resolution 272-72	1973	
12	12	Deeded Easement, Encroachment Permit	Resolution 272-72, Resolution 171-77	1973, 2008	
12	13	Deeded Easement	Resolution 272-72	1973	
12	15	Deeded Easement	Resolution 272-72	1973	
12	16	Deeded Easement, Encroachment Permit	Resolution 272-72, Resolution 171-77	1973, 2008	
12	17	Deeded Easement	Resolution 272-72	1973	
12	56	Deeded Easement	Resolution 272-72	1973	
12	57	Deeded Easement	Resolution 272-72	1973	
12	58	Deeded Easement	Resolution 272-72	1973	
12	61	Deeded Easement	Resolution 272-72	1973	
12	62	Deeded Easement	Resolution 272-72	1973	
12	63A	Deeded Easement	Resolution 272-72	1973	
12	64	Deeded Easement, Encroachment Permit	Resolution 272-72, Permit No. 2001-02	1973, 2001	
12	65 & 66	Deeded Easement, Encroachment Permit	Resolution 272-72, Permit No. 2000-02	1973, 2000	
12	67				Lot appears vacant on satellite image. No encroachment.
12	68	Encroachment Permit, Permission to Construct Private Taxiway	Vol. 833, Pages 415-417, Doc. No. 008201	1986, 2000	Permit from 2000 notes Lot 68; however, the handwritten parcel No. 93-250-08 indicates Lot 69.
12	69	Encroachment Permit	Permit No. 2011-1	2011	See above. Lots 68 & 69 may be owned by the same individual.
12	70	Encroachment Permit	Doc. No. 008202	2000	
12	71A (71 & 72)	Encroachment Permit	Permit No. 2002-01	2004	
12	73	Encroachment Permit Draft - not signed			Missing record of encroachment. Encroachment permit not completed.
12	74				Lot appears vacant on satellite image. No encroachment

(Continues)



This page intentionally left blank



TABLE 2A | Airport Property Easement and Access Summary (continued)

Unit	Lot	Access Type	Resolution, Permit Number, or Document	Permit Issue Year	Comments
12	75	Encroachment Permit Draft - not signed	Permit No. 2004-1		Missing record of encroachment. Encroachment permit not completed.
12	76	Encroachment Permit, Encroachment Permit	Permit No.91-1, Resolution 171-77	1991, 2008	
12	77				Missing record
12	78				Missing record
12	79				Lot appears vacant on satellite image. No encroachment.
12	80				Lot appears vacant on satellite image. No encroachment.
12	83	Airport Aviation and Air Space Utilization Easement	Vol. 1241, Pages 77-80, No. 21359	1993	
12	84	Airport Aviation and Air Space Utilization Easement	Vol. 804, Pages 504-507, No. 14371, Doc. No. 003109	1985, 2001	
12	85	Encroachment Permit	Permit No. 2000-04	2000	
12	86	Application for Encroachment			Missing record of encroachment. Encroachment permit not completed.

Sources: Tuolumne County Assessor's Office records; Coffman Associates analysis

PRIMARY AIRPORT PROPERTY

The primary airport property is comprised of Parcel A (shown on **Exhibit 2A**), which encompasses 52.47 acres and includes E45's runway, taxiways, apron, and aircraft storage areas. Parcel A is the original land deeded to the county in 1973 and includes many easements for utilities, as well as aircraft access from adjacent residential properties, which are discussed in later sections. Parcels B and C constitute vacant property within portions of the runway protection zones (RPZs) associated with each end of Runway 9-27. The RPZs serve to keep property and airspace clear of arriving and departing aircraft. Parcels B and C are owned by the county, which acquired them in 1984 and 2001, respectively. Parcel B is situated west of the main airport property and encompasses 3.65 acres, which is formally three vacant residential lots (261-263; now shown as Lot 262A). Parcel C is also a vacant lot on 1.81 acres east of the main airport property.

NORTH TAXIWAY

The parallel taxiway north of Runway 9-27 is located on airport property but is maintained by the residential homeowners who have taxiway easements to access the airport property. Records identifying the ownership of this taxiway are contradictory and it is unclear whether the taxiway is county-owned or privately owned. This taxiway is labeled as a "Private Taxiway" on the previous Airport Layout Plan (ALP), dated December 1, 2006. The previous airport master plan from 2006 also states: "The parallel taxiway on the north side of the runway was privately constructed and is maintained by the Pine Mountain Lake residential lots located along the taxiway." Previous encroachment permits include language permitting permit holders to construct a private taxiway to the "county owned taxiway located on the north side of Runway 09/27." In another permit, the language states: "The taxiway pavement is to be bonded to the existing County or private taxiway pavement."



DEEDED EASEMENTS

As mentioned in the history of Tuolumne County's acquisition of the airport property, a number of easements were included in the 1973 deed that grant perpetual airport access for bordering residential properties. The 1973 deed includes easements for aircraft access to and from the following lots:

- Pine Mountain Lake Unit No. 11
 - Lots 3-18
- Pine Mountain Lake Unit No. 12
 - Lots 3-17
 - Lots 56-66

The aircraft easements included in this deed permit the lots mentioned above to construct 50-foot-wide aircraft taxiways to access the airport. Other lots adjacent to the airport property which were not included in the original 1973 deed were required to apply for encroachment permits to construct taxiways on airport property. The records of encroachment permits are discussed later in this report and are included in **Table 2A** and **Exhibit 2A**.

ENCROACHMENT PERMITS

Conditional encroachment permit records that were issued after 1973 grant the requested parties permission to construct private taxiways to the taxiways located on the north and south sides of Runway 9-27. The permits were signed by the permittees (property owner) and the airport director. Each permit details the requirements of construction and the conditions of the permit.

Construction requirements outlined in the permit described the cross-slope grading requirements the connector taxiway must meet according to a *Taxiway Connection Detail* and includes restrictions that keep the traveled right-of-way for the existing taxiway to remain clear of construction operations during installation.

Conditions of the permit include clauses for construction standards, maintenance, revocation, airport operations, and other requirements the permittee must meet and uphold.

Upon aerial inspection, Pine Mountain Lake Unit No. 12 Lots 73, 75, 77, 78, and 86 appear to have connector taxiways constructed from private hangars to taxiways located on airport property; however, incomplete and/or no records were on file with the Tuolumne County Assessor's Office. These five lots are not included in the original 1973 deed and would need encroachment permits to allow for construction on airport property.



AIRPORT AVIATION AND AIRSPACE UTILIZATION EASEMENTS

Aviation and airspace utilization easements are applied to residential properties on the east end of the airport to protect the airspace within the RPZ. Pine Mountain Lake Unit No. 11 Lot 18 and Unit No. 12 Lots 83 and 84 have perpetual aviation and airspace easements. The aviation and airspace utilization easements identify that the airspace above the property will have direct and indirect effects on airport operations, including noise, light emissions, vibrations, air currents, and aviation activities. These easements waive the liability of the grantee (Tuolumne County) for damage to property, persons, animals, and diminution in property value as a result of airport and aircraft operations that occur over the easement.

DECLARATION OF RESTRICTIONS

In 1970, prior to the sale of the airport property to the county, Boise Cascade Recreation Communities made a declaration of restrictions for Pine Mountain Lake Unit No. 12 regarding an easement for a private taxiway. Lots 5, 6, 21-46, 20, 47, 49-55, 114, 115, 116, 62, and 63 of Unit No. 12 are subject to a 50-foot-wide taxiway easement. This private taxiway is shown on **Exhibit 2A** and forms a loop north of the airport through the residential lots listed above. The private taxiway connects to the north taxiway system on airport property in two locations: north and west of the runway between Unit No. 12 Lots 5 and 6, and approximately midfield and north of the runway between Lots 62 and 63A. The restrictions limit the use of the taxiway easement for airplane sizes up to and including general executive twin-engine aircraft.

SUMMARY

Pine Mountain Lake Airport's property includes many easements and encroachments relating to its original development as a private airport within a subdivision. The original airport deed ensures that the property remains used for aviation purposes only, while also granting easements to the airport from adjacent residential properties. Properties adjacent to airport property with a desire to access the airport have been able to apply for encroachment permits which grant access and authorization to construct taxiways connecting to the taxiway system on airport property. The properties along the private taxiway loop north of the airport property are subject to an easement for the private taxiway system that connects with the airport property in two locations. Currently, 79 properties have records allowing access to the airport or allowing private taxiway development connecting to airport property. Five properties have missing or incomplete records at the time of this study.

This page intentionally left blank



PINE MOUNTAIN LAKE AIRPORT (E45) INVENTORY OF AIRPORT INFRASTRUCTURE

Prepared by Kimley Horn

PAVEMENT ASSESSMENT

Overall, most of the pavements at the Airport have manifested distress types primarily attributed to both load and climate related stress mechanisms. Structural stresses consist of alligator cracking and rutting which was observed near the hangars closest to the wind cone; this area would be a candidate for full depth pavement reconstruction. The rest of the Airport showed raveling and block cracking. These areas can be maintained by sealing the cracks to prevent water intrusion, and then overlaying with an emulsified asphalt slurry seal or mill the existing pavement and fill with asphalt concrete pavement. Pavement maintenance is shown to extend the life of existing pavement for up to eight years, depending on the maintenance option selected. Portions of the parallel taxiway north of the runway were in no need of any maintenance.

ELECTRICAL ASSESSMENT

The airfield lighting system has reached the end of its serviceable life. The following improvements are recommended as a minimum to bring the airfield lighting system up to the latest FAA standards and minimum operating conditions.

- The runway edge lighting system consists of deteriorating elevated quartz runway edge lights which have reached the end of their usable life. It is assumed new cable has not been pulled since the last runway edge light installation and likely outputs poor Megger readings. Airfield pull boxes appear to be old and cracked.

It is recommended that all existing electrical pull boxes be replaced with new concrete load rated boxes or with L-867 base cans at every conduit crossing for ease of maintenance and to promote the longevity of the airfield lighting system. The airport does not currently have any airfield signage. It is also recommended that new conduit and cabling be installed between edge lights and a new homerun duct bank with spares be installed for future improvement projects.

The existing three-step constant current regulator (CCR) is an older Crouse-Hinds model which appears to be more than thirty (30) years old. The existing CCR is at the end of its usable life and should be replaced.

- The Airport currently employs a VASI on Runway 9 and a 2-box PAPI on Runway 27. It is recommended that both runways be equipped with a new 2-box voltage driven PAPI system. This new system would include new conduit/duct banks and cabling for the new equipment from the airfield lighting vault.



BUILDING ASSESSMENT

A general building assessment was conducted on both the pilot's lounge and the hangars on the south side of the main apron. The hangars in the center of the apron were developed using a ground lease, and it is assumed maintenance costs are the responsibility of the tenant. The general assessment of the hangars is that they are past their expected lifespan but are functional and may require budgeting of maintenance costs for continued use but would not require a reconstruction to serve their purpose.



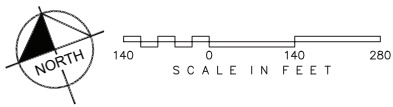
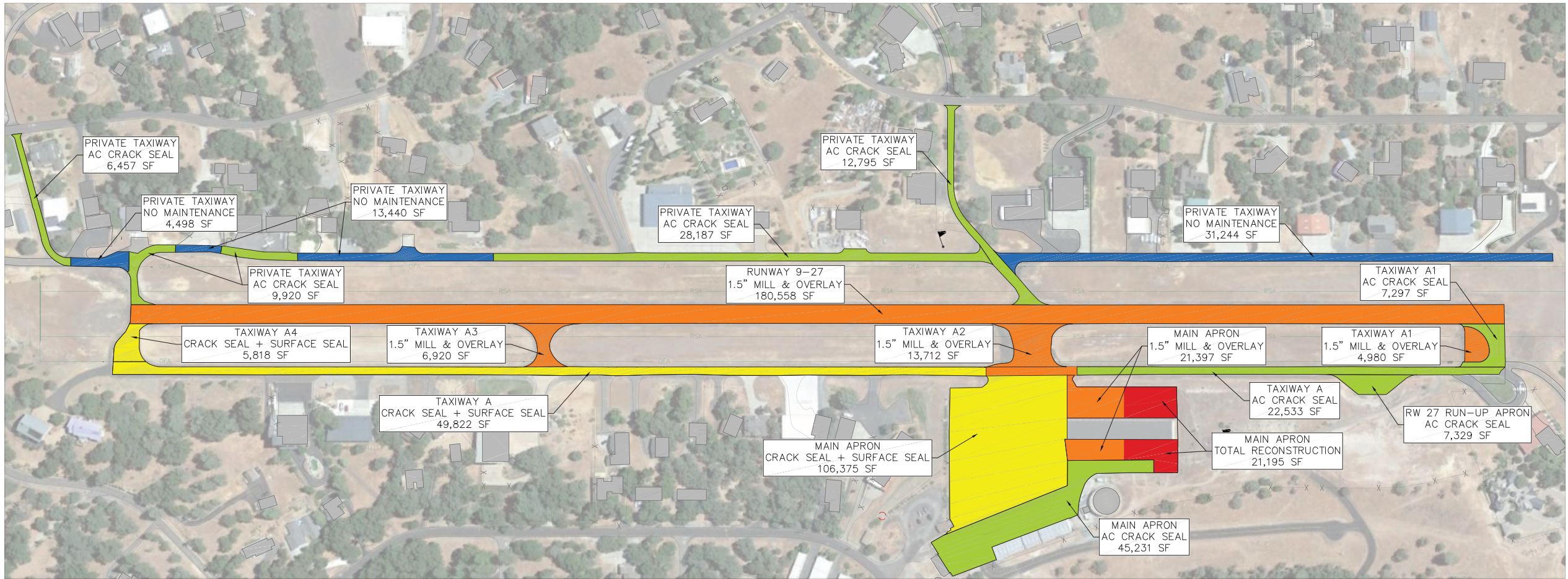
PINE MOUNTAIN LAKE	
CONCEPTUAL OPINION OF PROBABLE COST	8/7/2023
Please note, the opinions of probable costs provided herein are based on the information known to the Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from these opinions of probable cost. Please note, the pavement condition analysis summarized here was conducted at the network level and is not meant to replace the engineering and planning judgment required for project-level analysis and design work. Projects identified as needing work in the near-term should be evaluated by the County on a case-by-case basis to ensure that the network-level decisions appropriately translate to the individual project.	
Assumptions	
1	This cost estimate is a Rough Order of Magnitude Cost Estimate and does not encompass all costs related to the construction of these projects.
2	FAA specifications of materials were used to perform this cost estimate.
3	No geotechnical assessment was performed for this project. A pavement section of 3" Asphalt Surface Course, 6" Aggregate Base, and 12" Lime Treated Subgrade was assumed.
4	The costs shown below do not account for soft costs such as mobilization, contractor quality control plan, or airfield control and other items.
5	Storm Drain Improvements are not included in this estimate but will be necessary if the threshold of reconstructed pavements is reached.
6	Stated costs are construction costs only and do not include design costs.
7	The electrical costs do not propose improvements on the shed for the electrical vault.
8	Asphalt Rehabilitation consists of a 1.5" mill and overlay.
9	No updates to geometry are included in this cost estimate.
10	No phasing costs are included in the cost estimate.
11	Costs were developed using historical bids and adjusted for 2023 dollars.
12	Construction for Electrical Assessment Summary Items 1 and 2 should occur in tandem.

PAVEMENT ASSESSMENT		
Summary Items	Element Description	Summary Totals
1	Runway 9-27 (See Figure C1.0)	\$ 465,000.00
2	Taxiway A (See Figure C1.0)	\$ 50,000.00
3	Taxiway A1, A2, A3, A4 (See Figure C1.0)	\$ 69,000.00
4	Private Taxiway (See Figure C1.0)	\$ 13,000.00
5	Main Apron (See Figure C1.0)	\$ 289,000.00
	Subtotal	\$ 886,000.00
	Contingency (25%)	\$ 221,500.00
	Pavement Improvements	\$ 1,107,500.00

ELECTRICAL ASSESSMENT		
Summary Items	Element Description	Summary Totals
1	Runway Lighting and Signage Improvements (See Figure E1.0)	\$ 1,038,000.00
2	Airfield Lighting Vault (ALV) Improvements (See Figure E1.0)	\$ 41,000.00
3	Precision Approach Path Indicators (PAPI) Improvements (See Figure E1.1)	\$ 212,000.00
	Subtotal	\$ 1,291,000.00
	Contingency (25%)	\$ 322,750.00
	Electrical Improvements	\$ 1,613,750.00

BUILDING ASSESSMENT		
Summary Items	Element Description	Summary Totals
1	Pilot's Lounge	\$ 10,000.00
2	Hangar (Buildings 6,7,8,9 on Airport Layout Plan [ALP])	\$ 20,000.00
	ANTICIPATED YEARLY MAINTENANCE COSTS*	\$ 30,000.00
*A general building assessment was conducted on both the pilot's lounge and the hangars on the south side of the main apron. The hangars in the center of the apron were developed using a ground lease, and it is assumed maintenance costs are the responsibility of the tenant. The general assessment of the Hangars is that they are past their expected lifespan but are functional and may require budgeting of maintenance costs for continued use but would not require a reconstruction to serve their purpose.		

This page intentionally left blank



Kimley»Horn
C 2023 KIMLEY-HORN AND ASSOCIATES, INC.
1201 3RD AVE SUITE #2500
SEATTLE, WASHINGTON 98101
(206) 607-2600

CURRENT PAVEMENT MAINTENANCE AND REHABILITATION NEEDS

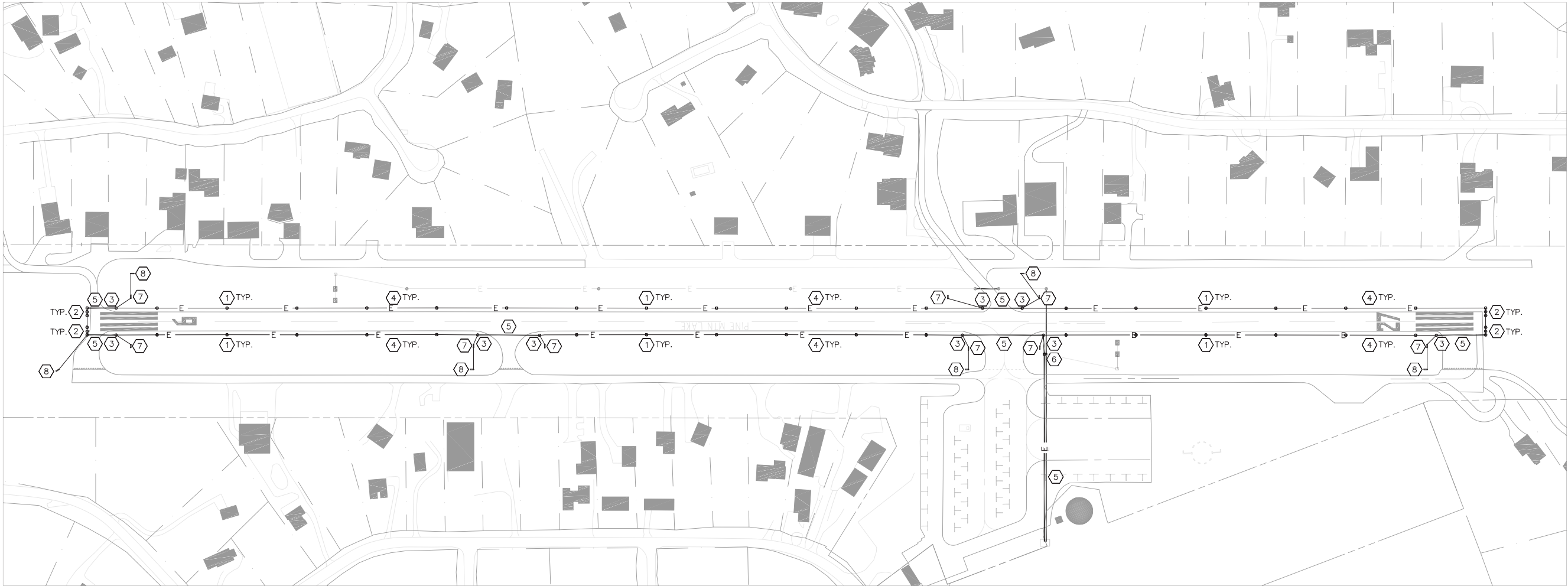
FIGURE
C1.0

C:\Users\Connor.Evanski\Desktop\Aviation\Pine Mountain Lake\CAD\Plansheets\Pavement Exhibit.dwg



**RUNWAY LIGHTING AND SIGNAGE
SCOPE OF WORK EXHIBIT**

FIGURE
E1.0



FAA ADVISORY CIRCULAR (AC) REFERENCES FOR RUNWAY EDGE LIGHT LAYOUT

- 150-5340-30J
- 2.3.1.2.1: RUNWAY EDGE LIGHTS TO BE LOCATED ON A LINE PARALLEL TO THE RUNWAY CENTERLINE 1- FT. OFFSET FROM EDGE OF PAVEMENT STARTING FROM THE RUNWAY END/THRESHOLD LIGHTS. LONGITUDINAL SPACING SHALL NOT EXCEED 200 FT. BETWEEN FIXTURES. RUNWAY EDGE LIGHTS ARE UNIFORMLY SPACED AND SYMMETRICAL ABOUT THE RUNWAY CENTERLINE.
- 2.3.1.2.2: FOR RUNWAYS WITH MEDIUM INTENSITY RUNWAY LIGHTS WHERE THE CONFIGURATION OF THE RUNWAY INTERSECTION DOES NOT ALLOW FOR THE MATCHING OF THE RUNWAY EDGE LIGHTS ON OPPOSITE SIDES OF THE RUNWAY TO BE MAINTAINED, THE DISTANCE BETWEEN LIGHT UNITS ON THE SAME SIDE OF THE RUNWAY MUST NOT EXCEED 400 FT.
- 2.3.2.2.1: LOCATION AND SPACING OF DISPLACED THRESHOLD AND RUNWAY END LIGHTS.
- 2.3.2.2.2: LOCATION AND SPACING OF DISPLACED THRESHOLD LIGHTS.
- FIGURE A-5: RUNWAY END LIGHTS AND RUNWAY START LIGHTS.

FAA ADVISORY CIRCULAR (AC) REFERENCES FOR SIGN LAYOUT

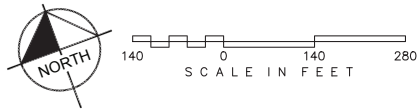
- 150-5340-18F
- TABLE 1-1: SIGN SIZE 1 TO DETERMINE WINDOW OF PERPENDICULAR DISTANCE OF SIGN FROM EDGE OF PAVEMENT TO BE 10-20 FT.
- 1.3.1: HOLDING POSITION SIGN & TAXIWAY LOCATION SIGN AT THE HOLDING POSITION LINE ON ANY TAXIWAY THAT PROVIDES ACCESS TO A RUNWAY.
- 1.3.4: TAXIWAY DIRECTION SIGNS PRIOR TO EACH TAXIWAY TO INCLUDE TAXIWAY DESIGNATION AND DIRECTION ARROW.
- 1.3.5: RUNWAY EXIT SIGN TO BE LOCATED ON EACH END OF A RUNWAY.
- 150-5300-13A
- FIGURE 4-16: USE TDG-1A DESIGN CLASSIFICATION BASED ON CESSNA AIRCRAFT SIGN SPECIFICATION.
- TABLE 4-1: BASED ON TDG-1A AND ADG 1 CLASSIFICATION DETERMINED FROM FIGURE 4-16 TO DETERMINE SIGN DISTANCE FROM 'TAXIWAY CENTERLINE TO FIXED OR MOVABLE OBJECT' TO BE 44.5 FT.

ELECTRICAL SCOPE OF WORK

- 1 INSTALL NEW MEDIUM INTENSITY L-861(L) ELEVATED RUNWAY EDGE LIGHT WITH NEW ISOLATION TRANSFORMER AND SPLICE KIT ON NEW L-867 BASE CAN.
- 2 INSTALL NEW MEDIUM INTENSITY L-861E(L) ELEVATED RUNWAY END LIGHT WITH NEW ISOLATION TRANSFORMER AND SPLICE KIT ON NEW L-867 BASE CAN.
- 3 INSTALL NEW L-867 BASE CAN WITH BLANK STEEL COVER.
- 4 INSTALL NEW 1-2" SCH. 40 PVC DIRECT BURIED CONDUIT.
- 5 INSTALL NEW 2-2" SCH. 40 PVC CONCRETE ENCASED CONDUIT. SAWCUT EXISTING PAVEMENT FOR TRENCH AND REPAIR EXISTING PAVEMENT TO SURFACE MATCHING EXISTING ASPHALT PAVING SECTION.
- 6 INSTALL NEW H20 LOAD RATED CONCRETE HAND HOLE.
- 7 INSTALL NEW SIZE 1, 2 MODULE LED GUIDANCE SIGN ON NEW CONCRETE FOUNDATION.
- 8 INSTALL NEW SIZE 1, 3 MODULE LED GUIDANCE SIGN ON NEW CONCRETE FOUNDATION.

LEGEND

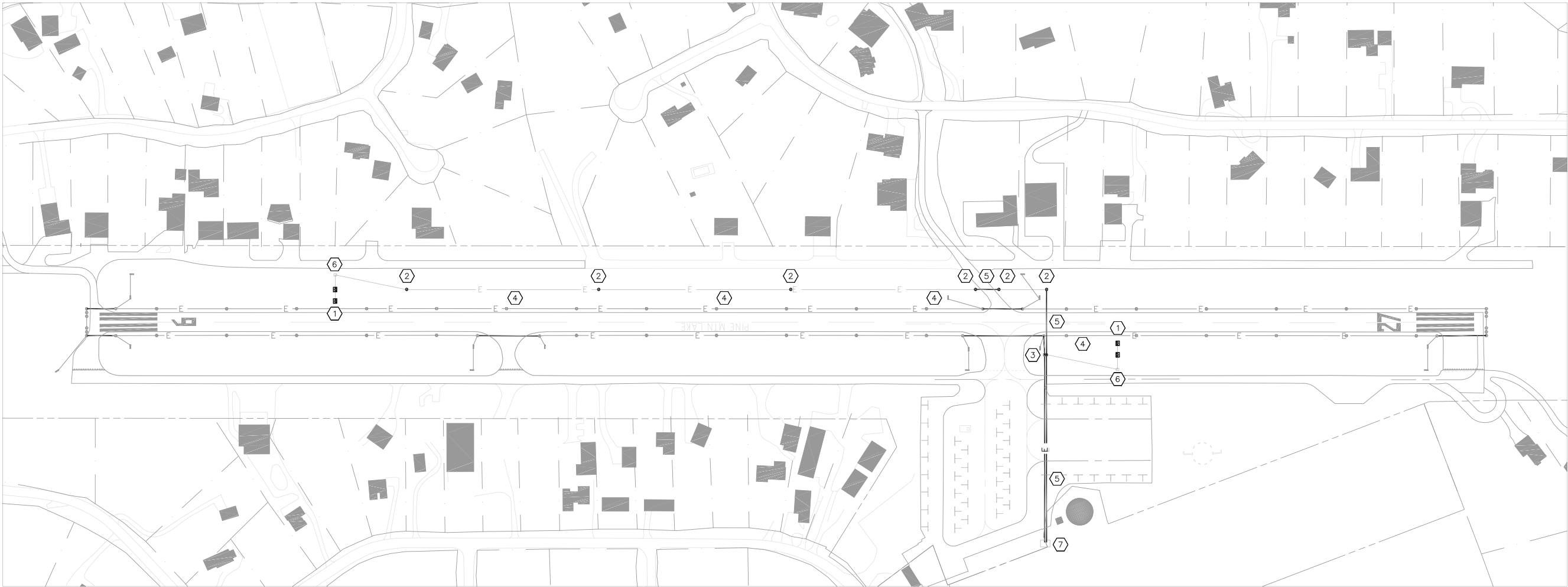
- 1 PROPOSED L-861 ELEVATED LED MEDIUM INTENSITY OMNIDIRECTIONAL RUNWAY EDGE LIGHT
- 2 PROPOSED L-861E ELEVATED LED MEDIUM INTENSITY THRESHOLD LIGHT
- 3 PROPOSED L-867 BASE CAN
- 4 PROPOSED LED AIRFIELD GUIDANCE SIGN
- 5 PROPOSED 1-2" SCH. 40 PVC DIRECT BURIED CONDUIT AND CABLING
- 6 PROPOSED 2-2" SCH. 40 PVC CONCRETE ENCASED CONDUIT AND CABLING





RUNWAY PAPI SCOPE OF WORK EXHIBIT

FIGURE
E1.1



FAA ADVISORY CIRCULAR (AC) REFERENCES FOR RUNWAY PAPI

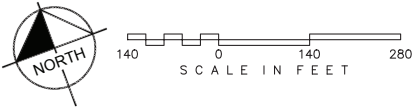
- 150-5340-30J
- 7.5.4.2.2: PLACE THE PAPI RUNWAY REFERENCE POINT (RRP) AT THE SAME DISTANCE FROM THE THRESHOLD AS THE TOUCHDOWN POINT OF THE ILS/GLS/LPV GLIDE PATH WITH A TOLERANCE OF 30 FT (10 M).
- 7.5.4.3.4: THE STANDARD VISUAL GLIDESLOPE FOR PAPI IS 3°. FOR NON-JET RUNWAYS, THE GLIDESLOPE MAY BE INCREASED TO 4° TO PROVIDE OBSTACLE CLEARANCE.
- 7.5.4.4.4: FOR AN L-881 PAPI (TWO BOX), THE LOWEST ON COURSE SIGNAL IS FOR THE UNIT FARTHEST FROM THE RUNWAY.
- 7.5.4.4.7: POSITION AND AIM THE PAPI SO THAT THERE IS NO RISK OF AN OBSTRUCTION PENETRATING THE OCS. PERFORM A SITE SURVEY TO VERIFY THAT AN OBSTACLE WILL NOT PENETRATE THE OCS.
- 7.5.4.5.1: THE MINIMUM THRESHOLD CROSSING HEIGHT VARIES WITH THE HEIGHT GROUP OF AIRCRAFT THAT PRIMARILY USE THE RUNWAY.

ELECTRICAL SCOPE OF WORK

- 1 INSTALL NEW L-881 2 BOX PAPI SYSTEM INCLUDING TRANSFORMERS AND RACK MOUNTED EQUIPMENT.
- 2 INSTALL NEW L-867 BASE CAN WITH BLANK STEEL COVER.
- 3 INSTALL NEW H20 LOAD RATED CONCRETE HAND HOLE.
- 4 INSTALL NEW 1-2" SCH. 40 PVC DIRECT BURIED CONDUIT.
- 5 INSTALL NEW 2-2" SCH. 40 PVC CONCRETE ENCASED CONDUIT. SAWCUT EXISTING PAVEMENT FOR TRENCH AND REPAIR EXISTING PAVEMENT TO SURFACE MATCHING EXISTING ASPHALT PAVING SECTION.
- 6 INSTALL NEW UNISTRUT RACK MOUNTED PAPI POWER AND CONTROL CABINET, RADIO, AND STEP DOWN TRANSFORMER.
- 7 INSTALL NEW STEP UP TRANSFORMERS, PAPI FEEDER BREAKERS, AND POWER FEEDERS FOR NEW PAPIS.

LEGEND

-  PROPOSED L-881 PAPI
-  PROPOSED L-867 BASE CAN WITH BLANK STEEL COVER
-  PROPOSED H20 LOAD RATED CONCRETE HANDHOLE
-  PROPOSED 1-2" SCH. 40 PVC DIRECT BURIED CONDUIT AND CABLING
-  PROPOSED 2-2" SCH. 40 PVC CONCRETE ENCASED CONDUIT AND CABLING



This page intentionally left blank



TUOLUMNE COUNTY AIRPORTS ASSESSMENT

Prepared by Aviation Management Consulting Group

January 5, 2024
Kim MacFarlane, P.E.
Director of Public Works
Tuolumne County
2 South Green Street
Sonora, California 95370-4618

RE: Tuolumne County Airports Assessment

Dear Kim:

This report conveys Aviation Management Consulting Group's (AMCG's) observations, opinions, findings, and recommendations relating to the airport assessment of Columbia Airport and Pine Mountain Lake Airport (County Airports) for Tuolumne County.

AMCG evaluated the planning, development, operations, finances, and management of the County Airports to develop short-term and long-term recommendations that, in AMCG's opinion, are most consistent with a best practices approach considering the circumstances that exist at the County Airports and the conditions that exist in the markets as of the effective date of this report. In addition to the short-term and long-term recommendations, AMCG outlined current initiatives in process at the County Airports.

AMCG is pleased to have been called on to conduct this analysis and provide the associated recommendations. Please contact me if you have any questions pertaining to the findings or opinions conveyed in this report.

Helping your aviation management excellence,

David C. Benner, C.M.
Managing Consultant
AMCG

Scotty C. Malta, A.A.E., C.A.E., Capt. USAF (Ret)
Consultant
AMCG



I. EXECUTIVE SUMMARY

II. INTRODUCTION

- A. Scope of Work
- B. Project Approach

III. SPONSOR AND MANAGEMENT BACKGROUND

- A. Airport Sponsor
- B. Airport Management
- C. Airports Division Employees
- D. Airports Division Equipment

IV. COLUMBIA AIRPORT BACKGROUND

- A. Community Overview
 - 1. Geographic Location
 - 2. Demographics
 - 3. Business and Industry
 - 4. Economic Factors
 - 5. Climate
- B. Airport Overview
 - 1. Airport Description
 - 2. Airport Facilities
 - 3. Airport Operations
 - 4. Based Aircraft
 - 5. Commercial Operators and Non-Commercial Tenants
 - 6. Non-Aeronautical and Campground Overview
- C. FBO Overview
 - 1. FBO Current Situation
 - 2. FBO Lease Agreement
 - 3. FBO Property
 - 4. FBO Employees
 - 5. FBO Equipment

V. PINE MOUNTAIN LAKE AIRPORT BACKGROUND

- A. Community Overview
 - 1. Geographic Location
 - 2. Demographics
 - 3. Business and Industry
 - 4. Economic Factors
 - 5. Climate
- B. Airport Overview
 - 1. Airport Description
 - 2. Airport Facilities
 - 3. Airport Operations



4. Based Aircraft
5. Commercial Operators and Non-Commercial Tenants
6. Through-the-Fence Activities
7. FAA Non-Compliance
- C. FBO Overview
 1. FBO Current Situation
 2. FBO Lease Agreement
 3. FBO Property
 4. FBO Employees
 5. FBO Equipment

VI. IMMEDIATE RECOMMENDATIONS

- A. Resolve Non-Compliance Items (Pine Mountain Lake Airport)
- B. Airport Rent Study (Both Airports)
- C. Through-the-Fence Access Agreement (Pine Mountain Lake Airport)
- D. Airport Ownership (Pine Mountain Lake Airport)

VII. SHORT-TERM RECOMMENDATIONS

- A. Property Line and North Taxiway Status (Pine Mountain Lake)
- B. Agreement Compliance Review (Columbia Airport)
- C. Identified CIP Projects (Columbia Airport)
- D. Identified CIP Projects (Pine Mountain Lake Airport)
- E. Airport Layout Plans (Both Airports)
- F. Rules and Regulations (Both Airports)
- G. Minimum Standards (Both Airports)
- H. Annual Hangar Inspection Protocols (Both Airports)
- I. Airport Master Plan (Pine Mountain Lake Airport)

VIII. LONG-TERM RECOMMENDATIONS

- A. Update Land Use and Compatibility Plan (Both Airports)
- B. Facility Maintenance Program (Both Airports)
- C. Electrical Plan (Pine Mountain Lake Airport)
- D. Pavement Maintenance Program (Both Airports)
- E. Irrigation Plan (Columbia Airport)
- F. Security Enhancements (Both Airports)
- G. Airport Signage Program (Both Airports)
- H. Hangar/Helipad Development Feasibility Study (Columbia Airport)
- I. Instrument Approach Enhancements (Columbia Airport)

IX. APPENDIX

- A. Acronyms and Abbreviations
- B. Definitions



I. EXECUTIVE SUMMARY

Scope of Work:

This report conveys AMCG's observations, opinions, findings, and recommendations relating to the airport assessment of Columbia Airport (O22) and Pine Mountain Lake Airport (E45).

Table 1 – Assessment Recommendations

Airport	Recommendation	Details
Immediate	E45 Resolve Non-Compliance Items	Resolve non-compliance items identified by the California State Department of Transportation
	Both Airport Rent Study	Implement market-based aeronautical rental rates for certain land and improvements (based on <i>Airport Rent Study</i>)
	E45 Through-the-Fence Access Agreement	Develop and finalize TTF access agreement with appropriate rents and fees
	E45 Airport Ownership	Finalize ownership decision and commitment to support future operation and maintenance of Airport
Short-Term Recommendations	E45 Property Line and North Taxiway Status	Determine official ownership and maintenance protocols of North Taxiway
	O22 Agreement Compliance Review	Organize and review existing agreements to ensure accuracy of expiration dates, reversion protocols, rent basis, and payment status
	O22 Identified CIP projects	Complete AWOS replacement, repaint runway and taxiway markings, rubber build-up removal, and transition VASI to PAPI
	E45 Identified CIP projects	Complete AWOS design and construction, runway rehabilitation design, aircraft parking apron rehabilitation design
	Both Airport Layout Plans	Update to identify necessary setback areas, property boundaries, and encroachments
	Both Rules and Regulations	Develop contemporary <i>Rules and Regulations</i> to protect the health, safety, interest, and general welfare of the public and Airport users
	O22 Minimum Standards	Develop contemporary <i>Minimum Standards</i> to promote high quality commercial aeronautical activities, orderly development, and economic health
	Both Annual Hangar Inspection Protocols	Conduct annual hangar inspection (with Fire personnel) to ensure compliance
	E45 Airport Master Plan	Update <i>Airport Master Plan</i> no later than 2026
Long-Term Recommendations	Both Comprehensive Land Use Plan	Update <i>Land Use Compatibility Plan</i> to reflect changes to on-airport uses (aeronautical and non-aeronautical) and surrounding off-airport uses
	Both Facility Maintenance Program	Assess facility maintenance and equipment to identify future needs and repair hangars (roof, doors, floors, transition strip) and remediate drainage issues
	E45 Electrical Plan	Develop and finalize electrical plan (circuit board, VASIs, etc.)
	Both Pavement Maintenance Program	Engage engineering firm to conduct airfield safety inspection, address deficiencies, and implement pavement maintenance program
	O22 Irrigation Plan	Update and implement irrigation plan for Runway 11/29 (grass strip)
	Both Security Enhancements	Enhance security controls (fencing, access, lighting)
	Both Airport Signage Program	Develop a signage program to include safety, commercial, directional, and monument signage
	O22 Hangar/Helipad Development Feasibility Study	Conduct a market assessment/feasibility study (including installation of necessary utilities) for future hangar and/or helipad development
	O22 Instrument Approach Enhancements	Develop enhanced instrument approach to support night operations



II. INTRODUCTION

A. Scope of Work

Aviation Management Consulting Group (AMCG) conducted an airport assessment (Assessment) of Columbia Airport and Pine Mountain Lake Airport (County Airports) for Tuolumne County (County). The primary goal of the Assessment is to develop a series of recommendations intended to enhance the County Airports' overall planning, operational, financial, and managerial performance while positioning the County Airports for future improvements. Additionally, the Assessment provides a basis to recommend the most direct path forward while addressing concerns identified by the County.

AMCG's observations, opinions, findings, and recommendations are consistent with a best practices approach, considering the circumstances that exist at the County Airports and the conditions that exist in the markets.

B. Project Approach

AMCG conducted an evaluation and assessment of the planning, development, operations, finances, and management of the County Airports. Specifically, AMCG reviewed historical documentation and current practices related to the (1) airport organization, (2) rents and fees, (3) airport planning, management, and compliance documents, (4) airport operations, (5) airport airside land infrastructure, (6) aviation products, services, and facilities, (7) airport facilities, (8) airport and community environment, and (9) airport finances. The most significant observations, opinions, and findings, detailed in this report, consist of the top areas (in the short-term and long-term) in priority order. Additionally, AMCG identified current initiatives in process for the Airports.

AMCG's recommendations are designed to provide a foundation for future improvements at the County Airports. **It is important to note that AMCG conducted an assessment focused primarily on airport management and finances and secondarily on airport operations, planning, and development.**

To achieve the scope of work, representatives of AMCG (David Benner – Managing Consultant and Scotty Malta – Consultant) conducted a site visit from Monday, June 12th, 2023 – Wednesday, June 14th, 2023, which included the following:

- Meetings with County representatives and Airport management/staff.
- Tour of the County Airports with Airport management.
- Meetings with aviation businesses and tenants at each County Airport.

During the on-site meetings, current practices, challenges, and issues were discussed, including, but not limited to, the following:

- Airport operations and maintenance practices
- Staff roles and responsibilities
- Mission and vision for the County Airports
- Value of the County Airports to the community and region
- Strengths, weakness, opportunities, and threats for each County Airport



- Goals and aspirations for the County Airports
- Commercial aeronautical operators and major users of the County Airports
- Management and facility improvements
- Current and future land use
- Marketing plan

To complete the Assessment, AMCG reviewed all available documents provided by the County. The most pertinent and contemporary documents include the following:

General:

- Airport Land Use Compatibility Plan (dated 01/22/2023)
- Airport Lease Information (dated 05/02/2023)
- Airports Fee Schedule (2018 – 2023)
- Asset Inventory (03/22/2021)
- List of Vendors (04/26/2023)
- Minimum Standards
- Organizational Charts (dated December 2022)
- Public Works Department Organization Chart (dated December 2022)
- The History of Aviation in Tuolumne County
- Tuolumne County Airports Policies and Procedures for Hangars, Tiedowns and Waiting Lists (dated 12/15/2015)
- Tuolumne County Grand Jury Airports Report (dated 06/30/2023)
 - Response to Grand Jury Report (dated 08/15/2023)
- Tuolumne County Ordinance Code Title 17 – Zoning
- Tuolumne County Ordinance Code Title 18 – Airports

Columbia Airport:

- Airport Capital Improvement Program (2023 – 2028)
- Airport Layout Plan (dated July 2019)
- Airport Lease Information (dated 05/02/2023)
- Cal Fire Attack Base
- Capital Improvement Projects (2023 – 2032)
- Hangar Wait List (dated April 2023)
- Mitigation Study
- Multiple Airport Rental Statements
- National Based Aircraft Inventory Program (dated 07/28/2016)



Pine Mountain Lake Airport:

- Airport Land Use and Compatibility Plan (dated 01/22/2003)
- Airport Layout Plan (dated 12/01/2006)
- Airport Master Plan (dated 11/07/2006)
- Capital Improvement Projects (2023 – 2032)
- Corporation Grant Deed – Inter-County Title Company (dated 02/28/1973)
- Declaration of Restrictions (dated 08/14/1970)
- FAA Letter – Non-Complaint Letter (dated 08/39/2007)
- FAA Letter – Robin Hunt (dated 03/29/2012)
- Multiple Airport Rental Statements
- Multiple Deeds of Access
- Multiple Encroachment Permits and Resolutions
- Pine Mountain Lake Airport Inspection (dated 05/01/2023)
- Residents Group Opposition to Abandonment (dated 04/30/1978)



III. SPONSOR AND MANAGEMENT BACKGROUND

A. Airport Sponsor

The County Airports are owned and operated by the County with an Airport Advisory Committee providing recommendations on policy matters as it relates to the operation and management of the County Airports.

AMCG understands from recent press releases that the Airport Advisory Committee was disbanded by the County Board of Supervisors in December 2022. However, in August 2023, the County Board of Supervisors voted to reestablish the Airport Advisory Committee.

B. Airport Management

The County, through the Airports Division which operates under the Public Works Department, operates and manages the County Airports on a day-to-day basis. The Airport Administration Office is located at Columbia Airport. As conveyed in the Airports Division mission statement, the County Airports are operated in a safe and efficient manner through quality services for all customers and by supporting aviation in the local community through fiscal responsibility and professional competence.

C. Airports Division Employees

The County Airports Division is led by the Airport Manager (reporting to the Director of Public Works) and supported by 3 full-time equivalent (FTE) employees consisting of 1 FTE administrative technician and 2 FTE Airport technicians.

AMCG understands the Airport technicians are responsible for landscaping (including mowing), limited asphalt maintenance and repair, and snow removal operations. In addition, limited facilities repair is conducted.

D. Airports Division Equipment

The County maintains necessary equipment for landscaping maintenance, airfield maintenance, and snow removal operations. The Airports Division maintains multiple lawnmowers, string trimmers, blower packs, a forklift, and support vehicles. The equipment is stored in the Airport Maintenance Building adjacent to the Airport Administrative Office at Columbia Airport.



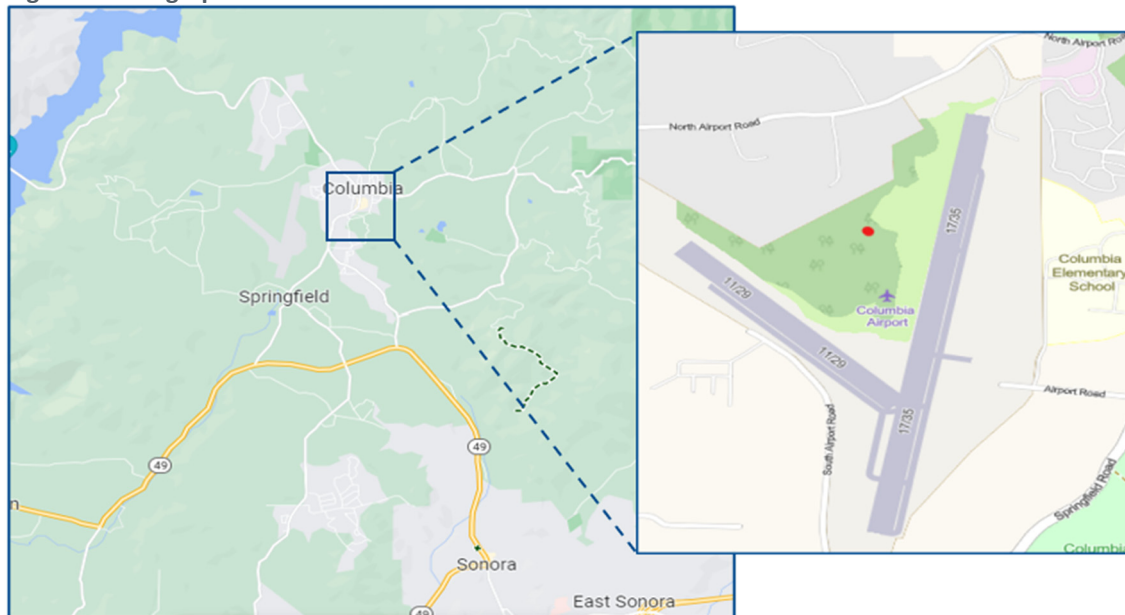
IV. COLUMBIA AIRPORT BACKGROUND

A. Community Overview

1. Geographic Location

The Airport is located approximately 1 mile southwest of the Town of Columbia (Columbia) central business district. As identified in **Figure 1**, the Airport is located between the Town of Springfield and the Town of Columbia.

Figure 1 – Geographic Location



2. Demographics

The population of Columbia has decreased a total of 10.9% or a compounded annual decrease of 1.0% from 2,577 in 2010 to 2,297 in 2020 (U.S. Census Bureau). The population of the County has increased a total of 3.5% or a compounded annual increase of 0.3% from 54,157 in 2010 to 56,074 in 2020 (U.S. Census Bureau).

3. Business and Industry

The largest employment sectors in Columbia are (1) professional, scientific, and technical services, (2) health care and social assistance, and accommodation and food services (3). These employment sectors account for approximately 47.4% of employment in Columbia. The largest employment sectors in the County are (1) health care and social assistance, (2) accommodation and food services, and (3) retail trade. These employment sectors account for approximately 33.1% of employment in the County.

4. Economic Factors

The civilian labor for the County has decreased from 21,532 in 2015 to 19,877 in 2022 (U.S. Census Bureau), which represents a total decrease of 7.7% or a compounded annual change of 1.1%. As identified by the U.S. Bureau of Labor Statistics, the unemployment rate of the County was estimated to be 4.9% (June 2023) which is higher than the U.S. unemployment rate of 3.6% (June 2023).



5. Climate

Columbia has a mild climate with warm summers and cool winters. The average annual high temperature is 82°F and the average annual low is 58°F. The hottest month of the year is July with an average high of 89°F and the coldest month of the year is December with an average low of 37°F. Columbia average annual precipitation is 41 inches of rain and average annual snowfall is 6 inches.

B. Airport Overview

1. Airport Description

The Airport, which consists of approximately 356 acres of land, has two runways, as follows:

- Runway 11/29: 2,607 feet long and 50 feet wide, turf in good condition.
- Runway 17/35: 4,673 feet long and 75 feet wide, grooved asphalt in good condition.

The Airport does not have an Air Traffic Control Tower but is served by one non-precision approach (RNAV-GPS) for Runway 35. The Airport is designated a General Aviation Airport in the Federal Aviation Administration (FAA) *National Plan of Integrated Airports System (NPIAS)* and a Local Airport in the FAA *General Aviation Airports: A National Asset* study.

Access is controlled through fencing and vehicle/pedestrian gates surrounding the Airport. Individuals requesting access to the Airport (via County controlled access points) are required to complete a Gate Card/Remote Application. It is important to note access to the Airport Campground (outlined in Section 6) consists of one vehicular gate along Chile Gulch Road which is not consistently secured.

2. Airport Facilities

The County currently owns and leases 83 hangars at the Airport as outlined in **Table 2** and **Figure 2**. The T-Hangars and Port-A-Port hangars can accommodate smaller general aviation aircraft (e.g., Beechcraft Bonanza; Cessna 150, 172, 182, 210; Cirrus 20 and 22; Diamond Star and Katana; Piper Arrow, Cherokee, and Saratoga; etc.). The Executive Hangars/Box Hangars can accommodate larger general aviation aircraft normally frequenting the Airport. The County also provides aircraft tiedowns.

Table 2 – County-Owned Facilities

Airport Facilities		
Description	Count	Size (Sqft)
Executive Hangar/Box Hangar	1	2,500
Executive Hangar/Box Hangar	5	2,800
Executive Hangar/Box Hangar	4	1,600
Executive Hangar/Box Hangar	1	1,800
Executive Hangar/Box Hangar	1	2,200
Lorik Hangar	1	8,600
Small and Medium Tiedowns	N/A	N/A
Port-A-Port	1	809
T-Hangars Rows A -E	25	784
T-Hangars Rows F & G	16	960
T-Hangars Row J & K	28	992



Figure 2 – County-Owned Facilities



For reference purposes only

In addition to County-owned facilities, multiple tenant-owned hangar facilities are located at the Airport through a land lease agreement with the County. These tenants include non-commercial based aircraft, commercial aeronautical operators, and CalFire.

3. Airport Operations

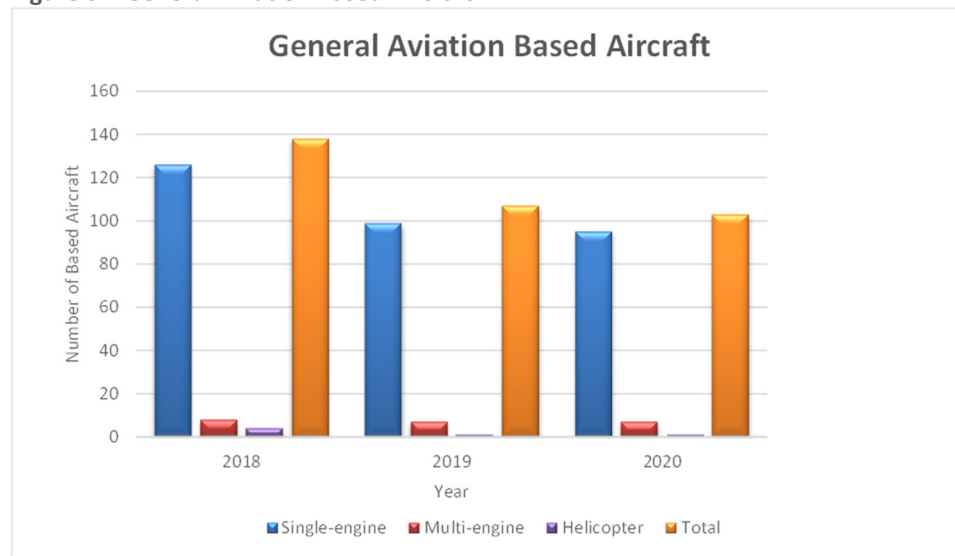
Total aircraft operations at the Airport were approximately 45,700 in 2019, as reported by the FAA Master Record 5010. Total general aviation operations consisted of 21,000 local operations (approximately 46%) and 22,900 itinerant operations (approximately 50%).

4. Based Aircraft

Figure 3 illustrates the number of based aircraft at the Airport from 2018 to 2020, as reported by the FAA Master Record 5010.



Figure 3 – General Aviation Based Aircraft



As shown in **Table 3**, 103 aircraft were based at the Airport as of 2020. From 2018 to 2020, the number of total aircraft based at the Airport decreased a total of 25.4%, or a compounded annual decrease of 13.6%.

Table 3 – General Aviation Based Aircraft

General Aviation Based Aircraft					
Year	Single-engine	Multi-engine	Helicopter	Total	% Change
2018	126	8	4	138	N/A
2019	99	7	1	107	-22.5%
2020	95	7	1	103	-3.7%

5. Commercial Operators and Non-Commercial Tenants

One fixed base operator (Bald Eagle Aviation) provides fueling (jet and avgas) and line services. Multiple specialized aviation service operators provide aircraft maintenance, aircraft rental, flight training, and aircraft charter.

The Airport is home to a CalFire Air Attack Base which houses two S2-T air tankers, a helicopter dispatched hotshot crew, and an OV-10 observation aircraft. PHI Air Medical is also based at the Airport providing air ambulance services from the Airport.

6. Non-Aeronautical and Campground Overview

Non-Aeronautical Uses

The existing Land Use Drawing (outlined in **Figure 4**) identifies three non-aeronautical use areas of Airport property. AMCG understands these three areas are utilized by the County Sheriff's Office (Area #1), the County Road Operations Department (Area #2), and a vacant building (Area #3). Area #1 and Area #3 have vehicle access to the Airport infrastructure (Area #1 access is restricted with a vehicle gate) while Area #2 is located on the landside portion of the Airport without access to the AOA.



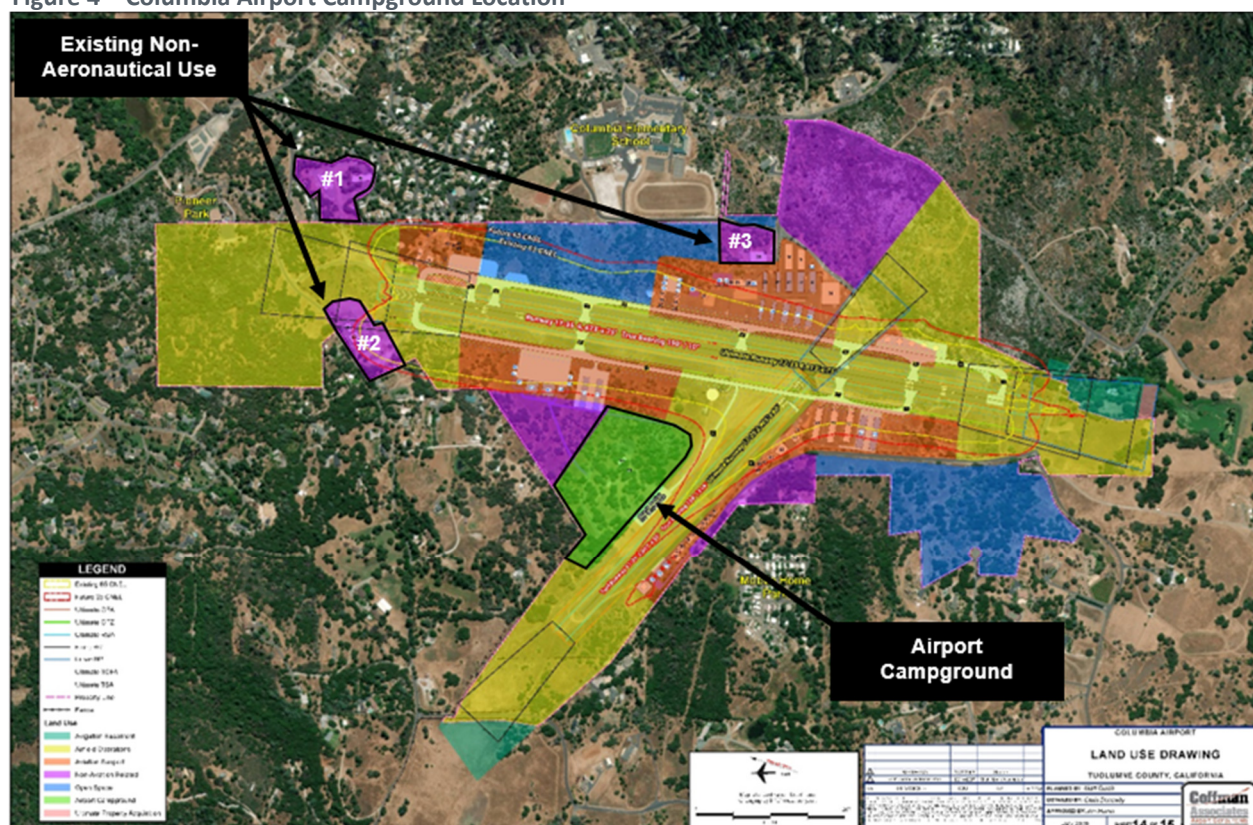
Current agreements for the three non-aeronautical uses of Airport property were not made available to AMCG.

Airport Campground

The Airport offers a fly-in campground on a first-come-first serve basis. The campground has a total of 20 campsites with picnic tables and barbecues or additional camping spots available under the wings of aircraft parked adjacent to the campground. The campground has restroom facilities, full kitchen, dining hall, and multiple recreational activities. Access from the campground area to the Airport is uncontrolled.

Figure 4 illustrates the location existing non-aeronautical uses (Area #1, #2, and #3) as well as the location of the campground.

Figure 4 – Columbia Airport Campground Location



C. FBO Overview

1. FBO Current Situation

Bald Eagle Aviation is the current Fixed Base Operator (FBO) at the Airport providing jet and avgas fueling (Titan branded), line services, and aircraft parking (tiedown). The FBO is open and available 7 days per week and provides full-service fueling (avgas and jet) as well as self-serve fueling (avgas only). After-hours call-out services are available upon request. The largest FBO customer is the CalFire Air Attack Base.



2. FBO Lease Agreement

A lease agreement with a 20-year initial term was executed November 10, 1998, with an expiration date of October 31, 2018. The one 10-year option period was exercised extending the expiration date until October 31, 2028. Bald Eagle Aviation is effectively a limited FBO providing fuel, line services, and tiedown but does not provide any additional services (e.g., hangar parking, aircraft maintenance, etc.).

3. FBO Property

The FBO leased premises currently consists of the FBO terminal building. Bald Eagle Aviation does not lease hangar or apron areas. It is important to note the FBO is interested in potential development of hangars if approved and permitted.

4. FBO Employees

In addition to the FBO owner, aircraft fueling services are provided utilizing 2 – 3 FTE line service technicians.

5. FBO Equipment

FBO fueling services are provided through two avgas refueling vehicles (750 gallon and 1,000 gallon) or two jet refueling vehicles (3,000 gallon and 5,000 gallon). The fuel storage facility, owned by Bald Eagle Aviation on County-lease property, consists of one avgas tank (12,000 gallons) and one jet tank (12,000 gallons). The FBO also offers two courtesy/rental cars available for transient customers.



V. PINE MOUNTAIN LAKE AIRPORT BACKGROUND

A. Community Overview

1. Geographic Location

The Airport is located approximately 3 miles northeast of the Town of Groveland (Groveland) central business district and within the Stanislaus National Forest. As identified in **Figure 5**, the Airport is located between the Town of Tuolumne and the Town of Groveland.

Figure 5 – Geographic Location



2. Demographics

The population of Groveland has decreased a total of 41.9% or a compounded annual decrease of 5.3% from 601 in 2010 to 249 in 2020 (U.S. Census Bureau). The population of the County has increased a total of 3.5% or a compounded annual increase of 0.3% from 54,157 in 2010 to 56,074 in 2020 (U.S. Census Bureau).

3. Business and Industry

The largest employment sectors in Groveland are (1) accommodation and food service, (2) construction, and (3) other services not including public administration. These employment sectors account for approximately 96.6% of employment in Groveland. The largest employment sectors in the County are (1) health care and social assistance, (2) accommodation and food services, and (3) retail trade. These employment sectors account for approximately 33.1% of employment in the County.

4. Economic Factors

The civilian labor for the County has decreased from 21,532 in 2015 to 19,877 in 2022 (U.S. Census Bureau), which represents a total decrease of 7.7% or a compounded annual change of 1.1%. As identified by the U.S. Bureau of Labor Statistics, the unemployment rate of the County was estimated to be 4.9% (June 2023) which was higher than the U.S. unemployment rate of 3.6% (June 2023).



5. Climate

The Town has a mild climate with warm summers and cool winters. The average annual high temperature is 70°F and the average annual low is 41°F. The hottest month of the year is July with an average high of 90°F and the coldest month of the year is December with an average low of 52°F. The Town average annual precipitation is 40 inches of rain and average annual snowfall is 6 inches.

B. Airport Overview

1. Airport Description

The Airport, which consists of approximately 52 acres of land, has one runway, as follows:

- Runway 09/27: 3,642 feet long and 50 feet wide, grooved asphalt in good condition.

The Airport does not have an Air Traffic Control Tower but is served by multiple non-precision approaches (GPS, RNAV-GPS). The Airport is designated a General Aviation Airport in the FAA NPIAS and an Unclassified Airport in the FAA *General Aviation Airports: A National Asset* study.

Access is controlled through fencing and vehicle/pedestrian gates at the Airport entrance. Individuals requesting access to the Airport (via County controlled access points) are required to complete a Gate Card/Remote Application. It is important to note uncontrolled access to the Airport occurs regularly from through-the-fence (TTF) property (outlined in Section 6) located adjacent to the Airport.

2. Airport Facilities

The County currently owns and leases 5 hangars at the Airport as outlined in **Table 4** and **Figure 6**. The Executive Hangar/Box Hangar can accommodate larger general aviation aircraft normally frequenting the Airport. The County also provides aircraft tiedown.

Table 4 – Airport Facilities

Airport Facilities		
Description	Count	Size (Sqft)
Executive Hangar/Box Hangar #1 & #2	2	1,500
Executive Hangar/Box Hangar #3 - #5	3	1,440
Small and Medium Tiedowns	N/A	N/A



Figure 6 – Airport Facilities



For reference purposes only

In addition to County-owned facilities, multiple tenant-owned hangar facilities are located at the Airport through a land lease agreement with the County.

3. Airport Operations

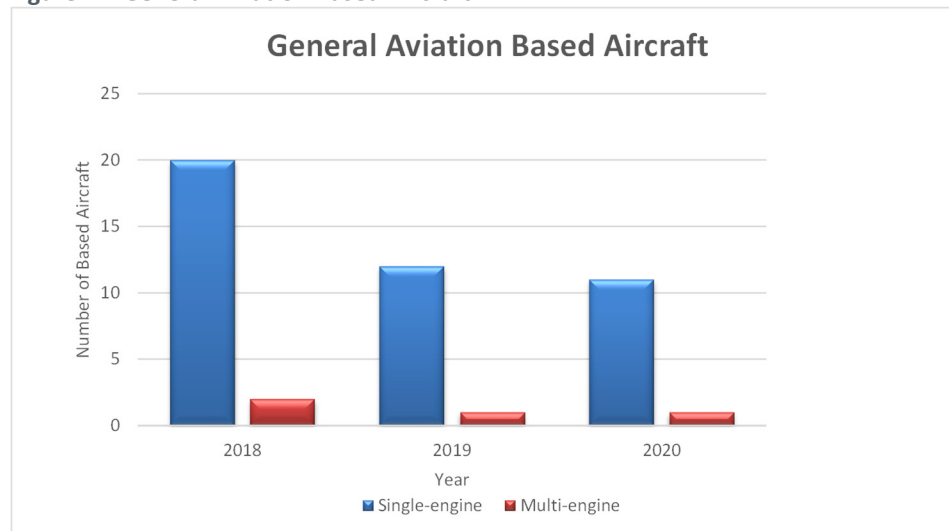
Total aircraft operations at the Airport were approximately 15,000 in 2022, as reported by the FAA Master Record 5010. Total general aviation aircraft operations consisted of approximately 6,750 local operations (approximately 45%) and approximately 15,000 itinerant operations (approximately 55%).

4. Based Aircraft

Figure 7 illustrates the number of based aircraft at the Airport from 2018 to 2020, as reported by the FAA Master Record 5010.



Figure 7 – General Aviation Based Aircraft



As shown in **Table 5**, 12 aircraft were based at the Airport as of 2020. From 2018 to 2020, the total number of based aircraft at the Airport decreased a total of 45.5% or a compounded annual decrease of 18.3%.

Table 5 – General Aviation Based Aircraft

General Aviation Based Aircraft				
Year	Single-engine	Multi-engine	Total	% Change
2018	20	2	22	N/A
2019	12	1	13	-40.9%
2020	11	1	12	-7.7%

5. Commercial Operators and Non-Commercial Tenants

One commercial operator (Mother Lode Aviation) provides self-serve fueling (avgas only). AMCG understands the current fuel provider (Mother Lode Aviation) operates as a co-op fueling entity in which certain interested parties can purchase shares in addition to providing self-serve fuel on a retail basis.

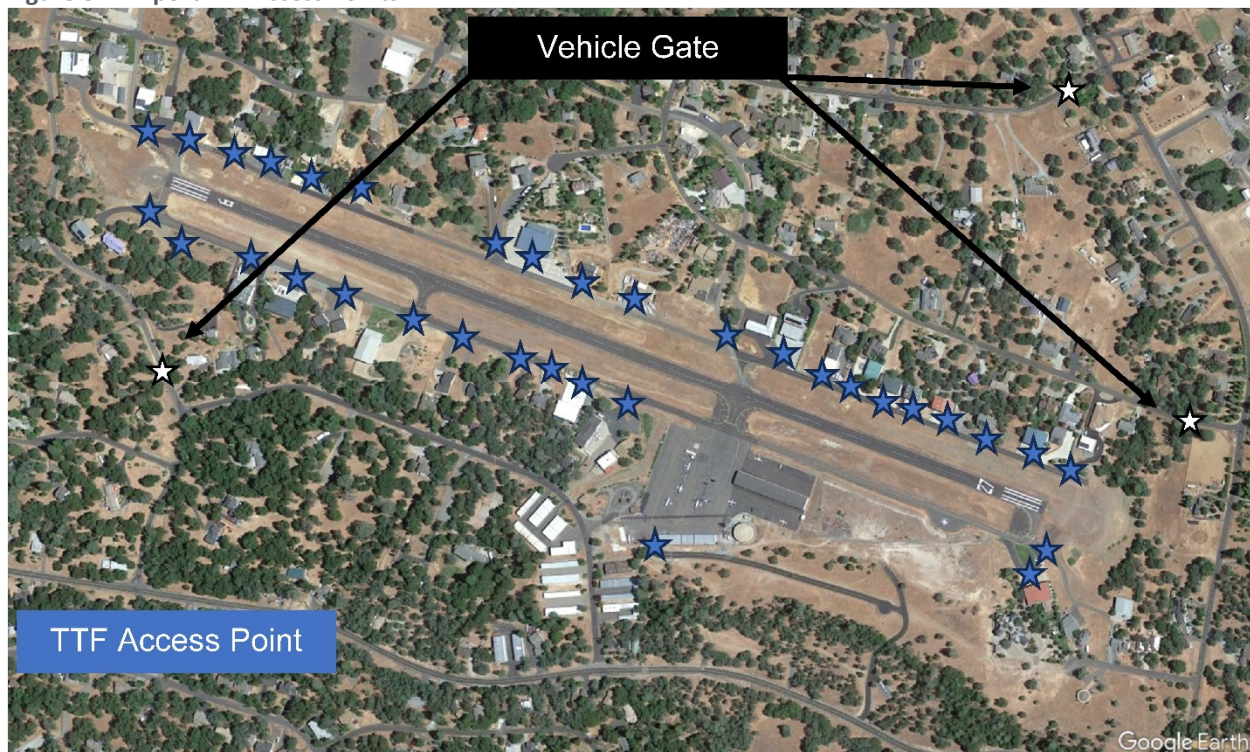
6. Through-the-Fence Activities

Background

As conveyed in **Figure 8**, the Airport accommodates through-the-fence access at a significant number of locations along the Airport boundary.



Figure 8 – Airport TTF Access Points



For reference purposes only

Consistent with Airport Cooperative Research Program (ACRP) Report 114: *Guidebook for Through-the-Fence Operations*, TTF occurs when the airport sponsor allows access to the Airport infrastructure (e.g., runways, taxiways, taxilanes, aprons, etc.) from land adjacent to the Airport. More specifically, based on ACRP Report 114 and consistent with the FAA definition provided in FAA Advisory Circular 150/5190-7 *Minimum Standards for Commercial Aeronautical Activities*, “TTF operations occur when an airport sponsor grants an entity ground access by an aircraft across the airport’s property boundary to the airport’s airside infrastructure (commonly through-the fence) and permission to engage in associated activities from property adjacent to the airport.” These activities may include residential, commercial aeronautical, non-commercial aeronautical, non-aeronautical, and government/military activities.

FAA Airport Sponsor Assurance #22 states “It [airport sponsor] will make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.”

However, as stated in FAA Advisory Circular 150/5190-7, “The obligation to make an airport available for the use and benefit of the public does not require the airport sponsor to permit ground access by aircraft from adjacent property. Through-the-fence arrangements can place an encumbrance on the airport property and reduce the airport’s ability to meet its Federal obligations. As a general principal the FAA does not support agreements that grant access to the public landing area by aircraft stored and serviced off-site on adjacent property.” As such, airport sponsors are encouraged to be vigilant in applying rules and minimum standards through an airport access agreement, including conditions to protect the airport’s ability to meet all the airport sponsor’s Federal obligations.



FAA Advisory Circular 150/5190-7 also states that in the event of granting through-the-fence access, airport sponsors should “include requirements to ensure operating safety and equitable compensation for use of the airport. Special safety and operational requirements should be incorporated into any access agreement to ensure that the through-the-fence access does not complicate the control of vehicular and aircraft traffic or compromise the security of the airfield operations area.”

In addition to being reported to the FAA Regional Airports Division, the through-the-fence access agreement “should specify what specific rights of access are granted; payment provisions that provide, at a minimum, parity with similarly situated on-airport tenants and equitable compensation for the use of the airport; expiration date; default and termination provisions; insurance and indemnity provisions; and a clear statement that the access agreement is subordinate to the grant assurances and/or Federal property conveyance obligations and that the sponsor shall have the express right to amend or terminate the access agreement to ensure continued compliance with all grant assurances and Federal property conveyance obligations.” Along with the fixed contract period, the “airport sponsor is under no obligation to accept a proposed assignment or sale of the access agreement by one party to another. It is encouraged that airport sponsors expressly prohibit the sale or assignment of its [airport sponsor’s] access agreement.”

Current Situation

A *Deed of Access* between Inter-County Title Company and the County (dated 02/28/1973) states as it relates to Parcel No. 1 “Easements for aircraft access to and from Lots 3 through 17, and Lot 18, Pine Mountain Lake Unit No. 11 and Lots 3 through 17 and Lots 56 through 66, Pine Mountain Lake Unit No. 12, as said lots are shown on the recorded maps of said subdivision. Said easements subject to the right of the Grantee [County] its successors and assigns to direct and control aircraft traffic upon entry to the herein defined property.”

Further, as it relates to Parcel No. 2, the *Deed of Access* states “Easements for ingress, egress, airport parking and accessories and Public Utility purposes as reserved in that certain deed from Inter-County Title Co., Tuolumne-Mariposa Division to Degnan, Donohoe, Inc., recorded October 17, 1972, in Book 368, page 479, Official Records of Tuolumne County. This grant is made subject to the express condition that the property shall be maintained and used exclusively as an airport and associated uses. On breach of this condition the Grantor [Inter-County Title Company] and its successors or assigns shall have the right to re-enter and take possession of the land and to hold, own and possess the same in the same manner and to the same extent as if this grant had never been made.” However, based on the County’s research with regard to the Marketable Record Title Act of 1982, it considers this deed restriction unenforceable.

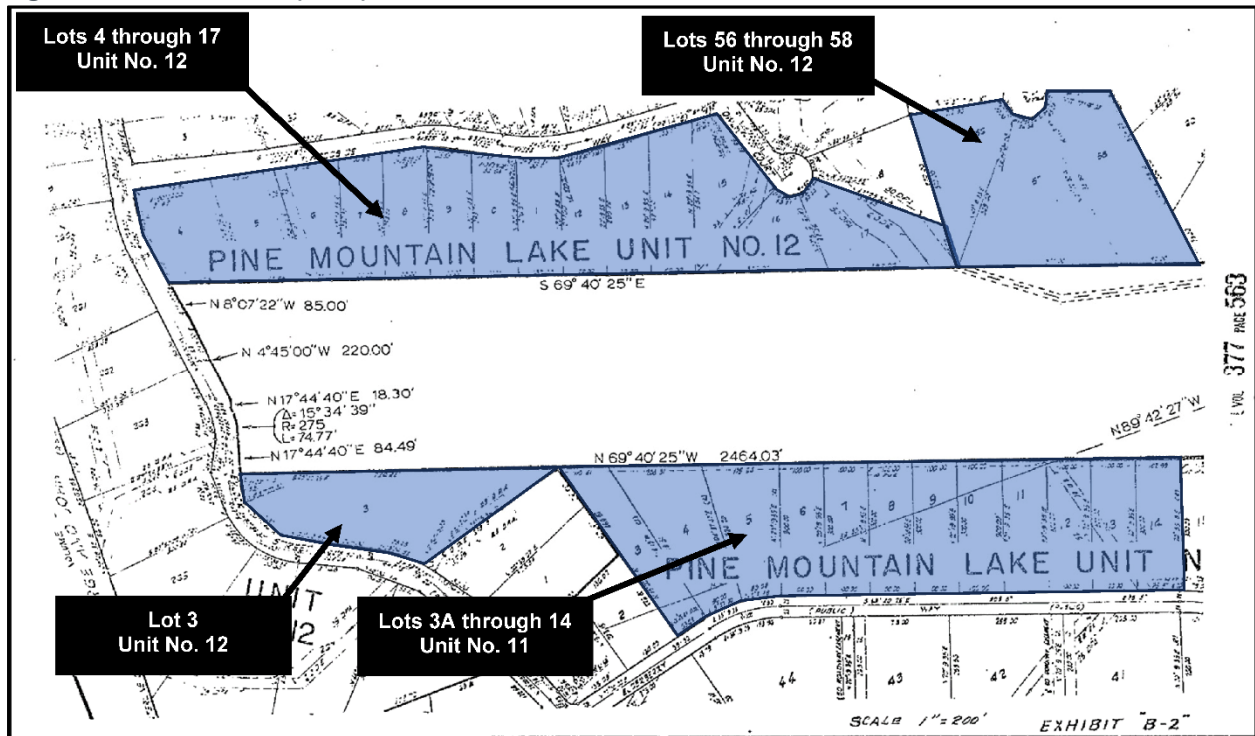
As referenced in the preceding paragraphs, Pine Mountain Lake Unit No. 11 and No. 12 are conveyed in **Figure 9** and **Figure 10**, as follows.

- Figure 9: Lots 3 through 14, Pine Mountain Lake Unit No. 11
- Figure 9: Lots 3 through 17, Pine Mountain Lake Unit No. 12
- Figure 9: Lots 56 through 58, Pine Mountain Lake Unit No. 12
- Figure 10: Lots 15 through 18, Pine Mountain Lake Unit. No 11
- Figure 10: Lots 60 through 66, Pine Mountain Lake Unit No. 12

The referenced lot numbers are highlighted.

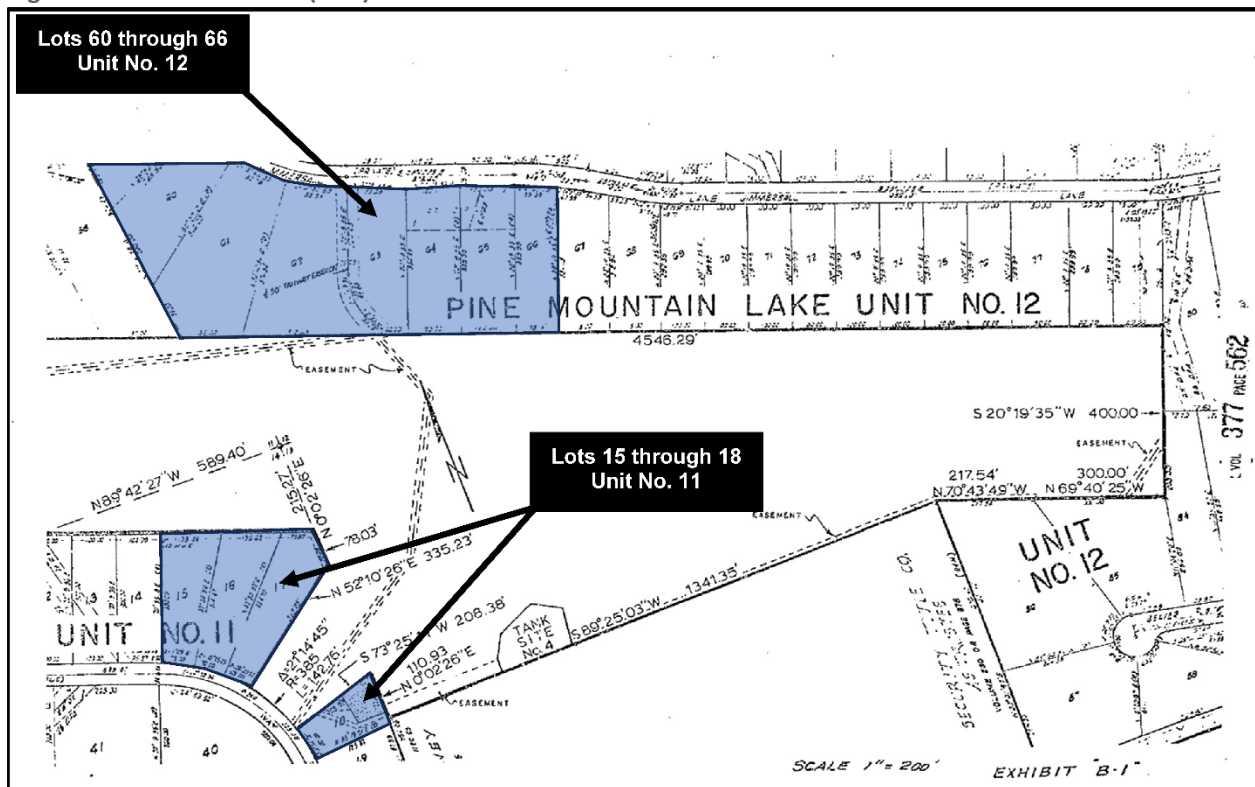


Figure 9 – Deed of Access (West)



For reference purposes only

Figure 10 – Deed of Access (East)



For reference purposes only



As conveyed in **Figure 8**, additional TTF access has been granted by the County that was not originally included in the *Deed of Access*. Based on AMCG's understanding, TTF access occurs without a formal agreement or TTF Access Permit outlining associated fees or compliance with Airport regulatory requirements.

It is important to recognize that the through-the-fence area lacks security and access controls to the hangars and, more importantly, the Airport infrastructure. As conveyed in **Figure 8**, multiple vehicle access gates exist along Hemlock Street, Jimmersall Lane, and Beaver Court. However, all TTF parcels identified in Figure 9 and Figure 10 are not located behind vehicle access gates and existing security protocols on private property do not fully restrict access to the Airport infrastructure.

7. FAA Non-Compliance

In a letter from the FAA to Jim Thomas, Airports Director (dated 08/23/2007), the FAA cited two items requiring resolution "in order for Pine Mountain Lake Airport to receive continued Airport Improvement Program (AIP) funding." The two items are summarized below:

Unrestricted Airport Access

The letter states "not only aircraft can access the airport, private vehicles, pedestrians, bicycles, motorcycles, and animals can access the airport causing potential safety issues with aircraft operations." The letter continues by stating "allowing such access can be an encumbrance on the airport in conflict with Grant Assurance 5, *Preserving Rights and Powers*."

Existing Residential Airpark

The letter states the FAA "considers residential airpark development an incompatible land use. And, as such, inconsistent with Grant Assurance 21, *Compatible Land Use*, that considers such usage contrary to Federal obligations." While the FAA recognizes that the previous owner deeded the Airport to the County for TTF access, the letter states, "As far as FAA is concerned, residential airparks are privately owned and maintained residential type facilities that are not considered aeronautical facilities suitable for a federally obligated airport."

In a follow-up letter from the FAA to Jim Thomas, Airports Director (dated 03/29/2012) titled *Pine Mountain Lake Airport Access Plan and Return to Compliance*, the FAA denied the County's request for grants to fund updating the ALP. The FAA stated that "once the noncompliance issues are resolved [as outlined in the 2007 Letter], the airport sponsor [County] will be eligible for AIP funds."

C. FBO Overview

1. FBO Current Situation

Mother Lode Aviation is the current fuel provider at the Airport providing self-serve avgas (non-branded). The self-serve facility is open and available 7 days per week, 24 hours per day.



2. FBO Lease Agreement

A lease agreement with a 10-year initial term was initiated on November 30, 2001, with an expiration date of November 30, 2011. The one 10-year option period was exercised extending the expiration date until November 30, 2021.

It is important to note additional information was not available conveying an extension to the Mother Lode Aviation agreement. Based on information available to AMCG, Mother Lode Aviation is operating at the Airport without a current agreement.

3. FBO Property

The leased premises currently consist of an apron area for the placement of a self-serve fuel storage facility. Mother Lode Aviation does not lease hangar areas.

4. FBO Employees

Given the operation is self-serve only, no employees are located at the Airport. AMCG understands fuel quality control is conducted by TTF individuals.

5. FBO Equipment

The self-serve fuel storage facility consists of one avgas tank (12,000 gallons) with credit card processing capabilities.



VI. IMMEDIATE RECOMMENDATIONS

Immediate recommendations are based on the unique circumstances of the County Airports and AMCG recommends resolution within the next year.

A. Resolve Non-Compliance Items (Pine Mountain Lake Airport)

AMCG recommends resolving all non-compliance items identified by the State of California Department of Transportation (DOT) at Pine Mountain Lake Airport.

As outlined in the State of California Department of Transportation Letter, dated 05/01/2023 (DOT Letter), AMCG recommends the four non-compliance items identified, as follows:

- Reduction in tree height west of the Runway 09 threshold to comply with 14 Code of Federal Regulations (CFR) Part 77.
- Reduction of the tree height north and south of Runway 09/27 to comply with 14 CFR Part 77.
- Update taxiway signage to comply with FAA Advisory Circular 150/5340-1M *Standards for Airport Markings*.
- Update taxiway informational signage to comply with FAA Advisory Circular 150/5340-18G *Standards for Airport Sign Systems*

B. Airport Rent Study (Both Airports)

AMCG recommends implementing market-based aeronautical rental rates (based on the Airport Rent Study) for each County Airport.

As outlined in the FAA *Airport Sponsor Assurances*, it is incumbent on the County to develop a rents and fees program that makes the County Airports as financially self-sustaining as possible given the circumstances that exist. The most direct manner to address this obligation is to implement fair market rents and cost-recovery fees which ensure the County Airports are generating necessary revenues to cover expenses, fund future projects, and maintain adequate financial reserves.

As such, AMCG recommends the County implement the findings of AMCG's *Airport Rent Study* for each County Airport pertaining to the aeronautical land and improvements leased from the County. To derive the opinion of market rent, rental rates on a comparative basis for similar land and improvements at comparable and competitive airports (and at national and regional airports) were analyzed to support a market based rental rate. Additional information pertaining to the methodology and process can be reviewed in ACRP Report 213 – *Guidebook for Estimating Market Value and Establishing Market Rent at Small Airports*.

It is important to note, if the County leases land and/or improvements for non-aeronautical uses, an appraisal should be conducted to determine the market value and/or market rent based on the local market.



C. Through-the-Fence Access Agreement (Pine Mountain Lake Airport)

AMCG recommends establishing a TTF agreement with all entities accessing Pine Mountain Lake Airport from off-Airport property and establishing appropriate rents and fees.

Consistent with FAA guidance, a TTF agreement should be developed to “include requirements to ensure operating safety and equitable compensation for use of the airport.” AMCG was not provided with any documentation that adequately addresses FAA concerns related to TTF access. Additionally, the through-the-fence area lacks security and access controls to ensure a secure and safe Airport environment.

AMCG recommends a detailed review of all access agreements, deeds of access, and any other pertinent documents (including ACRP Report 114) in preparation for a new TTF agreement compliant with FAA guidance.

At a minimum, the TTF agreement should address security and access controls which may require acquisition of the north taxiway (addressed in Section VII. Short-Term Recommendations, Item A.). By acquiring ownership of the north taxiway (if necessary), gated access control can be installed to ensure intentional or unintentional access to the Airport is addressed.

Additionally, the TTF agreement should ensure “equitable compensation for use of the airport.” As stated in ACRP Report 114, “one of the most significant financial issues associated with TTF operations is creating economic parity between TTF entities and on-airport operators, tenants, and/or users. On-airport entities pay airport sponsors rents and fees for occupying and/or using airport land, infrastructure, and/or improvements and engaging in aeronautical activities.” “Conversely, a TTF entity owns property located off-airport and typically does not pay rent (per se) to the airport sponsor.” “Therefore, unless a TTF agreement exists (which requires that the TTF entity pay rents and fees to the airport sponsor) for TTF activities, TTF access, and airport use, a TTF entity would enjoy a financial economic advantage over on-airport operators, tenants, and users.” Consistent with ACRP Report 114, a TTF agreement should require payment of rent (typically on a land and apron basis) for the areas utilized by the through-the-fence entity.

AMCG recognizes the potential ramifications in changing existing through-the-fence protocols. It is important to understand the FAA’s focus on through-the-fence activities and guidance for security and equitability. The TTF agreement should be reviewed by the FAA to ensure the agreement will address FAA concerns as well as not create future issues pertaining to grants and inclusion in the FAA *NPIAS*.

D. Airport Ownership (Pine Mountain Lake Airport)

AMCG recommends the County finalize ownership decision and commitment to support future operations and management of Pine Mountain Lake Airport.

In conjunction with completing the other Immediate Recommendations (*Airport Rent Study* and *Through-the-Fence Agreement*), AMCG recommends the County commit to future operation and management of the Airport. Additionally, the County would be committing to financially supporting the Airport.

However, if unable or unwilling to implement the *Airport Rent Study* or *Through-the-Fence Agreement*, AMCG does not foresee an avenue to address County financial concerns or FAA compliance issues pertaining to the Airport.



VII. SHORT-TERM RECOMMENDATIONS

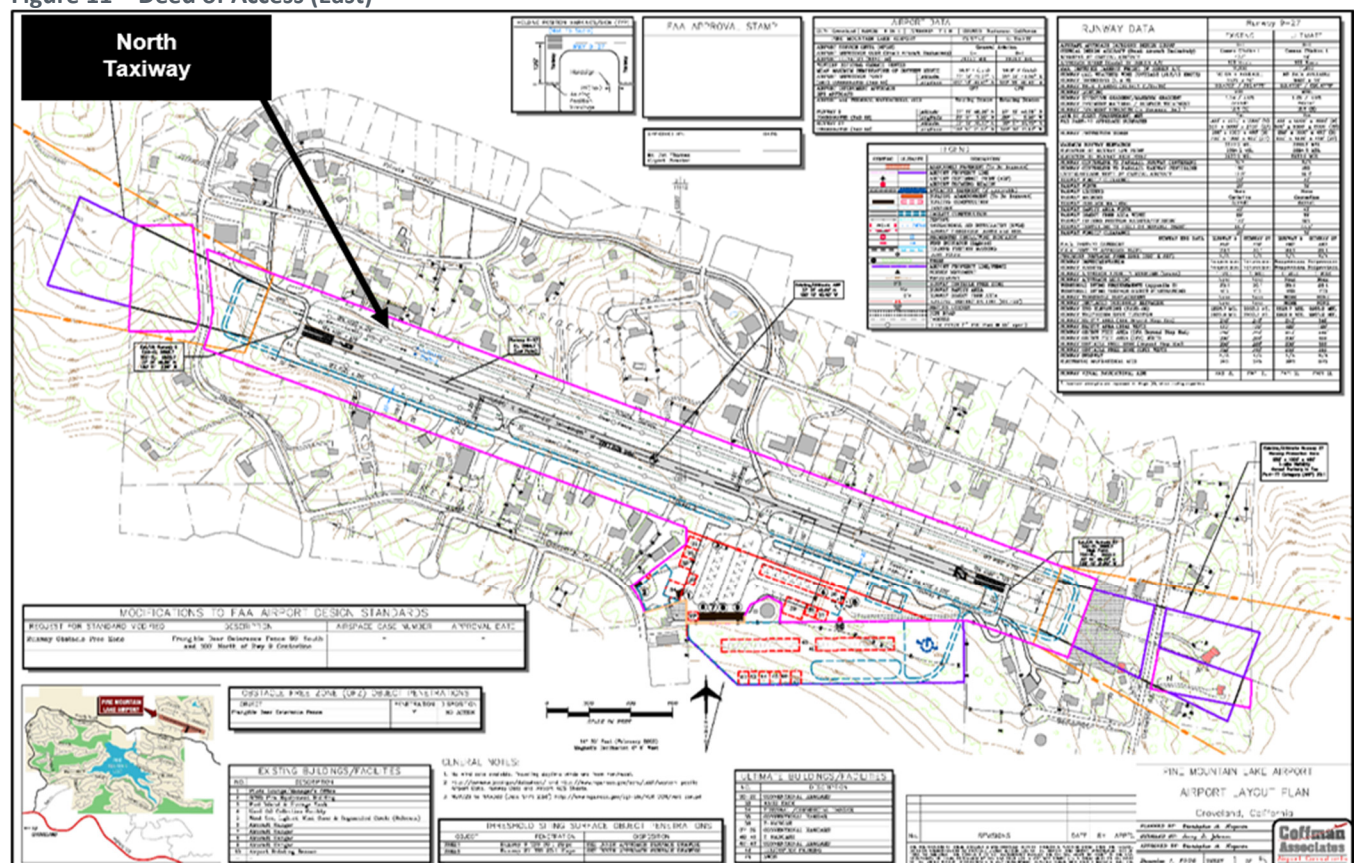
AMCG recommends resolution of the short-term recommendations within the next 1 – 3 years. If the County does not continue as the airport sponsor, owner, and operator of Pine Mountain Lake Airport, certain short-term recommendations would no longer apply.

A. Property Line and North Taxiway Status (Pine Mountain Lake)

AMCG recommends the County acquire ownership and assume maintenance responsibilities of the North Taxiway at Pine Mountain Lake Airport.

As conveyed in **Figure 11**, the North Taxiway (approximately 20 feet in width and approximately 150 feet from the runway centerline) is located on Airport property, was constructed with private funding, and identified as a private taxiway on the existing ALP.

Figure 11 – Deed of Access (East)



For reference purposes only



The *Deed of Access* between Inter-County Title Company and the County (dated 02/28/1973) states “easements for aircraft taxiways fifty (50.00) feet in width at such locations as the Grantor [Inter-County Title Company] and Grantee [County] herein may, in the future determine, together with the right to construct said taxiways.” Additionally, multiple Conditional Encroachment Permits state “Permission is hereby granted to construct a private taxiway to the County-owned taxiway located on the north side of Runway 09/27, including use of drainage culvert.” Additionally, the Conditional Encroachment Permits require on-going maintenance and acceptance of liability (personal and property damage).

FAA Advisory Circular 150/5300-13B Airport Design conveys taxiway design standards. Table 4-2 identifies the minimum taxiway/taxilane width as 25 feet for Taxiway Design Group (TDG) 1A and the minimum runway to taxiway/taxilane separation as 150 feet. Further, FAA Advisory Circular 150/5300-13B outlines maximum surface gradients for taxiways and taxilanes. To ensure a safe and compliant operating environment, the County should acquire ownership and maintenance responsibilities of the North Taxiway and develop a plan to meet current FAA requirements. Additionally, the County must ensure the design and use of the taxiway is consistent with FAA requirements.

B. Agreement Compliance Review (Columbia Airport)

AMCG recommends reviewing established lease structure (aeronautical or non-aeronautical) to ensure the leased premises (land and improvements) are accurately identified and lease rates reflect market conditions.

Based on AMCG’s review, the current lease practices do not easily and adequately identify the current leased premises (land and improvements) utilized by each tenant or identify the type of lease (aeronautical or non-aeronautical). Additionally, certain lease agreements were not available for review. As outlined in the FAA Compliance Guidance Letter 2018-3-Appraisal-Standards and ACRP Report 213 – *Guidebook for Estimating Market Value and Establishing Market Rent at Small Airports*, the methodology and requirements for lease rates vary depending on aeronautical or non-aeronautical use.

Upon completion of the lease review, current property maps should be developed to convey lease premises for each tenant.

Additionally, as outlined in FAA Airport Sponsor Assurance #22, the County will enforce provisions in all agreements to ensure commercial aeronautical operators will “furnish said services on a reasonable, and not unjustly discriminatory, basis to all users” and “charge reasonable, and not unjustly discriminatory, prices for each unit or services, provided that the contractor [commercial aeronautical operator] may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.”

C. Identified CIP Projects (Columbia Airport)

AMCG recommends completing the Capital Improvement Plan projects identified for Columbia Airport.

FAA Airport Sponsor Assurance 5 requires the County maintain “the airport and all facilities which are necessary to serve the aeronautical uses of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition.” As such, AMCG



recommends the County fulfill the Capital Improvement Plan (CIP) projects identified for Columbia Airport which include automated weather observation system (AWOS) replacement, repainting the runway and taxiway markings, removing rubber build-up on the runway, and transition from a visual approach slope indicator (VASI) to a precision approach path indicator (PAPI) system.

D. Identified CIP Projects (Pine Mountain Lake Airport)

AMCG recommends completing the Capital Improvement Plan projects identified for Pine Mountain Lake Airport.

FAA Airport Sponsor Assurance 5 requires the County maintain “the airport and all facilities which are necessary to serve the aeronautical uses of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition.” As such, AMCG recommends the County fulfill the CIP projects identified for Pine Mountain Lake Airport which include AWOS design and installation, runway rehabilitation design, and aircraft parking apron rehabilitation design.

E. Airport Layout Plans (Both Airports)

AMCG recommends updating the existing Airport Layout Plans (ALPs) to identify necessary setback areas, property boundaries, and encroachment areas for both County Airports.

The most recent ALP for Columbia Airport was completed in 2019 while the most recent ALP for Pine Mountain Lake Airport was completed in 2006. AMCG was also provided a list of updates pertinent to the ALP for Columbia Airport.

FAA Airport Sponsor Assurance #29 requires airport sponsors to “keep up to date at all times an airport layout plan” identifying the following:

- “boundaries of the airport and all proposed additions thereto, together with the boundaries of all offsite areas owned or controlled by the [airport] sponsor for airport purposes and proposed additions thereto;”
- “the location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars and roads), including all proposed extensions and reductions of existing airport facilities;”
- “the location of all existing and proposed non-aviation areas and of all existing improvements thereon; and”
- “all proposed and existing access points used to taxi aircraft across the airport’s property boundary.”

F. Rules and Regulations (Both Airports)

AMCG recommends developing and adopting new *Rules and Regulations* to establish new foundational documents for the management and operation of the County Airports.



One of the most important elements of effective airport management is to ensure Primary Management and Compliance Documents (PMCDs) are established and current to guide the management, operation, security, and maintenance of the airport. The development of these critical documents requires commitment from the airport sponsor and staff to ensure the resulting policy documents are reasonable and appropriate for the County Airports.

Title 18 – Airports (which includes limited *Rules and Regulations* related language) needs to be reviewed, revised, and updated to reflect contemporary industry best practices. For example, Title 18 addresses areas outside the purview of an airport sponsor (e.g., traffic pattern altitude) and does not specifically outline the type of “minor repairs” permitted in a hangar. Additionally, the *Rules and Regulations* should not be outlined in the County Code, but rather as a document developed by Airport management (with outside support as necessary) and approved by the County.

AMCG recommends implementing new *Rules and Regulations* in conjunction with a *Non-Commercial Self-Fueling Permit* for any entity conducting non-commercial self-fueling on the County Airports and a *Special Event Permit* for any entity conducting a special event.

The *Rules and Regulations* will set forth the rules and regulations for the safe, orderly, and efficient operation and use of the County Airports as well as outline the general provisions and defined words that are common to all PMCDs. The purpose of *Rules and Regulations* is to protect public health, safety, interest, and welfare on the Airport and to restrict any activity or action that would interfere with the safe, orderly, and efficient operation and use of the Airport. The *Rules and Regulations* will also clearly delineate acceptable practices related to aircraft maintenance within hangars, storage of non-aeronautical items within hangars, using hangars for housing and/or sleeping purposes, and pedestrian access to the Airport infrastructure for recreational purposes.

Upon adoption of new *Rules and Regulations*, AMCG recommends the County revise Title 18 of the existing Code to eliminate duplication and ensure consistency.

G. Minimum Standards (Both Airports)

AMCG recommends developing and adopting new *Minimum Standards* to establish new foundational documents for the management and operation of the County Airports.

One of the most important elements of effective airport management is to ensure PMCDs are established and current to guide the management, operation, security, and maintenance of the Airport. The development of these critical documents requires commitment from the airport sponsor and staff to ensure the resulting policy documents are reasonable and appropriate for the Airport.

The existing *Minimum Standards* need to be reviewed, revised, and updated to reflect contemporary industry best practices. For example, the existing *Minimum Standards* do not address all the current commercial aeronautical activities occurring at the County Airports (e.g., FBO) or convey specific requirements (e.g., land, improvements, hours, personnel, etc.) for each type of commercial aeronautical operator.



AMCG recommends adopting new *Minimum Standards* in conjunction with a (1) *Commercial Operator and Lessee Application* for an entity interested in engaging in commercial aeronautical activities or leasing and/or improvements as well as a (2) *Commercial Operator Permit* for those entities providing commercial aeronautical activities at the County Airports.

The *Minimum Standards* will set forth the minimum requirements that need to be met as a condition for conducting commercial general aviation aeronautical activities at the County Airports. The purpose of *Minimum Standards* is to provide a fair and reasonable opportunity, without unjust discrimination, to applicants to qualify, or otherwise compete, to occupy available County Airport land and/or improvements and engage in authorized commercial general aviation aeronautical activities (including independent activities).

Upon adoption of new *Minimum Standards*, AMCG recommends the County revise Title 18 of the existing Code to eliminate duplication and ensure consistency.

H. Annual Hangar Inspection Protocols (Both Airports)

AMCG recommends implementing annual hangar inspections conducted by Airport management or staff along with the Fire Chief to ensure lease compliance and safety.

AMCG recommends the County establish an annual program to inspect all hangars (tenant-owned and County-owned) to ensure tenant compliance with their respective agreement, *FAA Policy on the Non-Aeronautical Use of Airport Hangars*, the *Rules and Regulations* (existing or as updated), and that all equipment and hazardous materials are properly stored and/or removed from the premises. Such inspections are critical to eliminate potential hazards that could impact the safety of other tenants and the public.

I. Airport Master Plan (Pine Mountain Lake Airport)

AMCG recommends conducting an Airport Master Plan update commencing no later than 2026 at Pine Mountain Lake Airport.

As stated in the Introduction of the existing Airport Master Plan for Pine Mountain Lake Airport, the Airport Master Plan determines “projected needs of airport users through the year 2025.”

The FAA recommends Airport Master Plans be updated every 7-10 years (or as demand dictates) to reflect the contemporary environment. During the Airport Master Plan process, an evaluation of current and forecasted airport activity, facility requirements, and various alternatives for the Airport will be conducted. An updated Airport Master Plan would provide guidance for future development which will satisfy aviation demand in an environmentally and fiscally responsible manner while adhering to FAA safety design standards. Alternative development scenarios would be devised, each satisfying projected needs in a unique way. Through a coordinated review by the County, the FAA, airport users, and the public, a recommended development concept would evolve to serve as a guide for realistic and achievable airport development well into the future.

It is important to note the existing Airport Master Plan for Columbia Airport was completed in 2017 and therefore, does not require an update in the immediate future. AMCG understands the County and FAA are discussing preparing an ALP Update with Narrative for Columbia Airport in the near future.



VIII. LONG-TERM RECOMMENDATIONS

AMCG recommends resolution of the long-term recommendations within the next 3 – 7 years. If the County does not continue as the airport sponsor, owner, and operator of Pine Mountain Lake Airport, certain long-term recommendations would no longer apply.

A. Update Land Use and Compatibility Plan (Both Airports)

AMCG recommends developing a new Comprehensive Land Use Plan.

The current Land Use and Compatibility Plan was developed in 2003 to “promote compatibility between the airports in Tuolumne County and the land uses which surround” the County Airports and serve “as a tool for use by the [County Land Use] Commission in fulfilling its duty to review airport and adjacent land development proposals.

An Airport Comprehensive Land Use Plan (CLUP) will provide a foundational plan in the long-term development of the County Airports property and the surrounding influence area of the County Airports. A CLUP will also discourage encroachment of incompatible development adjacent to the County Airports. The objective of the CLUP should be to forecast and realize the County Airports’ needs while protecting the health, welfare, and safety of community residents. The CLUP should also encompass the final uses of County Airport property and guide the day-to-day decisions concerning land uses at and adjacent to the County Airports. AMCG understands that Coffman Associates is currently working with the County to prepare an updated Airport Land Use Compatibility Plan.

B. Facility Maintenance Program (Both Airports)

AMCG recommends developing and implementing a comprehensive Airport maintenance program to ensure the airside facilities are maintained to FAA standards and industry best practices.

The County lacks a documented airport maintenance program, and items are left unresolved (e.g., hangar doors, roofs, floors, transition strips, etc.). AMCG understands the County conducts maintenance activities based on historical understanding of needs and responds to maintenance requests on an as needed basis. If current Airport management and staff conducting maintenance would leave the County Airports without training new maintenance personnel, the individual(s) assuming the maintenance responsibilities would be starting from ground zero without the benefit of previous knowledge.

Airport maintenance plays an important role in the continued safe and efficient operation of an airport. It is therefore recommended the County establishes a comprehensive on-going preventative maintenance program to address all aspects of the County Airport’s infrastructure. Preventive maintenance can be defined as those actions performed to detect, preclude, or mitigate the degradation of an infrastructure system or related components.

Preventive maintenance involves routinely scheduled activities intended to keep a system performing at its best and has the goal of preventing the system’s breakdown and extending its useful life. Establishing a preventative maintenance program will keep the maintenance personnel “ahead of the game” and



generally ensure the infrastructure functions more safely and efficiently. This results in reduced costs and improved performance. Vendor provided maintenance services should also be integrated into the preventative maintenance program along with vendor supervision protocols and procedures.

The comprehensive preventive maintenance program should identify daily, weekly, monthly, quarterly, and annual work tasks and objectives to ensure the County Airports are consistently maintained to FAA standards and industry best practices.

C. Electrical Plan (Pine Mountain Lake Airport)

AMCG recommends developing and finalizing an electrical plan at Pine Mountain Lake Airport.

During meetings with Airport management and staff as well as tenants, AMCG understands the electrical system at Pine Mountain Lake Airport is inadequate to ensure a consistent operating environment. The County should engage a professional firm to identify all necessary components, maintenance protocols, and necessary enhancements to support the continued operation of electrical systems (e.g., circuit boards, VASIs, etc.).

D. Pavement Maintenance Program (Both Airports)

AMCG recommends contracting with an airport engineering consultant to conduct an airfield safety inspection of the Airport in conformance with FAA Order 5010 Safety Inspection.

During inspection of documentation, AMCG was unable to identify any documents indicating the Airport had undergone a safety inspection as required by FAA Order 5010 Safety Inspection.

It is the responsibility of the County, as the airport sponsor, to manage the information describing the physical infrastructure and services of the County Airports and to ensure the airports are maintained and operated in full compliance with established FAA standards. An FAA (or State of California) inspector will conduct an annual inspection of the County Airports to ensure published data is current and provides information necessary for flight planning and safe aircraft operations. Further, inspectors report all conditions that present a hazard to safe aircraft operations. Examples of unsafe conditions may include, but are not limited to, unmarked obstructions, deteriorating or cracked runways or taxiways, objects in the safety areas, potential safety hazards on or near the runways, nonstandard or deteriorating airfield markings, etc.

The inspector generates a report listing all unsafe conditions and deviations from standards. It is incumbent on the airport sponsor to correct the unsafe conditions. Failure to do so could lead to FAA imposed operational restrictions that could adversely affect operations.

AMCG was unable to locate a contemporary FAA Order 5010 Safety Inspection report. Therefore, AMCG recommends the County hire an airport engineering consulting firm to conduct such an inspection to identify any deviation to standards or unsafe conditions and correct all deviations prior to the next FAA Order 5010 Safety Inspection.



E. Irrigation Plan (Columbia Airport)

AMCG recommends developing and implementing an irrigation plan for Runway 11/29 at Columbia Airport.

Runway 11/29 at Columbia Airport is a turf runway. During meetings with various parties, AMCG understands the presence of a turf runway is perceived as a strength for the Airport. However, AMCG also understands the current irrigation patterns do not adequately cover the entire runway to ensure consistent growing patterns. AMCG recommends the County develop an irrigation plan identifying additional equipment (if needed) to ensure consistent growing patterns for the entire runway.

F. Security Enhancements (Both Airports)

AMCG recommends conducting a comprehensive security assessment and implementing a security plan and emergency plan reflective of industry best practices.

Providing a secure airport operating environment for based tenants and transient operators should be of paramount importance for the County. AMCG noted deficiencies in Airport security measures including, but not limited to, lack of fencing, lack of video monitoring systems, lack of functioning vehicle gates, and lack of staff to conduct on-going security patrols.

The current approach to airport security does not meet industry best practices and presents significant liability exposure in the event of a security breach. The following is a list of items that should be considered during the security assessment:

- Enter into an agreement with law enforcement to conduct periodic security patrols.
- Install perimeter fencing.
- Properly maintain vehicle access points.
- Ensure existing access controls are always functional.

Following the assessment, a security plan and an emergency plan should be developed and implemented. While the security plan will focus on procuring necessary equipment and ensuring the County Airports are operated safely and securely, the emergency plan will establish policies, responsibilities, and procedures required to minimize the effect of an emergency on airport operations and reduce loss of life and property.

The County should train Airport management and staff, and other public safety agencies and develop safety protocols and response to airport emergencies. A table-top exercise and facility walk-through should be conducted on an annual basis to ensure first responders are familiar with the operational nuances of responding to an emergency in an airport environment. Further, this training will ensure Airport personnel have a thorough knowledge of safety and security practices relating to aircraft and vehicle operations as well as emergency response procedures. Additionally, Airport management and staff should be trained or attend industry events to fully understand potential security issues, concerns, and threats and be trained to identify unusual conditions or situations, notify appropriate agencies, and file necessary reports.



G. Airport Signage Program (Both Airports)

AMCG recommends the County install landside and airside signage at the County Airports.

At the current time, the Airport does not have a comprehensive or cohesive airport signage program. AMCG recommends the County implement a signage program consisting of the following elements:

Safety Signage	Signs should be installed on each vehicle/pedestrian gate leading to/from the Air Operations Area (AOA). Every vehicle and pedestrian gate should have a specific number that is posted on both sides of the gate for safety and informational purposes.
Commercial Signage	Standards should be developed by the County for commercial aeronautical signage (both for the landside and airside). These signs are critical for transient aircraft operators and visitors to the County Airports. These signs help customers to know where the various aeronautical businesses are located. Proper/uniform commercial signage also contributes to an overall professional appearance of the County Airports. The Airport Administration, Airport Maintenance facility, and FBO (at Columbia Airport) should have a prominent sign (both airside and landside), so visitors know where to go for transient line services, fueling, pilots' lounge, and administrative offices.
Directional Signage	There needs to be clearly visible directional signage placed at critical locations on the landside directing visitors to the County Airports and key areas of the County Airports (i.e., Airport Administration, Maintenance facility, commercial aeronautical operator locations, entrance/exit gates, etc.).
Monument Signage	The County Airports do not have professionally designed and constructed Airport monument signs.

H. Hangar/Helipad Development Feasibility Study (Columbia Airport)

AMCG recommends conducting a market assessment/feasibility study for future hangar/helipad development to determine the demand and financial feasibility of development at Columbia Airport.

There are limited County-owned hangars available for lease and many of the T-hangars need significant maintenance and repair. Based on the vacancy rate at Columbia Airport, the demand for hangar space may be greater than supply. Vacant areas of Columbia Airport are available to accommodate hangar development and/or helipad development.

The construction of hangars would increase the number of based aircraft, increase aircraft operations, and increase potential revenue generating opportunities for the County. Aircraft hangars come in a wide range of shapes and sizes to accommodate various types of aircraft and users. In addition to Box hangars, more T-hangars should be considered. Additionally, development of a helipad could further support the activity occurring at the Airport.

Hangar and helipad construction can represent a significant investment. Therefore, it is important to fully assess and analyze the demand and explore various funding/development scenarios before proceeding with a development project.



I. Instrument Approach Enhancements (Columbia Airport)

AMCG recommends development of an enhanced instrument approach to support night operations at Columbia Airport.

Currently, Columbia Airport is served by one non-precision approach (RNAV-GPS) for Runway 35. As specifically stated on the Instrument Approach Procedure, this approach procedure is not applicable for night operations. The Airport accommodates varied uses including the CalFire Air Attack Base and medical operations which would be supported through an enhanced instrument procedure supporting night operations.



IX. APPENDIX

A. Acronyms and Abbreviations

• <u>ACRP</u>	Airport Cooperative Research Program
• <u>AIP</u>	Airport Improvement Program
• <u>ALP</u>	Airport Layout Plan
• <u>AMCG</u>	Aviation Management Consulting Group
• <u>AOA</u>	Air Operations Area
• <u>AWOS</u>	Automated Weather Observation System
• <u>CFR</u>	Code of Federal Regulations
• <u>CIP</u>	Capital Improvement Plan
• <u>CLUP</u>	Comprehensive Land Use Plan
• <u>County Airports</u>	Columbia Airport and Pine Mountain Lake Airport
• <u>DOT</u>	State of California Department of Transportation
• <u>FAA</u>	Federal Aviation Administration
• <u>FBO</u>	Fixed Base Operator
• <u>FTE</u>	Full-Time Equivalent
• <u>GPS</u>	Global Positioning System
• <u>NPIAS</u>	National Plan of Integrated Airport Systems
• <u>PAPI</u>	Precision approach path indicator
• <u>PMCD</u>	Primary Management and Compliance Documents
• <u>RNAV</u>	Area Navigation
• <u>TDG</u>	Taxiway Design Group
• <u>TTF</u>	Through-the-Fence
• <u>VASI</u>	Visual approach slope indicator

B. Definitions

- Commercial – An activity undertaken with the intent to generate and/or secure earnings, income, or compensation (including exchange or barter of goods or services), and/or profit, whether such objectives are accomplished.
- General Aviation Airport – A public airport that does not have scheduled commercial air carrier service or has scheduled commercial air carrier services with less than 2,500 passenger enplanements per year.
- Itinerant Operation – Aircraft operations terminated at an airport which (1) arrive from outside the airport area or (2) depart the airport and leave the airport area.
- Local Operation – Aircraft operations which (1) remain in the local traffic pattern, (2) execute simulated instrument approaches or low passes at an airport, or (3) operate to or from an airport and a designated practice area within a 20-mile radius of the Air Traffic Control Tower.
- Through-the-Fence (TTF) – In general, TTF operations encompass the ground movement of aircraft to/from land adjacent to, but not part of, airport property to/from the airport's airside infrastructure (e.g., runways and taxiways). More specifically, TTF operations occur when an airport sponsor grants an entity ground access by an aircraft across the airport's property boundary to the airport's airside infrastructure and permission to engage in associated activities from property adjacent to the airport.



ELEMENT 2:

Pine Mountain Lake Airport (E45) Economic Impact Study





PINE MOUNTAIN LAKE AIRPORT (E45) ECONOMIC IMPACT STUDY

Prepared by Kimley Horn

ELEMENT 2 — TABLE OF CONTENTS

1	Introduction and Socioeconomic Context	2-1
2	Study Overview	2-2
2.1	Sources of Airport Activity that Generate Economic Impact	2-2
2.1.1	On-Airport Sources	2-3
2.1.2	Off-Airport Sources.....	2-3
2.2	Measures of Economic Activity	2-4
2.3	Levels of Economic Impact	2-5
2.4	Study Methodology	2-6
2.4.1	Data Collection	2-6
2.4.2	Using IMPLAN for the E45 AEIS.....	2-8
3	2022 Direct and Multiplier Economic Impacts of E45	2-9
3.1	Direct Impacts	2-10
3.2	Multiplier Impacts	2-10
4	2022 Total Economic Impacts of E45	2-10

LIST OF TABLES

Table 1-1	Summary of Socioeconomic Trends in Tuolumne County (2002-2042)	2-1
Table 1-2	Comparison of Socioeconomic Trends at the National and Tuolumne County Levels	2-2
Table 2-1	Defining Economic Impact Measures	2-4
Table 2-2	Defining Economic Impact Levels.	2-5
Table 2-3	Information Needed for Each Activity Source	2-7
Table 2-4	Average per Visitor Spending Amounts, by Visitor Type, Adjusted to 2022 Dollars	2-8
Table 2-5	Average Per Visitor Per Trip Spending for E45.....	2-8
Table 3-1	2022 Direct Impacts of All Airport Activity	2-10
Table 3-2	2022 Multiplier Impacts of All Airport Activity	2-10
Table 4-1	2022 Total Impacts of All Airport Activity	2-11

LIST OF FIGURES

Figure 2-1	Sources of Airport Activity that Generate Economic Impact	2-2
Figure 2-2	Relationship Between Payroll and Output.....	2-4
Figure 2-3	Economic Impact Analysis Process	2-6



1. INTRODUCTION AND SOCIOECONOMIC CONTEXT

As part of a broader effort undertaken by Tuolumne County to better understand the activity and operation of the Pine Mountain Lake Airport (E45) an airport economic impact study (AEIS) was conducted. This AEIS provides an estimate of the annual economic contribution resulting from activity occurring on and off the Airport. The study uses 2022 as the base year for the analysis as that was the most recent year for which a full year of data was available and is representative of the current conditions at the Airport.

E45 was established in 1970 and is a publicly owned, public-use general aviation (GA) facility in southwestern Tuolumne County with a single runway. The Airport is located three miles northeast of Groveland in the Pine Mountain Lake community. Due to the Airport's location in proximity to Yosemite National Park, E45 provides easy access to the park for visitors and serves as a critical access point for emergency response scenarios, such as fires and/or medical emergencies. The Airport is used most frequently by visitors to the area, for emergency response purposes, and by those who live adjacent to the Airport in hangar homes. Several of the residents of the hangar homes own and operate businesses from their homes and use the Airport to commute for work, conduct other business operations, and/or for other personal travel reasons.

Tuolumne County's population remained relatively consistent between 2002 and 2022 but is anticipated to grow almost four percent over the next 20 years, as shown in **Table 1-1**. In 2022 the population in Tuolumne County was estimated at 55,912 people, according to data provided by Woods and Poole Economics, Inc.¹ Employment in Tuolumne County also remained relatively consistent between 2002 and 2022, however, it is anticipated that there will be significant growth over the next 20 years, with a projected increase of approximately 14 percent between 2022 and 2042. There was an almost 22 percent growth in the County's gross regional product (GRP) between 2002 – 2022, and it is anticipated that the GRP will continue to increase significantly over the next 20 years, by approximately 17 percent.

Table 1-1 | Summary of Socioeconomic Trends in Tuolumne County (2002-2042)

Socioeconomic Indicator	Historic: 2002	Current: 2022	Future: 2042	2002-2022 % Change	2022-2042 % Change	2002-2042 % Change
Population	55,850	55,912	57,991	0.1%	3.7%	3.8%
Employment	25,514	26,000	29,712	1.9%	14.3%	16.5%
GRP	\$3,481,940,000	\$4,243,100,000	\$4,987,220,000	21.9%	17.5%	43%

Sources: Woods and Poole Economics, Inc., (2002-2042), 2023; Kimley-Horn, 2023.

The 40-year compound annual growth rates (CAGR) of these socioeconomic indicators (from 2002 to 2042) are presented in **Table 1-2** alongside the CAGR for the same indicators at the national level. As shown, the annual growth rate of population in the United States (U.S.) is projected to be 0.7 percent, which is faster than the annual growth rate of population anticipated in Tuolumne County, which is 0.1

¹ Woods and Poole Economics, Inc. is an industry-accepted database that provides long-term county economic and demographic data projections.



percent. Employment and gross domestic product (GDP)²/GRP are expected to grow at a significantly faster annual rate at the national level compared to Tuolumne County, as well. Employment is expected to grow at an annual rate of 1.2 percent nationwide, compared to Tuolumne County at 0.4 percent. GDP is expected to grow at the national level at an annual rate of approximately 2.0 percent between 2002 and 2042, compared to the 0.9 percent GRP growth rate anticipated in Tuolumne County over the same time. This socioeconomic background provides context for understanding the environment in which E45 operates and is helpful when interpreting the results of this AEIS.

Table 1-2 | Comparison of Socioeconomic Trends at the National and Tuolumne County Levels

Indicator	2002-2042 U.S. CAGR	2002-2042 Tuolumne County CAGR
Population	0.7%	0.1%
Employment	1.2%	0.4%
GDP/GRP	2.0%	0.9%

Sources: Woods and Poole Economics, Inc., (2002-2042), 2023; Kimley-Horn, 2023.

2 STUDY OVERVIEW

Before presenting the results of the AEIS and the 2022 economic contributions of E45, it is important to first provide an overview of what an AEIS encompasses, such as what activities generate economic impact, what measures are used, how results are communicated at different levels, and the methodology used. The information presented in this section is critical for understanding the results of this AEIS.

2.1 SOURCES OF AIRPORT ACTIVITY THAT GENERATE ECONOMIC IMPACT

Airports act as economic drivers for the communities and regions within which they are located. Airports provide employment opportunities, support local business development, and provide critical air transportation for visitors, professionals, area residents, and goods and services. This section details the on- and off-airport activities that generate economic impacts and were accounted for in the economic impact analysis of E45, which are also shown in **Figure 2-1**.

Figure 2-1: Sources of Airport Activity that Generate Economic Impact



Source: Kimley-Horn, 2023.

² GDP is an equivalent indicator to GRP, except GDP is calculated at the national level instead of the regional level.



2.1.1 On-Airport Sources

Airport Administration: Activities associated with the management and operation of an airport are included in this source of activity. This includes employment by the airport sponsor, and contracted services (if applicable), along with other operating expenditures and revenues. Airport sponsor staff perform a variety of duties such as airport management, airport business operations, airport maintenance and other operations duties. In some cases, airports contract out certain services such as landscape and lawn maintenance, laundry services, security services, and more. Employment associated with these contracted services is also accounted for in this activity source.³

Airport Capital Expenditures: Airports incur construction costs over time, whether for major maintenance needs or for facility improvements and expansions. These construction projects support employment at an airport during the duration of the project and generate subsequent economic activity when materials are purchased locally and regionally, which is captured in this analysis.⁴

Business Tenants: Airport tenants are businesses located on an airport, that employ staff at their airport location. Airport tenants may include Fixed-Base Operators (FBOs), Maintenance Repair and Overhaul (MRO) providers, concessionaires, retailers, rental car operators, flight schools, and other on-airport businesses. This category does not include private aircraft owners who hangar their aircraft at an airport and are not associated with an on-airport business. Those impacts are accounted for under “Airport Administration” as an airport may receive revenues from hangar leases and may also generate revenue from fuel sales.

E45 is a unique airport where several homes were built adjacent to the Airport which have through-the-fence (TTF) access to the airfield. These homes are known as hangar homes as many include individual hangars for storing owners’ aircraft. During this study, it was discovered that many of the owners of these hangar homes own and operate small businesses out of their homes and rely on access to the Airport to conduct their business operations, similar to traditional airport tenants. As such, the economic impact of these “hangar home businesses” is accounted for in this Tenant category. It is important to note that this activity category also includes the impacts associated with capital expenditures incurred by tenants and hangar home businesses.

2.1.2 Off-Airport Sources

Visitor Spending: The beautiful surroundings of the Airport and the proximity to Yosemite National Park bring visitors to the area year-round. Visitors that travel to the area via E45 spend money at restaurants, hotels, the National Park, and other amenities and recreational activities in the area. This spending supports employment in the area at local establishments and suppliers and generates economic impact. It is important to note that this activity source only captures impacts generated by “true visitors,” meaning those who arrive to the area via E45 from outside of Tuolumne County and bring “new money” into the region. Spending at the Airport on any services is not included in this source, but it is accounted for as part of the on-airport activity generated by tenants and/or airport administration.

³ Note that no contracted services were reported for E45 in 2022.

⁴ Note that minimal capital expenditures were reported for E45.



2.2 MEASURES OF ECONOMIC ACTIVITY

Three common economic impact measures are used in this study, including jobs, payroll, and output, which are defined in **Table 2-1**.

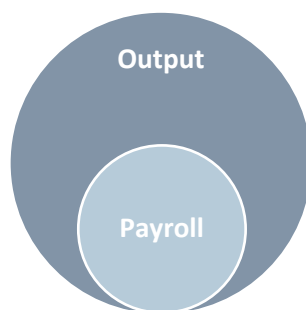
Table 2-1 | Defining Economic Impact Measures

Measure		Definition
	Jobs	Total number of persons employed that are associated with output and payroll, regardless of whether they are full- or part-time.
	Payroll	Total employment compensation generated by the identified jobs, including wages and benefits. Payroll may also be referred to as “labor income” or “total compensation.”
	Output	Incorporates expenditures needed to administer airports, sales of goods and services by airport tenants, budget expenditures by public sector agencies located on airports, cost of capital expenditures, and visitor spending. Output may also be referred to as “business revenues” or even “economic impact.”

Sources: Kimley-Horn, 2023.

It is important to note that the economic impact measure of “jobs” is the only measure not presented in a dollar value. Payroll and output are presented in terms of dollars; however, these values are not additive and cannot be summed together. Payroll and output are interrelated, where payroll comprises a fraction of output, as shown in **Figure 2-2**.

Figure 2-2: Relationship Between Payroll and Output



Source: Kimley-Horn, 2023.

Now that the sources of economic impact and economic impact measures have been defined, the following subsections present the levels of impact (direct, indirect, and induced). Following these definitions is the description of the study’s methodology.



2.3 LEVELS OF ECONOMIC IMPACT

Economic impacts are commonly presented at three different levels to distinguish the composition of total impacts: direct, indirect, and induced. Indirect impacts are sometimes referred to as “supplier sales” and represent the impacts generated when an airport or airport-related or reliant business purchases goods and services from local suppliers or businesses. Induced impacts are sometimes referred to as “income respending” and represent the impacts generated when airport and airport-related employees spend their wages in the local economy. The combination of indirect and induced impacts is referred to collectively as “multiplier impacts.” **Table 2-2** provides additional definition of the three levels of economic impact, along with examples of each.

Table 2-2 | Defining Economic Impact Levels.

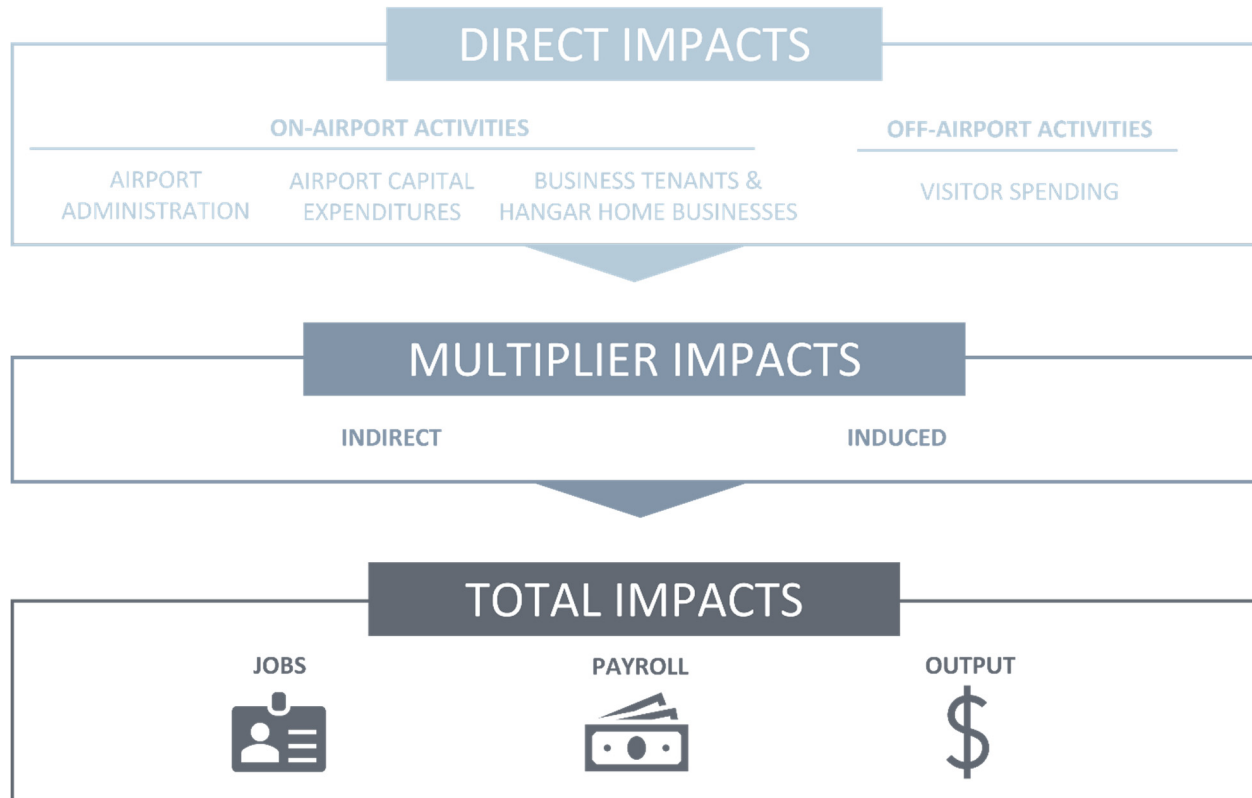
Level		Definition
	Direct	The first effects that occur from on- and off-airport activity due to airport operations, tenant activity, capital expenditures, and visitor spending. Examples of this include the wages of an airport tenant’s staff, or the revenue of a local restaurant generated by visitors arriving to the area via the airport.
Multiplier Impacts	 Indirect	Impacts that are generated when a share of direct business revenues is used to buy goods and services from other businesses in Tuolumne County. These impacts may also be referred to as “supplier sales.” An example of this is the local restaurant from the scenario above purchasing bread from a local bakery. Another example is a tenant hiring out tax preparation services from a local accountant.
	 Induced	Impacts that are generated when income earned by workers from direct and indirect transactions is spent on goods and services in Tuolumne County. These impacts may also be referred to as “income re-spending.” Examples include employees (such as restaurant or tenant employees from the scenarios above) spending wages on groceries for their families at a local supermarket or on daycare for their children at a neighborhood center.
	Total	Total impacts are derived from the sum of the direct, indirect, and induced impacts.

Source: Kimley-Horn, 2023.

Figure 2-3 presents an overall picture of how the sources of airport activity, economic impact measures, and economic impact levels are used to produce and present the results of this AEIS. The direct impacts of the on- and off-airport activity presented in **Section 2.1** are used along with the IMPLAN economic model to calculate the indirect and induced impacts (multiplier impacts), which are then summed to present total impacts across the three measures: jobs, payroll, and output. More information on the use of IMPLAN and the generation of multiplier impacts can be found in **Section 2.4.2**.



Figure 2-3: Economic Impact Analysis Process



Source: Kimley-Horn, 2023.

2.4 STUDY METHODOLOGY

The methodology used to calculate the economic impact of E45 required a comprehensive data collection process and the use of the IMPLAN economic model. The following sections offer additional detail on both of those components.

2.4.1 Data Collection

To develop an accurate picture of the total economic contribution of E45, a significant and comprehensive data collection effort was undertaken. The primary data sources included Tuolumne County staff and business tenants (including hangar home business owners). While most of the information necessary to conduct the analysis was obtained from primary sources, some secondary sources were consulted as needed, including the Federal Aviation Administration (FAA), ESRI Business Analyst, IMPLAN, and other publicly available sources. **Table 2-3** presents the data points needed for each activity source.



Table 2-3 | Information Needed for Each Activity Source

Location	Source of Activity	Data Points Needed
On-Airport	Airport Administration	Airport-sponsored Employment - Number of employees by type/role Contracted Employment/Firms - Number of employees by type/role or value of contract Operating Expenses - Payroll (including wages and benefits) * - Routine operating and maintenance costs
	Airport Capital Expenditures	Airport Construction Historic annual capital improvement project expenditures (2018-2022)
	Business Tenants	Tenant Employment and Capital Expenditures - Number of employees per business - Types of business/industry - Payroll (including wages and benefits) * - Historic annual capital expenditures (2018-2022) Hangar Home Businesses - Number of employees per business - Type of business/industry - Payroll (including wages and benefits) * - Historic annual capital expenditures (2018-2022)
Off-Airport	Visitor Spending	Number of Annual True Visitors - Total number of itinerant operations - Percent of those operations that are transient - Typical aircraft size used in transient operations - Typical number of passengers per transient operation Average spending per visitor, per trip

Source: Kimley-Horn, 2023.

It is important to note that the Airport and tenants were asked to report historic capital expenditures over a multi-year period so that an annual average capital expenditure amount could be calculated. Often, an airport (as well as tenants) may have years with no capital expenditures or very high capital expenditures. By averaging capital expenditures over multiple years, the extreme highs and lows are balanced, and the result is a reasonable, accurate spend amount that isn't over- or under-estimated.

The information collected for visitor spending that is presented in **Table 2-3** was used to determine the impacts of visitor spending that likely would not have occurred without E45. To identify the number of true visitors, and the average amount of money that each visitor spends per trip, a close review of a 2019 tourism report developed for Mono County, *Profile of Mono Visitors and Economic Impacts of Tourism* was conducted since there were no tourism spending data available for Tuolumne County. Mono County neighbors Tuolumne County and it is assumed that spending amounts and patterns are comparable for the purposes of this estimate. The Mono County study provides a breakdown of spending by visitors staying less than a day and those staying overnight by type of accommodation (hotel, camping, etc.). **Table 2-4** provides an overview of these values adjusted to 2022 dollars to align with the base year of this AEIS. It is important to note that these spend amounts are on a "per day" basis. The Mono County study estimates that the average length of stay for visitors staying overnight was 1.89 days, therefore the overnight visitor spending must be multiplied by 1.89 to calculate the average "per trip" spending. This adjustment is also reflected in **Table 2-4**.

**Table 2-4 | Average per Visitor Spending Amounts, by Visitor Type, Adjusted to 2022 Dollars**

Visitor Type	Average Spend Per Visitor/Day in 2019 Dollars	Average Spend Per Visitor/Day Adjusted to 2022 Dollars	Average Length of Stay	Average Spend Per Visitor, Per Trip
Overnight – Hotel	\$229	\$269	1.89	\$508
Day Trip	\$37	\$44	1.00	\$44

Sources: *Profile of Mono Visitors and Economic Impacts Tourism, 2019*; Bureau of Labor Statistics – Inflation Calculator, 2022; Kimley-Horn, 2023.

Based on overnight stay records provided by the County, approximately 44 percent of visitors traveling via E45 stay the night (assumed to be lodging in hotels) and the other 56 percent of visitors are only staying for the day. **Table 2-5** presents the weighted average of the overnight – hotel and day trip visitor spending values, which when summed, produces the average per visitor spending amount of \$249.

Table 2-5 | Average Per Visitor Per Trip Spending for E45

Visitor Type	Average Spend Per Visitor, Per Trip	% of Visitor Total	Weighted Average of Spend per Visitor, Per Trip
Overnight – Hotel	\$508	44%	\$224
Day Trip	\$44	56%	\$25
Average Per Visitor, Per Trip Spend	N/A	100%	\$249

Sources: *Profile of Mono Visitors and Economic Impacts Tourism, 2019*; Kimley-Horn, 2023.

2.4.2 Using IMPLAN for the E45 AEIS

As discussed in previous sections, IMPLAN is the economic modeling software used for this AEIS. IMPLAN is the most widely used input-output (I/O) economic model in the U.S. The model is built using data from the Bureau of Economic Analysis (BEA), Bureau of Labor Statistics (BLS), U.S. Census, and U.S. Department of Commerce. IMPLAN Version 6.4, the most recent version, was used to model the economic impact of E45, which reflects the current economic measures (i.e., jobs, payroll, and output) for 564 industry classifications. These IMPLAN industry classifications roughly correspond to two- and five-digit industry groups recognized in the North American Industry Classification Systems (NAICS). The 2022 IMPLAN model calibrated for this AEIS was specific to the economy and industry relationships within Tuolumne County. The data collected for each source of activity presented in **Table 2-3** were used along with the IMPLAN model to calculate the total economic output of E45. Three ways the IMPLAN model was used are described here:

1. Fill in data gaps to estimate direct impacts: IMPLAN can estimate payroll and output impacts (expenditures or revenues) for airport administration and tenants when only employment information is provided. Alternatively, if only direct expenditures (or revenues) are provided then IMPLAN can work backwards to estimate the number of employees (this is not common as businesses are much more likely to report the number of employees rather than their sales).



For activities where employment is unknown, but total expenditures are provided or calculated (this is the case for airport and tenant capital expenditures and visitor spending), IMPLAN works backwards to generate employment estimates for these activities. As an example, for an airport construction project, the total cost of construction will likely be known, but the number of contractors out on the job site working on the project isn't likely to be documented.

The payroll, business sales, and expenditures per worker ratios are derived primarily from county-specific U.S. Department of Commerce and Department of Labor data sets calibrated in the model. These ratios reflect a measure of productivity (business output per employee) and income levels based on the number of jobs for each industry on-airport and in hospitality sectors (for visitor spending).

2. Apply retail margining: Retail margining is applied when estimating visitor spending impacts as it is necessary to determine, of the total amount of money spent by visitors, how much reflects the value of the items sold and how much reflects the portion of the sold item that is considered actual revenue for the store. The difference between the cost of the item for the retailer, and the value of the item once sold is referred to as the "mark-up," or the margin costs. Only the mark-up produces revenue and economic activity for local retailers. It is the revenues generated from the mark up, only, that supports employee payroll and operating costs of the business (e.g., rent, utilities, capital, and other expenses). The gross revenue collected by the retail business or industry does not impact or support employee payroll or operating costs of the business. To isolate the revenues that accrue to retailers, the margin percentage was applied to the value of all retail goods sold, as calculated within the IMPLAN model.

3. Derive multiplier impacts: IMPLAN's I/O model traces the flows of money in an economy using the patterns of industry-to-industry purchases and sales, which generates the indirect impacts and traces the patterns of householding spending to generate induced impacts. These patterns are used to demonstrate how revenues earned in direct transactions have ripple impacts throughout an economy. The IMPLAN model tracks the circulation of output using these industry relationships to calculate the level that indirect and induced activity (multiplier impacts) support jobs and payroll for the people in Tuolumne County and support additional revenues for businesses.

3 2022 DIRECT AND MULTIPLIER ECONOMIC IMPACTS OF E45

The following sections present the direct and multiplier impacts (indirect and induced) of on- and off-airport activity occurring at E45 in 2022. The results presented within each section account for all Airport activity described in **Section 2.1**, including airport administration, airport capital expenditures, business tenant activity (including capital expenditures), and visitor spending. As a note, the results presented in these sections are in 2022 dollars.



3.1 DIRECT IMPACTS

The direct impacts associated with on- and off-airport activity at E45 in 2022 are presented in **Table 3-1**. As shown, there are 25 direct jobs supported by the airport administration, airport capital expenditures, business tenants, and visitor activity in 2022. These 25 direct jobs contribute approximately \$2.12 million in payroll and approximately \$4.00 million in output to the broader Tuolumne County region. Within these direct impacts, tenants (and hangar homes businesses) contribute approximately 20 jobs, generating \$1.94 million in payroll and \$3.61 million in output. The remaining direct impacts are generated from airport administration, airport capital expenditures, and visitor spending.

Table 3-1 | 2022 Direct Impacts of All Airport Activity

	Jobs	Payroll	Output
Direct Impacts	25	\$2,118,400	\$3,999,300
Notes: Dollar values were rounded to the nearest hundred. Dollars are presented in 2022 dollars.			

Sources: IMPLAN V6.4, 2022; Tuolumne County, 2022; Pine Mountain Lake Airport, 2022; Kimley-Horn, 2023.

3.2 MULTIPLIER IMPACTS

As discussed in **Section 2.3**, the multiplier impacts include the sum of indirect and induced impacts. These impacts represent the spin-off effects from the direct impacts presented in **Section 3.1**. As shown in **Table 3-2**, the indirect impacts of all airport-related activity support seven jobs within Tuolumne County, which generated \$634,000 in payroll, and \$1.23 million in output. The induced impacts of all airport-related activity are slightly higher than the indirect, supporting eight jobs with a payroll of \$766,200, which generates \$1.47 million in output. When combined, the 2022 multiplier impacts of all airport-related activity supports an additional 15 jobs in Tuolumne County, with a payroll of \$1.40 million, and an output of nearly \$2.70 million.

Table 3-2 | 2022 Multiplier Impacts of All Airport Activity

	Jobs	Payroll	Output
Indirect Impacts	7	\$634,000	\$1,228,400
Induced Impacts	8	\$766,200	\$1,466,800
Combined Multiplier Impacts	15	\$1,400,300	\$2,695,200
Notes: Totals may not sum due to rounding. Dollar values were rounded to the nearest hundred. Dollars are presented in 2022 dollars.			

Sources: IMPLAN V6.4, 2022; Kimley-Horn, 2023.

4 2022 TOTAL ECONOMIC IMPACTS OF E45

As discussed in **Section 2.3**, the total economic impact results are the sum of the direct, indirect, and induced impacts, which were presented in **Sections 3.1** and **3.2**, respectively. The impacts presented in **Table 4-1** are cumulative of all activity included in this analysis for calendar year 2022. The total annual economic impact of E45 in 2022 was 40 jobs within Tuolumne County, with an associated payroll of \$3.52 million. The airport-related activity is estimated to have generated approximately \$6.69 million in total



output within Tuolumne County. It is important to note that these impacts are annual figures and are expected to generally remain consistent from year to year barring any major changes in airport employment, capital expenditures, tenant activity, and visitor spending which could increase or decrease the Airport's total economic contribution within the County.

Table 4-1 | 2022 Total Impacts of All Airport Activity

	Jobs	Payroll	Output
Direct Impacts	25	\$2,118,400	\$3,999,300
Multiplier Impacts	15	\$1,400,300	\$2,695,200
<i>Indirect Impacts</i>	7	\$634,000	\$1,228,400
<i>Induced Impacts</i>	8	\$766,200	\$1,466,800
Total Impacts	40	\$3,518,700	\$6,694,400

Notes: Totals may not sum due to rounding. Dollar values were rounded to the nearest hundred. Dollars are presented in 2022 dollars.

Sources: IMPLAN V6.4, 2022; Tuolumne County, 2022; Pine Mountain Lake Airport, 2022; Kimley-Horn, 2023.



ELEMENT 3:

Pine Mountain Lake Airport (E45) Rent Study





PINE MOUNTAIN LAKE AIRPORT (E45) RENT STUDY

Prepared by Aviation Management Consulting Group

January 5, 2024
Kim MacFarlane, P.E.
Director of Public Works
Tuolumne County
2 South Green Street
Sonora, California 95370-4618

RE: Pine Mountain Lake Airport Rent Study

Dear Kim:

In accordance with your request and authorization, this writing transmits Aviation Management Consulting Group's (AMCG's) appraisal report in summary format for certain land and improvements located at Pine Mountain Lake Airport (Airport).

The purpose of this assignment was to determine the fair market value (FMV) of rent for the Subject Properties which are owned by Tuolumne County (County). The effective date for this report is the date of inspection (June 13, 2023). The conclusions of AMCG's analysis and a summary of pertinent data are outlined in the Executive Summary.

The analyses, conclusions, and values stated in the report are subject to the assumptions, hypothetical conditions, and limiting conditions described in this report. The extent of AMCG's investigation and analyses are described in the Scope of the Work section of this report. The analyses and report have been prepared for the sole use of the County. The accompanying summary report describes AMCG's conclusions and analyses. To understand the analyses and conclusions, the report must be read in its entirety; no part of the report is valid without the support of the other sections of the report.

The appraisal, the analyses, and the report are intended to comply with the provisions of the Uniform Standards of Professional Appraisal Practice (USPAP) in force as of the appraisal date, applicable to the development and reporting of this FMV rental analysis. The report itself is intended to be consistent with the requirements of USPAP Standards Rule 2-2. Additionally, the execution of the assignment is intended to comply with the supplemental standards enacted by the Federal Aviation Administration, specifically instructions pertinent to FMV analyses as described in the Compliance Guide Letter 2018-3 and any additional instructions included in the engagement documents. Supporting documentation is retained in our files.

Helping your aviation management excellence,

Matthew F. Fish, MAI
Appraiser
AMCG
Temporary License No. 3011911-001

David C. Benner, C.M.
Managing Consultant
AMCG



ELEMENT 3 — TABLE OF CONTENTS

- V. SUBJECT PROPERTIES OVERVIEW**
 - A. Subject Properties
 - 1. Executive Hangar
- I. EXECUTIVE SUMMARY**
- II. INTRODUCTION**
 - A. Scope of Work
 - B. Project Approach
 - C. Intended Use and Intended User
 - D. Market Rent Defined
 - E. Key Underlying Assumptions
- III. COMMUNITY OVERVIEW**
 - A. Airport Sponsor
 - B. Geographic Location
 - C. Demographics
 - D. Business and Industry
 - E. Economic Factors
- IV. SUBJECT AIRPORT OVERVIEW**
 - A. Airport Description
 - B. Aircraft Operations
 - C. Based Aircraft
 - D. Commercial Operators
- V. SUBJECT PROPERTIES OVERVIEW**
 - A. Subject Properties
 - B. Executive Hangar
 - C. Aeronautical Improved Land and Tiedowns
- VI. STUDY FINDINGS**
 - A. National Data
 - B. Regional Data (FAA Western Pacific Region)
 - C. Comparable Airport Data
 - D. Competitive Airport Data
- VII. RENTAL RATE SUMMARY**
 - A. Rental Rate Conclusions (By Component)
 - B. Executive Hangar
 - C. Aeronautical Improved Land
 - D. Small and Medium Tiedowns
 - E. Rental Rate Conclusions



VIII. APPENDIX

- A. Certifications
- B. Limiting Conditions
- C. Definitions and Acronyms
- D. Subject Properties Identification Map
- E. Subject Properties Photographic Survey
- F. Temporary Appraisal License



I. EXECUTIVE SUMMARY

- Airport:** Pine Mountain Lake Airport
20980 Elderberry Way
Groveland, California 95321
- Scope of Work:** This summary report conveys Aviation Management Consulting Group’s opinion of market rent for certain land and improvements (Subject Properties) located at Pine Mountain Lake Airport which are currently leased or available for lease from Tuolumne County.
- Subject Properties:** The components of the Subject Properties include Executive Hangar, Small and Medium Tiedowns, and Aeronautical Improved Land.
- Date of Report:** January 5, 2024
- Effective Date:** June 13, 2023
- Methodology:** An opinion of market rent for the Subject Properties was developed based on an analysis of the information and data obtained for similar properties from national, regional, comparable, and competitive airports (which is summarized in Section VI. Study Findings).
- Rental Rate Conclusions:** **Table 1** identifies AMCG’s opinion of market rent for the Subject Properties.

Table 1 | Rental Rate Conclusions

Rental Rate Conclusions				
Component	Identification	Size (SF)	Market Rent Opinion	
			PSF/YR	PU/MO
Executive Hangar	Hangar 1	1,512	\$4.15	\$523.00
	Hangar 2	1,512	\$4.15	\$523.00
	Hangar 3	1,440	\$4.15	\$498.00
	Hangar 4	1,440	\$4.15	\$498.00
	Hangar 5	1,440	\$4.15	\$498.00
Aeronautical Improved Land	N/A	Up to 49,999	\$0.35	N/A
		50,000 - 249,999	\$0.33	
		250,000 - 999,999	\$0.37	
		1,000,000 and greater	\$0.25	
Tiedowns	Small (Nested)	N/A	N/A	\$70.000
	Medium (Nested)			\$90.000



II. INTRODUCTION

A. SCOPE OF WORK

This summary appraisal report conveys Aviation Management Consulting Group's (AMCG's) opinion of fair market value (FMV) of certain land and improvements (Subject Properties) located at the Pine Mountain Lake Airport (Airport) which are currently leased or available for lease from Tuolumne County (County).

The County is required, by the Federal Aviation Administration (FAA) *Airport Sponsor Assurances*, to "maintain a fee and rental structure for the facilities and services at the airport[s] which will make the airport[s] as self-sustaining as possible under the circumstances existing." Further, FAA Regulation Identifier Number (RIN) 2120-AF90, *Policy Regarding Airport Rates and Charges*, states that "rates, fees, rentals, landing fees, and other service charges ('fees') imposed on aeronautical users for the aeronautical use of the airport ('aeronautical fees') must be fair and reasonable." As such, the market rent opinions outlined in this *Airport Rent Study* are fair, reasonable, and can be consistently applied.

The FAA indicates that "reasonable methodologies may include, but are not limited to, historic cost valuation, direct negotiation with aeronautical users, or objective determinations of fair market value" which are further described below:

- Historic Cost Valuation – a historic cost valuation, as outlined in the *Policy Regarding Airport Rates and Charges*, "must allocate capital and operating costs among cost centers" in accordance with a reasonable, consistent, and transparent methodology as follows: (1) "costs of airfield facilities and services directly used by the aeronautical users may be fully included in the rate base" and (2) "costs of airport facilities and services used for both aeronautical and non-aeronautical uses (shared costs) may be included in the rate base if the facility or service in question supports the airfield activity reflected in that rate base". The rate base is defined as the "total of all costs of providing airfield facilities and services to aeronautical users (which may include a share of public-use roadway costs allocated to the airfield in accordance with this policy [*Policy Regarding Airport Rates and Charges*]) that may be recovered from aeronautical users through fees charged for providing airfield aeronautical services and facilities." While the historic cost valuation is an acceptable methodology from the FAA's perspective (and typically applied to air carrier service providers), this approach may result in a rental rate unreflective of similar aeronautical-use improvements available at comparable and competitive airports. As such, this approach was not deemed most appropriate.
- Direct Negotiation – The *Policy Regarding Airport Rates and Charges* is non-descriptive in terms of the methodology for initiating and completing a negotiation process. A negotiation, by definition, is to confer with another party to arrive at a settlement of a matter; in this case, rental rates for aeronautical-use improvements. A negotiation process can result in a market transaction if (1) it is an open market, (2) the buyer (tenant) and seller (County) are acting prudently and knowledgeable, and (3) the price is not affected by undue stimulus. However, as stated in the *Airport Sponsor Assurances*, each tenant (commercial or non-commercial) "shall be subject to the same rates, fees,



rentals, and other charges as are uniformly applicable” to other tenants for “the same or similar uses of such airport and utilizing the same or similar facilities.” For this reason, a direct negotiation methodology was not deemed most appropriate to determine a rental rate structure that is equitable for all similarly situated aeronautical-use tenants.

- Objective Determinations of Fair Market Value – Fair market value (FMV), as defined by Appendix Z of FAA Order 5190.6B *Airport Compliance Manual*, is “the highest price estimated in terms of money that a property will bring if exposed for sale in the open market allowing a reasonable time to find a purchaser or tenant who buys or rents with knowledge of all the uses to which it is adapted and for which it is capable of being used. It is also frequently referred to as the price at which a willing seller would sell and a willing buyer buy, neither being under abnormal pressure. FMV will fluctuate based on the economic conditions of the area.” The purpose of this *Airport Rent Study* is to determine FMV of rent. As such, pertinent lease data and rental rates being charged for similar properties at national, regional, comparable, and competitive airports were analyzed. The development of the Sales Comparison Approach, Cost Approach, and other sections of the Income Approach to FMV were not pertinent. A formal highest and best use analysis was not required, as a rental analysis for existing land and improvements is the primary consideration.

Consistent with the *Airport Sponsor Assurances*, each tenant should be subject to the same rental rates as are uniformly applicable to other tenants utilizing the same or similar improvements for aeronautical purposes. It is recognized that the size, access, amenities, and condition of the land and improvements (as applicable) may vary and as a result, the opinion of market rent may vary as well. However, the County will not charge unjustly discriminatory rental rates.

B. PROJECT APPROACH

To achieve the scope of work, AMCG completed the following work plan:

1. developed a profile of the Airport,
2. conducted a personal inspection of the Subject Properties,
3. identified comparable and competitive airports utilizing the profile of the Airport,
4. obtained rental rates (and related information) for aeronautical uses from the Airport as well as comparable and competitive airports identified,
5. analyzed the data obtained from the Airport as well as comparable and competitive airports,
6. analyzed national and regional data; and
7. developed an opinion of market rents for the Subject Properties based on the preceding analysis in conjunction with the Limiting Conditions outlined in the Appendix.

In drawing opinions of market rent for the Subject Properties, consideration was given to those factors that typically affect market rents for on-airport, aeronautical properties (e.g., property use, attributes, restrictions, limitations, etc.). Beyond this, AMCG’s opinion of market rent for the Subject Properties has been formed based on a comparative analysis of current rents for aeronautical-use properties at national, regional, comparable, and competitive airports. The rental rates currently charged for the Subject Properties by the County were not included in the national, regional, comparable, or competitive analysis.



Market rents for off-airport properties were not utilized as this approach is highly problematic due to the different types of use. Off-airport properties and on-airport, aeronautical properties do not exhibit the same bundle of rights. It is very difficult, if not impossible, to determine the adjustment applied to unencumbered off-airport rental rates to reflect the constraints imposed by the FAA, the airport sponsor, and others pertaining to the development and/or use of on-airport, aeronautical properties.

C. INTENDED USE AND INTENDED USER

The purpose of this appraisal report is to set forth the investigations and analyses leading to the opinion of FMV rent for the Subject Properties located at Pine Mountain Lake Airport (Airport) in Groveland, California.

The intended user of this report is Tuolumne County (County) for internal decision-making related to establishing the market rent for the Subject Properties.

D. MARKET RENT DEFINED

Market rent is defined as “the most probable rent that a property should bring in a competitive and open market under all conditions requisite to a fair lease transaction, the lessee and lessor each acting prudently and knowledgeably, and assuming the rent is not affected by undue stimulus. Implicit in this definition is the execution of a lease as of a specified date under conditions whereby:

- Lessee and lessor are typically motivated;
- Both parties are well informed or well advised, and acting in what they consider their best interests;
- Payment is made in terms of cash or in terms of financial arrangements comparable thereto; and
- The rent reflects specified terms and conditions typically found in that market, such as permitted uses, use restrictions, expense obligations, duration, concessions, rental adjustments and revaluations, renewal and purchase options, frequency of payments (annual, monthly, etc.), and tenant improvements (TIs).”¹

E. KEY UNDERLYING ASSUMPTIONS

The market rent opinions conveyed in this summary report are based on the lessee having full and continued access to the Airport’s airside and landside infrastructure. Additionally, the analysis was based on an evaluation of modified gross lease rates² (Executive Hangars and Tiedowns).

¹ Dictionary of Real Estate Appraisal, Appraisal Institute, Seventh Edition, 2022, Page 116-117.

² Modified gross lease rates, by definition, occur when the lessor pays for a portion of maintenance, utilities, insurance, and/or taxes associated with the Subject Properties.



Market rents are driven by the amount a willing buyer (lessee) pays to a willing seller (lessor) to rent or lease a property. To the extent that local economic factors affect rental rates at the national, regional, comparable, and competitive airports, these economic factors will be reflected in the rental rate conclusions. As such, AMCG has identified and analyzed (on a comparative basis) the rents charged and paid for similar properties (by component) at a cross-section of airports to derive the market rent opinions for the Subject Properties.

AMCG recognizes that there are differences between the Airport and the comparable airports. Some of the comparable airports exhibit superior characteristics and some exhibit inferior characteristics. To identify airports that were considered most comparable to the Airport and draw conclusions that reflect the conditions at the Airport, the comparable airports were compared with the Airport using aeronautical activity and infrastructure indicators.

It is AMCG's experience that aeronautical activity and infrastructure indicators at airports typically run parallel to local economic indicators. Therefore, it is reasonable to assume that the airports identified as comparable to the Airport (based on the selection criteria) will be located in markets with economic and demographic characteristics that are similar to the subject market. As such, a separate analysis of local economic indicators at comparable airports was not deemed necessary in this case.

The following report summarizes AMCG's findings and opinions.



III. COMMUNITY OVERVIEW

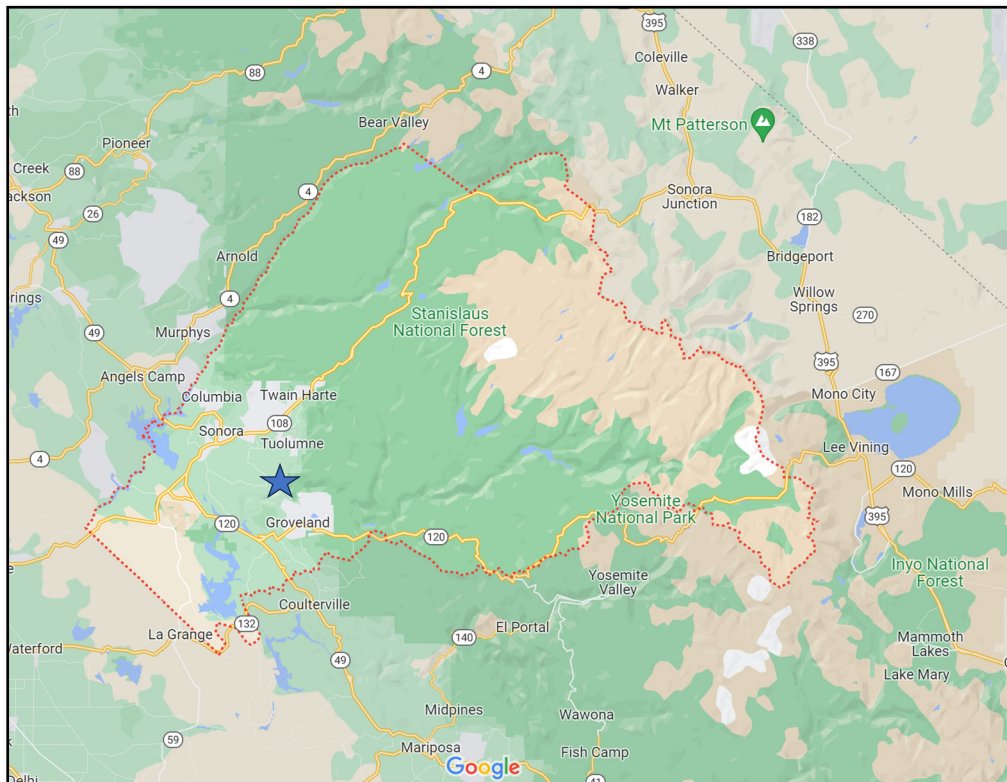
A. AIRPORT SPONSOR

The Airport is owned and operated by the County with an Airport Advisory Committee providing recommendations on policy matters as it relates to the operation and management of the Airport.

B. GEOGRAPHIC LOCATION

The Airport is located approximately 3 miles northeast of the Town of Groveland (Town) central business district and within the Stanislaus National Forest. As identified in **Figure 1**, the Airport is located between the Town of Tuolumne and the Town of Groveland.

Figure 1 – Geographic Location



C. DEMOGRAPHICS

The population of the Town has decreased a total of 41.9% or a compounded annual decrease of 5.3% from 601 in 2010 to 249 in 2020 (U.S. Census Bureau). The population of the County has increased a total of 3.5% or a compounded annual increase of 0.3% from 54,157 in 2010 to 56,074 in 2020 (U.S. Census Bureau).



D. BUSINESS AND INDUSTRY

The largest employment sectors of the Town are (1) accommodation and food service, (2) construction, and (3) other services not including public administration. These employment sectors account for approximately 96.6% of employment in the Town. The largest employment sectors in the County are (1) health care and social assistance, (2) accommodation and food services, and (3) retail trade. These employment sectors account for approximately 33.1% of employment in the County.

E. ECONOMIC FACTORS

The civilian labor for the County has decreased from 21,532 in 2015 to 19,877 in 2022 (U.S. Census Bureau), which represents a total decrease of 7.7% or a compounded annual change of 1.1%. As identified by the U.S. Bureau of Labor Statistics, the unemployment rate of the County was estimated to be 4.9% (June 2023) which was higher than the U.S. unemployment rate of 3.6% (June 2023).



IV. SUBJECT AIRPORT OVERVIEW

A. AIRPORT DESCRIPTION

The Airport, which consists of approximately 52 acres of land, has one runway, as follows:

- Runway 09/27: 3,642 feet long and 50 feet wide, grooved asphalt in good condition.

The Airport does not have an Air Traffic Control Tower but is served by multiple non-precision approaches (GPS, RNAV-GPS). The Airport is designated a General Aviation Airport in the *FAA National Plan of Integrated Airports System (NPIAS)* and an Unclassified Airport in the *FAA General Aviation Airports: A National Asset* study.

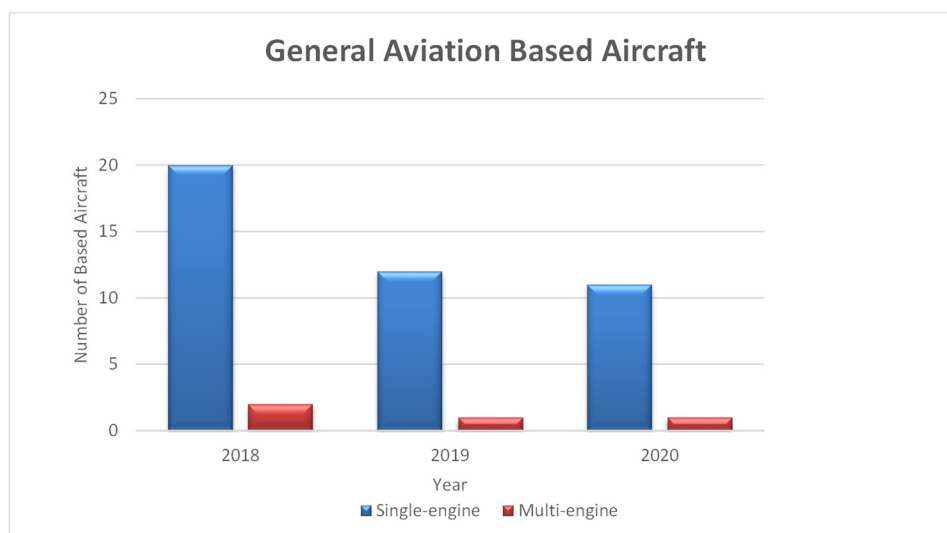
B. AIRCRAFT OPERATIONS

Total aircraft operations at the Airport were approximately 15,000 in 2022, as reported by the FAA Master Record 5010. Total general aviation aircraft operations consisted of approximately 6,750 local operations (approximately 45%) and approximately 15,000 itinerant operations (approximately 55%).

C. BASED AIRCRAFT

Figure 2 illustrates the number of based aircraft at the Airport from 2018 to 2020, as reported by the FAA Master Record 5010.

Figure 2: General Aviation Based Aircraft





As shown in **Table 2**, 12 aircraft were based at the Airport as of 2020. From 2018 to 2020, the total number of based aircraft at the Airport decreased a total of 45.5% or a compounded annual decrease of 18.3%.

Table 2 | General Aviation Based Aircraft

General Aviation Based Aircraft				
Year	Single-engine	Multi-engine	Total	% Change
2018	20	2	22	N/A
2019	12	1	13	-40.9%
2020	11	1	12	-7.7%

D. COMMERCIAL OPERATORS

One fixed base operator (Mother Lode Aviation) provides self-service fueling (avgas) and aircraft parking (hangar and tiedown).



V. SUBJECT PROPERTIES OVERVIEW

A. SUBJECT PROPERTIES

The Subject Properties consist of certain land and improvements located at the Airport which are currently leased or available for lease from the County.

The Subject Properties are summarized in **Table 3**. Maps and a photographic survey of the Subject Properties are provided in the Appendix.

Table 3 Subject Properties Overview	
Subject Properties Overview	
Component	Size (SF)
Executive Hangar	7,344
Aeronautical Improved Land	Varies
Tiedowns	

B. EXECUTIVE HANGAR

There is approximately 7,344 square feet of Executive Hangar included in the Subject Properties. The hangars have a metal exterior and a metal interior with electrical service and fluorescent lighting with asphalt flooring. The property details of the Executive Hangar are outlined in **Table 4**.

Table 4 – Executive Hangar Summary

Executive Hangar Summary							
Identification	Size (SF)	Door			Access	Amenities	Condition
		Type	Width (FT)	Height (FT)			
Hangar 1	1,512	10 Panel Sliding Metal	10.5	42	Good	Average	Good
Hangar 2	1,512						
Hangar 3	1,440						
Hangar 4	1,440						
Hangar 5	1,440						
Total	7,344						

C. AERONAUTICAL IMPROVED LAND AND TIEDOWNS

The Subject Properties include Aeronautical Improved Land and Tiedowns (Small and Medium). The details of each area are described below:

- Access
 - Aeronautical Improved Land (Good)
 - Small Tiedowns (Good)
 - Medium Tiedowns (Good)
- Condition
 - Small Tiedowns (Average)
 - Medium Tiedowns (Average)



VI. STUDY FINDINGS

Information and data from similar properties at the Airport and national, regional, comparable, and competitive airports was analyzed to derive an opinion of market rent for the Subject Properties. The results of the analysis are summarized in this section. Definitions of the Minimum, Maximum, Mean, Standard Deviation, Median, and Range (utilized in the following tables) are provided in the Appendix.

A. NATIONAL DATA

Rents obtained over the last 10 years from more than 750 airports located throughout the United States were analyzed. A summary and statistical analysis of the findings for national airports is provided in **Table 5**.

Table 5 | National Airport Data Summary

National Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$0.11	\$11.52	\$4.04	\$2.33	\$3.79	\$11.41
Aeronautical Improved Land	\$0.04	\$1.69	\$0.37	\$0.26	\$0.30	\$1.65
Small Tiedowns	\$25.00	\$160.00	\$56.31	\$34.80	\$45.00	\$135.00
Medium Tiedowns	\$52.00	\$310.00	\$139.62	\$92.66	\$100.00	\$258.00

Rental rates for Tiedowns are "per unit per month" (pu/mo); All other rental rates are "per square foot per year" (psf/yr)

B. REGIONAL DATA (FAA WESTERN PACIFIC REGION)

Rents obtained over the last 10 years from more than 125 airports in the FAA Western Pacific Region (consisting of Arizona, California, Hawaii, and Nevada)³ were analyzed. A summary and statistical analysis of the findings for regional airports is provided in Table 6.

Table 6 | Regional Airport Data Summary

Regional Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$0.41	\$11.52	\$4.98	\$2.26	\$4.77	\$11.11
Aeronautical Improved Land	\$0.05	\$2.71	\$0.64	\$0.59	\$0.40	\$2.66
Small Tiedowns	\$32.00	\$73.00	\$46.00	\$15.80	\$40.00	\$41.00
Medium Tiedowns	\$52.00	\$83.00	\$65.60	\$11.10	\$64.00	\$31.00

Rental rates for Tiedowns are "per unit per month" (pu/mo); All other rental rates are "per square foot per year" (psf/yr)

³ While American Samoa, Commonwealth of the Northern Mariana Islands, and Guam are included in the FAA Western-Pacific Region, rents from airports in these territories were not included or analyzed.



C. COMPARABLE AIRPORT DATA

The first step in identifying comparable airports is developing an accurate profile of the Airport. The profile was developed based on data available from various sources, including the FAA. The Airport profile provided the basis for establishing the criteria and parameters for identifying comparable airports.

The selection of comparable airports was based on aeronautical activity and infrastructure criteria including the following:

- The Airport is utilized solely by the general aviation segment of the market. As such, airports with significant air carrier operations were not considered comparable.
- The Airport is classified as a General Aviation airport in the FAA NPIAS. As such, only General Aviation airports were considered comparable.
- The Airport is unclassified in the FAA *General Aviation Asset Study*. As such, only unclassified and Basic airports were considered comparable.
- The Airport does not have a control tower or precision approach. As such, airports without a control tower and without a precision approach were considered comparable.
- The Airport consists of 52 acres. Airports having a total acreage between 20 and 80 acres were considered comparable.
- The Airport has one runway, which is 3,624 feet in length. Airports with at least one runway greater than 2,500 feet and less than 6,000 feet were considered comparable.
- For the 12-month period ending December 31, 2022 (as reported by the FAA Master Record 5010), general aviation itinerant operations at the Airport totaled 8,250. As such, the range for general aviation itinerant operations was established at 3,000 to 12,000.
- For the 12-month period ending December 31, 2022 (as reported by the FAA Master Record 5010), total operations at the Airport totaled 15,000. As such, the range for total operations was established at 8,000 to 23,000.
- The number of based aircraft at the Airport as of December 31, 2022 (as reported by the FAA Master Record 5010) was 12. As such, the range for based aircraft was established at 5 to 20.
- The Airport does not have based jet aircraft. As such, only airports with 5 or less based jet were considered comparable.

While a total of 21 airports were considered comparable to the Airport, rental rates, and usable information from 8⁴ airports were obtained and analyzed, as shown in **Table 7**.

⁴ Relevant and usable information was not available from Billy Free Municipal Airport (0M0), Brown County Airport (GEO), Corning Municipal Airport (004), Firebaugh Airport (F34), Luka Airport (15M), Lake Placid Airport (LKP), Lancaster Municipal Airport (73C), Lone Pine Airport (026), Magee Municipal Airport (17M), Oxford County Regional Airport (81B), Philadelphia Municipal Airport (MPE), Tishomingo County Airport (01M) and Wendell H. Ford Airport (CPF).



Table 7 | Comparable Airports

Comparable Airports		
Airport	Identifier	Location
Booneville Airport	8M1	Booneville, Mississippi
Garberville Airport	016	Garberville, California
Harbor Springs	MGN	Harbor Springs, Michigan
Hornell Municipal Airport	HTF	Hornell, New York
Iuka Airport	15M	Iuka, Mississippi
Put in Bay Airport	3W2	Put In Bay, Ohio
Ticonderoga Municipal Airport	4B6	Ticonderoga, New York
Trinity Center Airport	086	Trinity Center, California

Table 8 provides a summary and statistical analysis of the findings for the comparable airports.

Table 8 | Comparable Airport Data Summary

Comparable Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$0.66	\$3.00	\$1.78	\$1.17	\$1.67	\$2.34
Aeronautical Improved Land	\$0.14	\$0.33	\$0.26	\$0.09	\$0.30	\$0.19
Small Tiedowns	\$30.00	\$55.00	\$45.00	\$8.02	\$47.50	\$25.00
Medium Tiedowns	\$40.00	\$90.00	\$66.88	\$15.57	\$67.50	\$50.00

Rental rates for Tiedowns are "per unit per month" (pu/mo); All other rental rates are "per square foot per year" (psf/yr)

D. COMPETITIVE AIRPORT DATA

Typically, an airport is considered competitive if located in proximity to the Airport and serves a similar market. Each airport identified is then compared to the Airport based on (1) infrastructure and (2) available products, services, and facilities.

For the purposes of this study, airports within 60 nautical miles of the Airport were identified as being potentially competitive airports. While a total of 10 airports were considered competitive to the Airport, rental rates and usable information from 4⁵ airports were obtained and analyzed, as shown in **Table 9**:

Table 9 | Competitive Airports

Competitive Airports		
Airport	Identifier	Location
Gustine Airport	3O1	Gustine, California
Madera Municipal Airport	MAE	Madera, California
Placerville Airport	PVF	Placerville, California
Westover Field	JAQ	Jackson California

⁵ Relevant and usable information was not available from Calaveras County Airport (CPU), Chowchilla Airport (206), Los Banos Municipal Airport (LSN), Mariposa-Yosemite Airport (MPI), Oakdale Airport (O27) and Turlock Municipal Airport (015).



Table 10 provides a summary and statistical analysis of the findings for the competitive airports.

Table 10 | Competitive Airport Data Summary

Competitive Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$0.41	\$1.76	\$1.33	\$0.48	\$1.55	\$1.35
Aeronautical Improved Land	\$0.02	\$0.98	\$0.39	\$0.37	\$0.30	\$0.96
Small Tiedowns	\$40.00	\$66.00	\$55.00	\$13.45	\$59.00	\$26.00
Medium Tiedowns	\$40.00	\$89.00	\$64.50	\$34.65	\$64.50	\$49.00

Rental rates for Tiedowns are "per unit per month" (pu/mo); All other rental rates are "per square foot per year" (psf/yr)



VII. RENTAL RATE SUMMARY

A. RENTAL RATE CONCLUSIONS (BY COMPONENT)

The rental rate conclusions (effective June 13, 2023, which is consistent with the date of property inspection) are based on the analysis of the Subject Properties and the rents being charged for similar properties at the Airport and national, regional, comparable, and competitive airports. The market rental rate conclusions are conveyed on a “per square foot per year” (psf/yr) or a “per unit per month” (pu/mo) basis.

Throughout the following analysis, more weight has been given to the national and regional airports as limited relevant and usable data was available from the comparable and competitive airports.

The average national, regional, comparable, and competitive rental rates are representative of airport properties with the following attributes (as applicable):

- average airside and landside access,
- average amenities, and
- average condition.

Each of these attributes is rated using the following descriptors: poor, fair, average, good, and excellent. Once a base rental rate was derived for the Airport, specific conclusions were estimated for each component of the Subject Properties based on size, access, amenities, and condition (as applicable). For the purposes of this analysis, size adjustments were developed, where appropriate, based on an analysis of AMCG’s proprietary industry database (for all airports nationally). This process included an analysis of more than 4,500 data points correlating size ranges to existing rental rates compared to the national average rental rate.

B. EXECUTIVE HANGAR

The results of the study indicate that the average rental rates for Executive Hangar range from \$1.78 psf/yr at comparable airports to \$4.98 psf/yr at regional airports. The average rental rate at competitive airports was \$1.33 psf/yr and \$4.04 psf/yr at national airports. It is significant to note the rental rates for Executive Hangar range from a minimum of \$0.11 psf/yr at national airports to \$11.52 psf/yr at national and regional airports.

Based on analyzing all available data, a base rental rate of \$3.75 psf/yr was derived.

The average rental rate for an Executive Hangar exhibits the following size adjustments compared to the national average rental rate.



Table 11 | Executive Hangar Rental Rate Size Adjustments

Rental Rate Size Adjustments	
Range (square feet)	Adjustment (based on size)
Up to 2,999	0%
3,000-4,999	5%
5,000 and greater	-10%

Utilizing the base rental rate and predicated on adjustments for size, access, amenities, and condition, the estimated rental rate conclusions are outlined in **Table 12**.

Table 12 | Executive Hangar Conclusions Summary

Executive Hangar Conclusions Summary									
Identification	Size (SF)	Base Rental Rate	Adjustments				Calculated Result	Market Rent Opinion	
			Size	Access	Amenities	Condition		PSF/YR	PU/MO
Hangar 1	1,512	\$3.75	0%	5%	0%	5%	\$4.13	\$4.15	\$523.00
Hangar 2	1,512						\$4.13	\$4.15	\$523.00
Hangar 3	1,440						\$4.13	\$4.15	\$498.00
Hangar 4	1,440						\$4.13	\$4.15	\$498.00
Hangar 5	1,440						\$4.13	\$4.15	\$498.00

C. AERONAUTICAL IMPROVED LAND

The results of the study indicate that the average rental rates for Aeronautical Improved Land range from \$0.26 psf/yr at comparable airports to \$0.64 psf/yr at regional airports. The average rental rate at national airports was \$0.37 psf/yr and \$0.39 psf/yr at comparable airports. It is significant to note the rental rates for Aeronautical Improved Land range from a minimum of \$0.04 psf/yr at national airports to a maximum of \$2.71 psf/yr at regional airports.

Based on analyzing all available data, a base rental rate of \$0.35 psf/yr was derived.

The average rental rate for Land exhibits the following size adjustments compared to the national average rental rate.

Table 13 | Aeronautical Land Rental Rate Size Adjustments

Rental Rate Size Adjustments	
Range (square feet)	Adjustment (based on size)
Up to 49,999	-5%
50,000 – 249,999	-10%
250,000 – 999,999	0%
Greater than 1,000,000	-35%

Utilizing the base rental rate and predicated on adjustments for size and access, the estimated rental rate conclusions are outlined in **Table 14**.



Table 14 | Aeronautical Improved Land Conclusions Summary

Aeronautical Improved Land Conclusions Summary					
Size (SF)	Base Rental Rate	Adjustments		Calculated Result	Market Rent Opinion
		Size	Access		
Up to 49,999	\$0.35	-5%	5%	\$0.35	\$0.35
50,000 - 249,999		-10%		\$0.33	\$0.33
250,000 - 999,999		0%		\$0.37	\$0.37
1,000,000 and greater		-35%		\$0.25	\$0.25

All rental rates are "per square foot per year" (psf/yr)

D. SMALL AND MEDIUM TIEDOWNS

The results of the study indicate that the average rental rates for Small Tiedowns range from \$45.00 pu/mo at comparable airports to \$56.31 pu/mo at national airports. The average rental rate at regional airports was \$46.00 pu/mo and \$55.00 pu/mo at competitive airports. It is significant to note the rental rates for Small Tiedowns range from a minimum of \$25.00 pu/mo to a maximum of \$160.00 pu/mo at national airports.

Based on analyzing all available data, a base rental rate of \$65.00 pu/mo for Small Tiedowns was derived.

The results of the study indicate that the average rental rates for Medium Tiedowns range from \$64.50 pu/mo at competitive airports to \$139.62 pu/mo at national airports. The average rental rate at regional airports was \$65.60 pu/mo and \$66.88 pu/mo at comparable airports. It is significant to note the rental rates for Medium Tiedowns range from a minimum of \$52.00 pu/mo at regional and national airports to a maximum of \$310 pu/mo at national airports.

Based on analyzing all available data, a base rental rate of \$85.00 pu/mo for Medium Tiedowns was derived.

Utilizing the base rental rates and predicated on adjustments for access and condition, the estimated rental rate conclusions are outlined in **Table 15**.

Table 15 – Tiedowns Conclusions Summary

Tiedown Conclusions Summary						
Type	Base Rental Rate	Adjustments			Calculated Result	Market Rent Opinion
		Size	Access	Condition		
Small (Nested)	\$65.00	N/A	5%	0%	\$68.25	\$70.00
Medium (Nested)	\$85.00				\$89.25	\$90.00

All rental rates are "per unit per month" (pu/mo)



E. RENTAL RATE CONCLUSIONS

Table 16 identifies AMCG’s opinion of market rent for the Subject Properties.

Table 16 Rental Rate Conclusions				
Rental Rate Conclusions				
Component	Identification	Size (SF)	Market Rent Opinion	
			PSF/YR	PU/MO
Executive Hangar	Hangar 1	1,512	\$4.15	\$523.00
	Hangar 2	1,512	\$4.15	\$523.00
	Hangar 3	1,440	\$4.15	\$498.00
	Hangar 4	1,440	\$4.15	\$498.00
	Hangar 5	1,440	\$4.15	\$498.00
Aeronautical Improved Land	N/A	Up to 49,999	\$0.35	N/A
		50,000 - 249,999	\$0.33	
		250,000 - 999,999	\$0.37	
		1,000,000 and greater	\$0.25	
Tiedowns	Small (Nested)	N/A	N/A	\$70.000
	Medium (Nested)			\$90.000



VIII. APPENDIX

A. CERTIFICATIONS

I certify that, to the best of my knowledge and belief...

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and represent our personal, impartial, unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the Subject Properties and no personal interest with respect to the parties involved with this assignment.
- I have no bias with respect to the Subject Properties or to the parties involved with this assignment.
- This assignment was not contingent on developing or reporting predetermined results.
- AMCG's compensation for completing this assignment is not contingent on the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the Uniform Standards of Professional Appraisal Practice (USPAP).
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- David Benner has made a personal inspection of the Subject Properties.
- Matthew Fish, MAI, has not made a personal inspection of the Subject Property and has relied on the reports and observations of David Benner.
- As of the date of this report, I, Matthew Fish, MAI, have completed the continuing education program for designated members of the Appraisal Institute.
- David Benner and Katie Gainer provided significant real property appraisal assistance to the person signing this certification in the research and analysis and this report.
- AMCG has performed no services, as an appraiser or in any other capacity, regarding the Subject Properties within the three-year period immediately preceding acceptance of this assignment.

Matthew F. Fish, MAI

Appraiser

AMCG

Temporary License No. 3011911-001



B. LIMITING CONDITIONS

This report is subject to the following conditions and to other specific and limiting conditions as described by Aviation Management Consulting Group, Inc. (AMCG) in this report.

1. AMCG assumes no responsibility for matters legal in nature affecting the Subject Properties, nor does AMCG render any opinion as to the title of the Subject Properties, which are assumed to be good and marketable. All existing liens and encumbrances, if any, have been designated and the Subject Properties have been analyzed as though free and clear and held under responsible ownership and competent management.
2. Information, estimates, and opinions furnished to AMCG and contained in this report were obtained from sources considered to be reliable and are believed to be true and correct. However, AMCG assumes no responsibility for their accuracy.
3. Although dimensions were taken from a source considered reliable, this should not be construed as a survey. The exact size of the Subject Properties and legal description (as appropriate) should be verified by a licensed engineer or surveyor.
4. Unless noted in this report, the conclusions do not include contributory value of any personal property, furniture, fixtures, equipment, or on-going business value.
5. It is assumed that the utilization of the Subject Properties is within the boundaries or property lines and that there is no encroachment or trespass unless noted in this report.
6. This report is prepared for the sole, exclusive use of the client. No third parties are authorized to rely on this report without the prior written consent of AMCG.
7. It is assumed that all applicable zoning and use regulations have been complied with unless a non-conformity was stated, defined, and considered in this report.
8. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or federal government or private entity or organization have been or can be obtained or renewed for any use on which the conclusions are based.
9. Full compliance with all applicable federal, state, and local environmental regulations and laws is assumed unless noncompliance is stated, defined, and considered in this report.
10. AMCG does not have any knowledge of the existence of potentially hazardous material, gases, toxic waste, or mold on or in the Subject Properties. To AMCG's knowledge, the presence of potentially hazardous waste, materials, or gases has not been detected, or if they have been detected, it has been determined that the amount or level is considered to be safe according to standards established by the Environmental Protection Agency (EPA). However, AMCG is not qualified to detect such substances and does not make any guarantees or warranties that the Subject Properties have been tested for the presence of potentially hazardous waste materials or gases, if tested, that the tests were conducted pursuant to EPA-approved procedures. The existence of any potentially hazardous materials, gases, toxic waste, or mold may have an effect on the conclusions. An expert in this field should be retained by the client if desired.



11. AMCG is not a property or environmental inspector. The AMCG team has provided an opinion of rent. This report does not guarantee that the Subject Properties are free of defects of environmental issues. AMCG has performed an inspection of the visible and accessible areas only. AMCG is not qualified to determine the existence of mold, the cause of mold, the type of mold, or whether, if any, mold exists, the mold might pose any risk to the Subject Properties or its inhabitants. Mold may be present in areas of the Subject Properties, including areas AMCG could not see. A professional property inspector or environmental inspection is recommended.
12. It is assumed the Subject Properties will have an adequate supply of energy in the future.
13. The American with Disabilities Act (ADA) became effective January 26, 1992. AMCG has not made a specific compliance survey and analysis of the Subject Properties to determine if the Subject Properties are in conformity with the various detailed analysis of the requirements of the ADA. It is possible that a compliance survey of the Subject Properties together with a detailed analysis of the requirements of the ADA could reveal that the Subject Properties are not in compliance with one or more of the requirements of the ADA. If so, this fact could have a negative impact on the conclusion. Since AMCG has no direct evidence relating to this issue, possible noncompliance with the requirements of the ADA was not considered in the analysis.
14. AMCG assumes there are no hidden or unapparent conditions of the Subject Properties, subsoil, or structures that would render the Subject Properties more or less valuable. AMCG assumes no responsibility for such conditions or for engineering that might be required to discover such factors.
15. No requirements shall be made of AMCG to give testimony or appear in court by reason of this report of the Subject Properties in question, unless arrangements have been made previously. If any courtroom or administrative testimony is required in connection with this report, additional fees and expenses shall be charged for those services.
16. Possession of this report, or copy hereof, does not carry with it the right of publication nor may it be used for any purpose whatsoever by any entity but the client without the prior written consent of AMCG and the client.
17. Neither all nor any part of the contents of this report shall be disseminated to the public through advertising media or public means of communication without the prior written consent of AMCG and the client.
18. AMCG's inspection of the site shall in no way be constructed as an engineering inspection for structural soundness, physical condition, or for the condition of the mechanical systems.



C. DEFINITIONS AND ACRONYMS

- Aeronautical Improved Land – Airport land having access (airside and landside) and utilities to the property boundary.
- Commercial – An activity undertaken with the intent to generate and/or secure earnings, income, or compensation (including exchange or barter of goods or services), and/or profit, whether or not such objectives are accomplished.
- Executive Hangar – A square or rectangular-shaped hangar designed to accommodate the proprietary aircraft operations of a single company or individual. Executive Hangars (typically smaller than 100 feet by 100 feet) are typically larger than T-Hangars and smaller than Community Hangars. These hangars may have associated shop, office, and storage areas located within or adjacent to the footprint of the hangar.
- GPS – Global positioning system.
- Itinerant – Aircraft operations terminated at an airport which (1) arrive from outside the airport area or (2) depart the airport and leave the airport area.
- Local – Aircraft operations which (1) remain in the local traffic pattern, (2) execute simulated instrument approaches or low passes at an airport, or (3) operate to or from an airport and a designated practice area within a 20-mile radius of the Air Traffic Control Tower.
- Maximum – Maximum value present in the data range.
- Mean – Arithmetic average of all data in the data range.
- Median – Value wherein half of the data points in the number series are below while half of the data points in the number series are above.
- Minimum – Minimum value present in the data range.
- Range – Mathematical difference between the maximum and minimum values of the data range.
- RNAV – GPS – Area navigation-global positioning system.
- Standard Deviation – Statistical method designed to mathematically measure the variability in a set of data points. The calculated figure for standard deviation is indicative of the relative distance between the mean and every data point. For a normally distributed data range, approximately 68% of the data points would fall within one standard deviation of the mean, as illustrated by a normal bell curve. Similarly, approximately 95% of the data points would fall within two standard deviations, while approximately 99.7% of the data points would fall within three standard deviations of the mean. Assuming the data points from the airports are representative of the population and the population follows a normal bell curve, the calculated standard deviation values would illustrate the relative variability in data points (i.e., how close these data points are to the mean).



- Tiedown - An aircraft parking area typically signified by a painted "T" and equipped with three-point tiedown anchors to secure the aircraft wingtips and tail.
 - Small Tiedown - Utilization of a Tiedown by most single-engine piston-powered aircraft (e.g., Beechcraft Bonanza; Cessna 150, 172, 182, and 210; Cirrus 20 and 22; Diamond Katana and Diamond Star; Piper Arrow, Cherokee, and Saratoga; etc.) with an overall width up to 40 feet.
 - Medium Tiedown - Utilization of a Tiedown by most light multi-engine piston-powered aircraft (e.g., Cessna 310, Diamond Twin Star, Piper Seminole, Piper Seneca, etc.) with an overall width from 40 feet up to 45 feet.



D. SUBJECT PROPERTIES IDENTIFICATION MAP

Figure 3: Subject Properties



For reference purposes only



E. SUBJECT PROPERTIES PHOTOGRAPHIC SURVEY



Executive Hangar 1



Executive Hangar 1



Executive Hangar 2



Executive Hangar 3



Executive Hangar 4



Executive Hangar 5



Aeronautical Improved Land



Aeronautical Improved Land



Tiedowns



Tiedowns



F. TEMPORARY APPRAISAL LICENSE

 Business, Consumer Services & Housing Agency
BUREAU OF REAL ESTATE APPRAISERS
TEMPORARY PRACTICE PERMIT

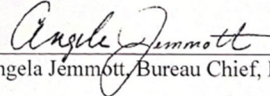
BREA APPRAISER IDENTIFICATION NUMBER 3011911-001

Matthew F. Fish

having demonstrated good standing at the Certified General level in the State of Colorado is authorized to perform the appraisal assignment(s) described below:

Columbia Airport – 10723 Airport Rd., Columbia, CA 95310
Pine Mountain Lake Airport – 20980 Elderberry Way., Groveland, CA 95321

This permit is valid until the completion of the 2 appraisal(s) described, the expiration date indicated below or the expiration of the license issued by the State of Colorado whichever occurs first.


Angela Jemmott, Bureau Chief, BREA

3073817

Date Issued: November 1, 2023
Date Expires: December 31, 2023

THIS DOCUMENT CONTAINS A TRUE WATERMARK - HOLD UP TO LIGHT TO SEE "CHAIN LINK"



ELEMENT 4:

Columbia Airport (O22) Economic Impact Study





COLUMBIA AIRPORT (O22) ECONOMIC IMPACT STUDY

Prepared by Kimley Horn

ELEMENT 4 — TABLE OF CONTENTS

1	Introduction and Socioeconomic Context	4-1
2	Study Overview	4-2
2.1	Sources of Airport Activity that Generate Economic Impact	4-2
2.1.1	On-Airport Sources	4-3
2.1.2	Off-Airport Sources.....	4-3
2.2.	Measures of Economic Activity	4-4
2.3	Levels of Economic Impact	4-5
2.4	Study Methodology	4-6
2.4.1.	Data Collection	4-6
2.4.2.	Using IMPLAN for the O22 AEIS	4-9
3	2022 Direct and Multiplier Economic Impact of O22	4-10
3.1	Direct Impacts	4-10
3.2	Multiplier Impacts	4-10
4	2022 Total Economic Impacts of O22	4-11

LIST OF TABLES

Table 1-1	Summary of Socioeconomic Trends in Tuolumne County (2002-2042)	4-1
Table 1-2	Comparison of Socioeconomic Trends at the National and Tuolumne County Levels ...	4-2
Table 2-1	Defining Economic Impact Measures	4-4
Table 2-2	Defining Economic Impact Levels	4-5
Table 2-3	Information Needed for Each Activity Source	4-7
Table 2-4	Average per Visitor Spending Amounts, by Visitor Type, Adjusted to 2022 Dollars	4-8
Table 2-5	Percent of Transient Operations by Type: (Overnight - Campground, Overnight - Hotel, DayTrip)	4-8
Table 2-6	Average Per Visitor Per Trip Spending for O22	4-8
Table 3-1	2022 Direct Impacts of All Airport Activity	4-10
Table 3-2	2022 Multiplier Impacts of All Airport Activity	4-11
Table 4-1	2022 Total Impacts of All Airport Activity	4-11

LIST OF FIGURES

Figure 2-1	Sources of Airport Activity that Generate Economic Impact	4-3
Figure 2-2	Relationship Between Payroll and Output.....	4-4
Figure 2-3	Economic Impact Analysis Process	4-6



1. INTRODUCTION AND SOCIOECONOMIC CONTEXT

As part of a broader effort undertaken by Tuolumne County to understand the activity and operation of the Columbia Airport (O22), an airport economic impact study (AEIS) was conducted. This AEIS provides an estimate of the annual economic contribution resulting from activity occurring on and off the Airport. The study uses 2022 as the base year for the analysis as that was the most recent year for which a full year of data was available and is representative of the current conditions at the Airport.

O22 was established in 1940 and is a publicly owned, public-use general aviation (GA) facility located in northwestern Tuolumne County. The Airport is home to several business tenants that provide a range of aviation support services, from helicopter charter services to full-service airframe and powerplant (A&P) maintenance, flight training, and more. Additionally, to support critical or emergency events in the area, California Department of Forestry and Fire Protection (CalFire) operates an Air Attack Base at the Airport that serves the aerial firefighting needs of the region, and beyond. PHI Air Medical, an air ambulance provider, is also based at O22.

The Airport has one paved runway and one turf runway and offers self-serve and full-serve 100LL aviation fuel and full-serve Jet-A fuel. These facilities and services meet the needs of a diverse range of pilots, regardless of the type of aircraft they're flying. The Airport is used by a variety of users, from recreational flyers to student pilots, the surrounding business community, and for emergency response purposes. O22 is the busier and larger airport of two GA facilities owned by Tuolumne County.

Tuolumne County's population remained relatively consistent between 2002 and 2022 but is anticipated to grow almost four percent over the next 20 years, as shown in **Table 1-1**. In 2022 the population in Tuolumne County was estimated at 55,912 people, according to data provided by Woods and Poole, Economics, Inc.¹ Employment in Tuolumne County also remained relatively consistent between 2002 and 2022, however it is anticipated that there will be significant growth over the next 20 years, with a projected increase of approximately 14 percent between 2022 and 2042. There was an almost 22 percent growth in the County's gross regional product (GRP) between 2002 – 2022, and it is anticipated that the GRP will continue to increase significantly over the next 20 years, by approximately 17 percent.

Table 1-1 | Summary of Socioeconomic Trends in Tuolumne County (2002-2042)

Socioeconomic Indicator	Historic: 2002	Current: 2022	Future: 2042	2002-2022 % Change	2022-2042 % Change	2002-2042 % Change
Population	55,850	55,912	57,991	0.1%	3.7%	3.8%
Employment	25,514	26,000	29,712	1.9%	14.3%	16.5%
GRP	\$3,481,940,000	\$4,243,100,000	\$4,987,220,000	21.9%	17.5%	43%

Sources: Woods and Poole Economics, Inc., (2002-2042), 2023; Kimley-Horn, 2023.

¹ Woods and Poole, Economics, Inc. is an industry-accepted database that provides long-term county economic and demographic data projections.



The 40-year compound annual growth rates (CAGR) of these socioeconomic indicators (from 2002 to 2042) are presented in **Table 1-2** alongside the CAGR for the same indicators at the national level. As shown, the annual growth rate of population in the United States (U.S.) is projected to be 0.7 percent, which is faster than the annual growth rate of population anticipated in Tuolumne County, which is 0.1 percent. Employment and gross domestic product (GDP)²/GRP are expected to grow at a significantly faster annual rate at the national level compared Tuolumne County, as well. Employment is expected to grow at an annual rate of 1.2 percent nationwide, compared to Tuolumne County at 0.4 percent. GDP is expected to grow at the national level at an annual rate of approximately 2.0 percent between 2002 and 2042, compared to the 0.9 percent GRP growth rate anticipated in Tuolumne County over the same time. This socioeconomic background provides context for understanding the environment in which O22 operates and is helpful when interpreting the results of this AEIS.

Table 1-2 | Comparison of Socioeconomic Trends at the National and Tuolumne County Levels

Indicator	2002-2042 U.S. CAGR	2002-2042 Tuolumne County CAGR
Population	0.7%	0.1%
Employment	1.2%	0.4%
GDP/GRP	2.0%	0.9%

Sources: Woods and Poole Economics, Inc., (2002-2042), 2023; Kimley-Horn, 2023.

2 STUDY OVERVIEW

Before presenting the results of the AEIS and the 2022 economic contributions of O22, it is important to first provide an overview of what an AEIS encompasses, such as what activities generate economic impact, what measures are used, how results are communicated at different levels, and the methodology used. The information presented in this section is critical for understanding results of this AEIS.

2.1 SOURCES OF AIRPORT ACTIVITY THAT GENERATE ECONOMIC IMPACT

Airports act as economic drivers for the communities and regions within which they are located. Airports provide employment opportunities, support local business development, and provide critical air transportation for visitors, professionals, area residents, and goods and services. This section details the on- and off-airport activities that generate economic impacts and were accounted for in the economic impact analysis of O22, which are also shown in **Figure 2-1**.

² GDP is an equivalent indicator to GRP, except GDP is calculated at the national level instead of the regional level.



Figure 2-1: Sources of Airport Activity that Generate Economic Impact



Source: Kimley-Horn, 2023.

2.1.1 On-Airport Sources

Airport Administration: Activities associated with the management and operation of an airport are included in this source of activity. This includes employment by the airport sponsor, and contracted services (if applicable), along with other operating expenditures and revenues. Airport sponsor staff perform a variety of duties such as airport management, airport business operations, airport maintenance and other operations duties. In some cases, airports contract out certain services such as landscape and lawn maintenance, laundry services, security services, and more. Employment associated with these contracted services is also accounted for in this activity source.

Airport Capital Expenditures: Airports incur construction costs over time, whether for major maintenance needs or for facility improvements and expansions. These construction projects support employment at an airport during the duration of the project and generate subsequent economic activity when materials are purchased locally and regionally, which is captured in this analysis.

Business Tenants: Airport tenants are businesses located on an airport that employ staff at their airport location. Airport tenants may include Fixed-Base Operators (FBOs), Maintenance Repair and Overhaul (MRO) providers, concessionaires, retailers, rental car operators, flight schools, and other on-airport businesses. This category does not include private aircraft owners who hangar their aircraft at an airport and are not associated with an on-airport business. Those impacts are accounted for under “Airport Administration” as an airport may receive revenues from hangar leases and may also generate revenue from fuel sales.

2.1.2 Off-Airport Sources

Visitor Spending: The beautiful surroundings of the Airport and the proximity to Yosemite National Park bring visitors to the area year-round. Visitors that travel to the area via O22 spend money at restaurants, hotels, the National Park, and other amenities and recreational activities in the area. This spending supports employment in the area at local establishments and suppliers and generates economic impact. It is important to note that this activity source only captures impacts generated by “true visitors,” meaning those who arrive to the area via O22 from outside of Tuolumne County and bring “new money” into the region. Spending at the Airport on any services is not included in this source, but it is accounted for as part of the on-airport activity generated by tenants and/or airport administration.



2.2 MEASURES OF ECONOMIC ACTIVITY

Three common economic impact measures are used in this study including jobs, payroll, and output, which are defined in **Table 2-1**.

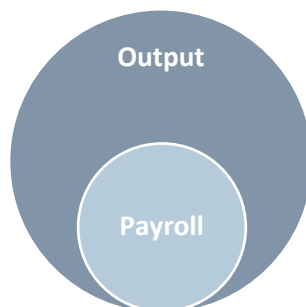
Table 2-1 | Defining Economic Impact Measures

Measure		Definition
	Jobs	Total number of persons employed that are associated with output and payroll, regardless of whether they are full- or part-time.
	Payroll	Total employment compensation generated by the identified jobs, including wages and benefits. Payroll may also be referred to as “labor income” or “total compensation.”
	Output	Incorporates expenditures needed to administer airports, sales of goods and services by airport tenants, budget expenditures by public sector agencies located on airports, cost of capital expenditures, and visitor spending. Output may also be referred to as “business revenues” or even “economic impact.”

Sources: Kimley-Horn, 2023.

It is important to note that the economic impact measure of “jobs” is the only measure not presented in a dollar value. Payroll and output are presented in terms of dollars; however, these values are not additive and cannot be summed together. Payroll and output are interrelated, where payroll comprises a fraction of output, as shown in **Figure 2-2**.

Figure 2-2: Relationship Between Payroll and Output



Source: Kimley-Horn, 2023.

Now that the sources of economic impact and economic impact measures have been defined, the following subsections present the levels of impact (direct, indirect, and induced). Following these definitions is the description of the study’s methodology.



2.3 LEVELS OF ECONOMIC IMPACT

Economic impacts are commonly presented at three different levels to distinguish the composition of total impacts: direct, indirect, and induced. Indirect impacts are sometimes referred to as “supplier sales” and represent the impacts generated when an airport or airport-related or reliant business purchases goods and services from local suppliers or businesses. Induced impacts are sometimes referred to as “income respending” and represent the impacts generated when airport and airport related employees spend their wages in the local economy. The combination of indirect and induced impacts is referred to collectively as “multiplier impacts.” **Table 2-2** provides additional definitions of the three levels of economic impact, along with examples of each.

Table 2-2 | Defining Economic Impact Levels

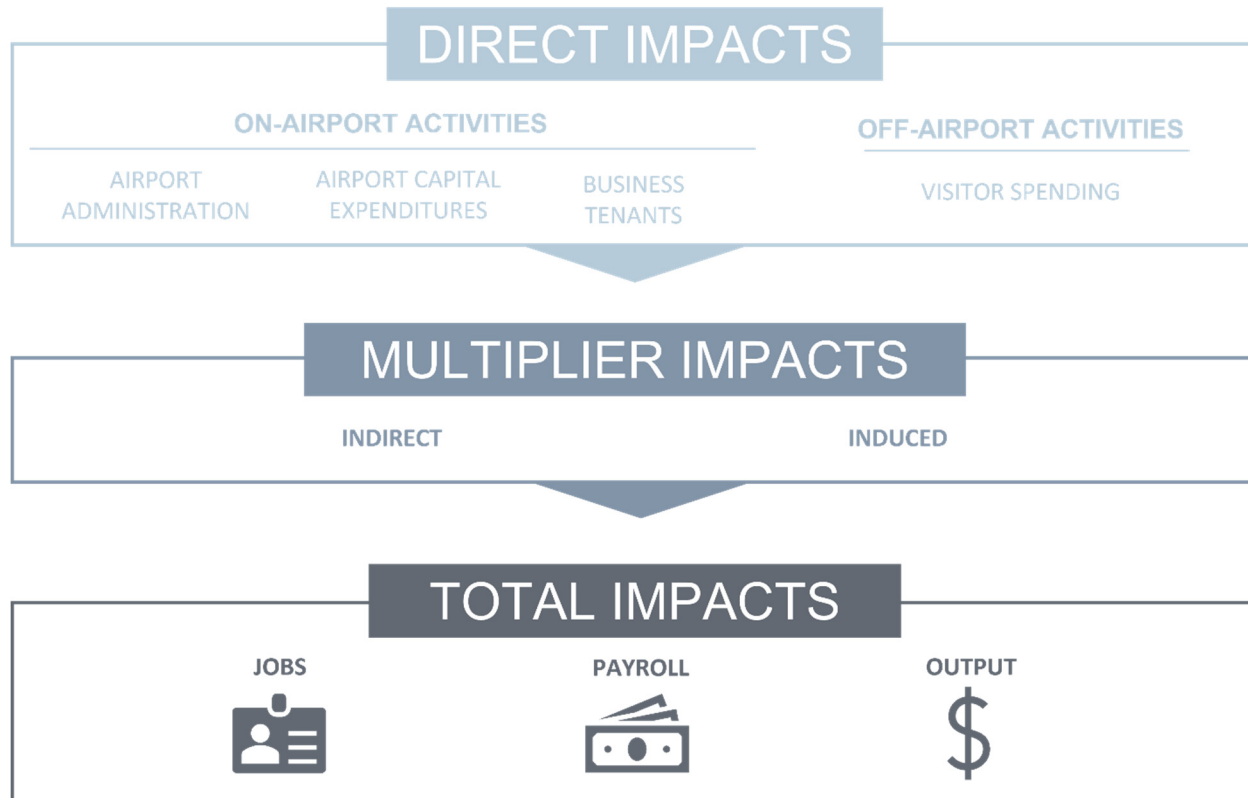
Level		Definition
	Direct	The first effects that occur from on- and off-airport activity due to airport operations, tenant activity, capital expenditures, and visitor spending. Examples of this include the wages of an airport tenant's staff, or the revenue of a local restaurant generated by visitors arriving to the area via the airport.
Multiplier Impacts	 Indirect	Impacts that are generated when a share of direct business revenues is used to buy goods and services from other businesses in Tuolumne County. These impacts may also be referred to as “supplier sales.” An example of this is the local restaurant from the scenario above purchasing bread from a local bakery. Another example is a tenant hiring out tax preparation services from a local accountant.
	 Induced	Impacts that are generated when income earned by workers from direct and indirect transactions is spent on goods and services in Tuolumne County. These impacts may also be referred to as “income re-spending.” Examples include employees (such as restaurant or tenant employees from the scenarios above) spending wages on groceries for their families at a local supermarket or on daycare for their children at a neighborhood center.
	Total	Total impacts are derived from the sum of the direct, indirect, and induced impacts.

Source: Kimley-Horn, 2023.

Figure 2-3 presents an overall picture of how the sources of airport activity, economic impact measures, and economic impact levels are used to produce and present the results of this AEIS. The direct impacts of the on- and off-airport activity presented in **Section 2.1** are used along with the IMPLAN economic model to calculate the indirect and induced impacts (multiplier impacts), which are then summed to present total impacts across the three measures: jobs, payroll, and output. More information on the use of IMPLAN and the generation of multiplier impacts can be found in **Section 2.4.2**.



Figure 2-3: Economic Impact Analysis Process



Source: Kimley-Horn, 2023

2.4 STUDY METHODOLOGY

The methodology used to calculate the economic impact of O22 required a comprehensive data collection process and the use of the IMPLAN economic model. The following sections offer additional detail on both of those components.

2.4.1 Data Collection

To develop an accurate picture of the total economic contributions of O22, a significant and comprehensive data collection effort was undertaken. The primary data sources included Tuolumne County staff and business tenants. While most of the information necessary to conduct the analysis was obtained from primary sources, some secondary sources were consulted as needed, including the Federal Aviation Administration (FAA), ESRI Business Analyst, IMPLAN, and other publicly available sources. **Table 2-3** presents the data points needed for each activity source.

**Table 2-3 | Information Needed for Each Activity Source**

Location	Source of Activity	Data Points
On-Airport	Airport Administration	Airport-sponsored Employment • Number of employees by type/role Contract Employment/Firms • Number of employees by type/role or value of contract Operating Expenses • Payroll (including wages and benefits) * • Routine operating and maintenance costs
	Airport Capital Expenditures	Airport Construction • Historic annual capital improvement project expenditures (2018-2022)
	Business Tenants	Tenant Employment and Capital Expenditures • Number of employees per business • Types of business/industry • Payroll (including wages and benefits) * • Historic annual capital expenditures (2018-2022)
Off-Airport	Visitor Spending	Number of Annual True Visitors • Total number of itinerant operations • Percent of those operations that are transient • Typical aircraft size used in transient operations • Typical number of passengers per transient operation Average spending per visitor, per trip

Note: *Indicates information that is desired but not required. Source: Kimley-Horn, 2023.

It is important to note that the Airport and tenants were asked to report historic capital expenditures over a multi-year period so that an annual average capital expenditure amount could be calculated. Often, an airport (as well as tenants) may have years with no capital expenditures or very high capital expenditures. By averaging capital expenditures over multiple years, the extreme highs and lows are balanced, and the result is a reasonable, accurate spend amount that isn't over- or under-estimated.

The information collected for visitor spending that is presented in **Table 2-3** was used to determine the impacts of visitor spending that likely would not have occurred without O22. To identify the number of true visitors, and the average amount of money that each visitor spends per trip, a close review of a 2019 tourism report developed for Mono County, *Profile of Mono Visitors and Economic Impacts of Tourism* was conducted since there were no tourism spending data available for Tuolumne County. Mono County neighbors Tuolumne County and it is assumed that spending amounts and patterns are comparable for the purposes of this estimate. The Mono County study provides a breakdown of spending by visitors staying less than a day and those staying overnight by type of accommodation (hotel, camping, etc.). It was important to include the camping estimate for O22 as the Airport offers on-site camping that visitors frequently use. **Table 2-4** provides an overview of these values adjusted to 2022 dollars to align with the base year of this AEIS. It is important to note that these spending amounts are on a "per day" basis. The Mono County study estimates that the average length of stay for visitors staying overnight was 1.89 days, therefore the overnight visitor spend must be multiplied by 1.89 to calculate the average "per trip" spending. This adjustment is also reflected in **Table 2-4**.

**Table 2-4 | Average per Visitor Spending Amounts, by Visitor Type, Adjusted to 2022 Dollars**

Visitor Type	Average Spend Per Visitor/Day in 2019 Dollars	Average Spend Per Visitor/Day Adjusted to 2022 Dollars	Average Length of Stay	Average Spend Per Visitor, Per Trip
Overnight – Camping	\$79	\$93	1.89	\$176
Overnight – Hotel	\$229	\$269	1.89	\$508
Day Trip	\$37	\$44	1.00	\$44

Sources: Profile of Mono Visitors and Economic Impacts Tourism, 2019; Bureau of Labor Statistics – Inflation Calculator, 2022; Kimley-Horn, 2023.

Based on overnight stay records provided by the County, 73 percent of visitors traveling via O22 stay the night and the other 27 percent of visitors are only staying for the day. Of the visitors staying overnight, 36 percent are staying in the Airport campground based on County records and the remaining 64 percent are assumed to be staying in hotels in the area. This information is summarized in **Table 2-5**.

Table 2-5 | Percent of Transient Operations by Type (Overnight - Campground, Overnight - Hotel, Day Trip)

Transient Operations Type	% of Transient Operations by Type	Number of Transient Operations
Total Transient Operations	N/A	4,008
Overnight Transient Operations	73% of 4,008	2,922
Overnight Campground Transient Operations	36% of 2,922 (or 26% of 4,008)	1,052
Overnight Hotel Transient Operations	64% of 2,922 (or 47% of 4,008)	1,870
Day Trip Transient Operations	27% of 4,008	1,086

Sources: Profile of Mono Visitors and Economic Impacts Tourism, 2019; Tuolumne County; Kimley-Horn, 2023.

The percentage of visitors by type presented in **Table 2-5** is applied to the average spending per visitor by type that is presented in **Table 2-4**, which provides a weighted average of spending per visitor for overnight – campground, overnight – hotel, and day trip visitors. These results are then summed to determine an overall average per visitor spending amount for all visitors traveling through O22. As shown in **Table 2-6**, the result of this analysis is an average per visitor spending of \$295.

Table 2-6 | Average Per Visitor Per Trip Spending for O22

Visitor Type	Average Spend Per Visitor, Per Trip	% of Visitor Total	Weighted Average of Spend per Visitor, Per Trip
Overnight – Campground	\$176	26%	\$46
Overnight – Hotel	\$508	47%	\$237
Day Trip	\$44	27%	\$12
Average Per Visitor, Per Trip Spend	N/A	100%	\$295

Sources: Profile of Mono Visitors and Economic Impacts Tourism, 2019; Tuolumne County; Kimley-Horn, 2023.



2.4.2 Using IMPLAN for the O22 AEIS

As discussed in previous sections, IMPLAN is the economic modeling software used for this AEIS. IMPLAN is the most widely used input-output (I/O) economic model in the U.S. The model is built using data from the Bureau of Economic Analysis (BEA), Bureau of Labor Statistics (BLS), U.S. Census, and U.S. Department of Commerce. IMPLAN Version 6.4, the most recent version, was used to model the economic impact of O22, which reflects the current economic measures (i.e., jobs, payroll, and output) for 564 industry classifications. These IMPLAN industry classifications roughly correspond to two- and five-digit industry groups recognized in the North American Industry Classification Systems (NAICS). The 2022 IMPLAN model calibrated for this AEIS was specific to the economy and industry relationships within Tuolumne County. The data collected for each source of activity presented in **Table 2-3** were used along with the IMPLAN model to calculate the total economic output of O22. Three ways the IMPLAN model was used are described here:

1. Fill in data gaps to estimate direct impacts: IMPLAN can estimate payroll and output impacts (expenditures or revenues) for airport administration and tenant impacts when only employment information was provided. Alternatively, if only direct expenditures (or revenues) are provided then IMPLAN can work backwards to estimate the number of employees (this is not common as businesses are much more likely to report the number of employees rather than their sales).

For activities where employment is unknown, but total expenditures are provided or calculated (this is the case for airport and tenant capital expenditures and visitor spending), IMPLAN works backwards to generate employment estimates for these activities. As an example, for an airport construction project, the total cost of construction will likely be known but the number of contractors out on the job site working on the project isn't likely to be documented.

The payroll, business sales, and expenditures per worker ratios are derived primarily from county-specific U.S. Department of Commerce and Department of Labor data sets calibrated in the model. These ratios reflect a measure of productivity (business output per employee) and income levels based on the number of jobs for each industry on-airport and in hospitality sectors (for visitor spending).

2. Apply retail margining: Retail margining is applied when estimating visitor spending impacts as it is necessary to determine, of the total amount of money spent by visitors, how much reflects the value of the items sold and how much reflects the portion of the sold item that is considered actual revenue for the store. The difference between the cost of the item for the retailer, and the value of the item once sold is referred to as the "mark-up," or the margin costs. Only the mark-up produces revenue and economic activity for local retailers. It is the revenue generated from the mark up, only, that supports employee payroll and operating costs of the business (e.g., rent, utilities, capital, and other expenses). The gross revenue collected by the retail business or industry does not impact or support employee payroll or operating costs of the business. To isolate the revenues that accrue to retailers, the margin percentage was applied to the value of all retail goods sold, as calculated within the IMPLAN model.



3. Derive multiplier impacts: IMPLAN's I/O model traces the flows of money in an economy using patterns of industry-to-industry purchases and sales, which generates the indirect impacts and traces the patterns of householding spending to generate induced impacts. These patterns are used to demonstrate how revenues earned in direct transactions have ripple impacts throughout an economy. The IMPLAN model tracks the circulation of output, using these industry relationships, to calculate the level that indirect and induced activity (multiplier impacts) support jobs and payroll for the people in Tuolumne County and support additional revenues for businesses.

3 2022 DIRECT AND MULTIPLIER ECONOMIC IMPACTS OF O22

The following sections present the direct and multiplier impacts (indirect and induced) of on- and off-airport activity occurring at O22 in 2022. The results presented within each section account for all Airport activity described in **Section 2.1**, including airport administration, airport capital expenditures, business tenant activity (including capital expenditures), and visitor spending. As a note, the results presented in these sections are in 2022 dollars.

3.1 DIRECT IMPACTS

The direct impacts associated with on- and off-airport activity at O22 in 2022 are presented in **Table 3-1**. As shown, there are 163 direct jobs supported by the airport administration, airport capital expenditures, business tenants, and visitor activity in 2022. These 163 jobs directly contribute \$17.98 million in payroll and \$25.96 million in output to the broader Tuolumne County region. Within these impacts, tenants contribute approximately 109 direct jobs, generating \$15.87 million in direct payroll and \$20.5 million in direct output. Direct visitor spending impacts contribute 46 jobs, generating \$1.53 million in payroll, and \$4.11 million in direct output. The remaining direct impacts are generated from airport administration and airport capital expenditures.

Table 3-1 | 2022 Direct Impacts of All Airport Activity

	Jobs	Payroll	Output
Direct Impacts	163	\$17,977,200	\$25,956,300

Notes: Dollar values were rounded to the nearest hundred. Dollar values are presented in 2022 dollars.

Sources: IMPLAN V6.4, 2022; Tuolumne County, 2022; Columbia Airport, 2022; Kimley-Horn, 2023.

3.2 MULTIPLIER IMPACTS

As discussed in **Section 2.3**, the multiplier impacts include the sum of indirect and induced impacts. These impacts represent the spin-off effects from the direct impacts presented in **Section 3.1**. As shown in **Table 3-2**, the indirect impacts of all airport-related activity support 16 jobs within the County, generating \$1.52 million in payroll, and \$2.75 million in output. The induced impacts of all airport-related activity are higher than the indirect impacts, supporting 40 jobs with a payroll of \$5.11 million, which generates \$7.30 million in output. When combined, the 2022 multiplier impacts support an additional 56 jobs in Tuolumne County, with a payroll of \$6.62 million and an output of \$10.05 million.

**Table 3-2 | 2022 Multiplier Impacts of All Airport Activity**

	Jobs	Payroll	Output
Indirect Impacts	16	\$1,517,400	\$2,749,000
Induced Impacts	40	\$5,105,900	\$7,304,100
Combined Multiplier Impacts	56	\$6,623,200	\$10,053,100
<i>Note: Totals may not sum due to rounding. Dollar values were rounded to the nearest hundred. Dollar values are presented in 2022 dollars.</i>			

Sources: IMPLAN V6.4, 2022; Kimley-Horn, 2023.

4 2022 TOTAL ECONOMIC IMPACTS OF O22

As discussed in **Section 2.3**, the total economic impact results are the sum of the direct, indirect, and induced impacts, which were presented in **Section 3.1** and **3.2**, respectively. The impacts presented in **Table 4-1** are cumulative of all activity included in this analysis for calendar year 2022. The total annual economic impact of O22 in 2022 was 219 jobs within Tuolumne County, with an associated payroll of \$19.08 million. The airport-related activity is estimated to have generated \$30.10 million in total output within Tuolumne County in 2022. It is important to note that these impacts are annual figures and are expected to generally remain consistent from year to year barring any major changes in airport employment, capital expenditures, tenant activity, and visitor spending, which could increase or decrease the Airport's total economic contribution within the County.

Table 4-1 | 2022 Total Impacts of All Airport Activity

	Jobs	Payroll	Output
Direct Impacts	163	\$13,484,200	\$20,997,300
Multiplier Impacts	55	\$6,623,200	\$10,053,100
<i>Indirect Impacts</i>	16	\$1,517,400	\$2,749,000
<i>Induced Impacts</i>	40	\$5,105,900	\$7,304,100
Total Impacts	219	\$19,083,400	\$30,100,200
<i>Notes: Totals may not sum due to rounding. Dollar values were rounded to the nearest hundred. Dollar values are presented in 2022 dollars.</i>			

Sources: IMPLAN V6.4, 2022; Tuolumne County, 2022; Columbia Airport, 2022; Kimley-Horn, 2023.



ELEMENT 5:

Columbia Airport (O22)

Rent Study





COLUMBIA AIRPORT (O22) RENT STUDY

Prepared by Aviation Management Consulting Group

January 5, 2024
Kim MacFarlane, P.E.
Director of Public Works
Tuolumne County
2 South Green Street
Sonora, California 95370-4618

RE: Columbia Airport Rent Study

Dear Kim:

In accordance with your request and authorization, this writing transmits Aviation Management Consulting Group's (AMCG's) appraisal report in summary format for certain land and improvements located at Columbia Airport (Airport).

The purpose of this assignment was to determine the fair market value (FMV) of rent for the Subject Properties which are owned by Tuolumne County (County). The effective date for this report is the date of inspection (June 12, 2023). The conclusions of AMCG's analysis and a summary of pertinent data are outlined in the Executive Summary.

The analyses, conclusions, and values stated in the report are subject to the assumptions, hypothetical conditions, and limiting conditions described in this report. The extent of AMCG's investigation and analyses are described in the Scope of the Work section of this report. The analyses and report have been prepared for the sole use of the County. The accompanying summary report describes AMCG's conclusions and analyses. To understand the analyses and conclusions, the report must be read in its entirety; no part of the report is valid without the support of the other sections of the report.

The appraisal, the analyses, and the report are intended to comply with the provisions of the Uniform Standards of Professional Appraisal Practice (USPAP) in force as of the appraisal date, applicable to the development and reporting of this FMV rental analysis. The report itself is intended to be consistent with the requirements of USPAP Standards Rule 2-2. Additionally, the execution of the assignment is intended to comply with the supplemental standards enacted by the Federal Aviation Administration, specifically instructions pertinent to FMV analyses as described in the Compliance Guide Letter 2018-3 and any additional instructions included in the engagement documents. Supporting documentation is retained in our files.

Helping your aviation management excellence,

Matthew F. Fish, MAI
Appraiser
AMCG
Temporary License No. 3011911-001

David C. Benner, C.M.
Managing Consultant
AMCG



ELEMENT 5 — TABLE OF CONTENTS

- I. EXECUTIVE SUMMARY**
- II. INTRODUCTION**
 - A. Scope of Work
 - C. Intended Use and Intended User
 - D. Market Rent Defined
 - E. Key Underlying Assumptions
- III. COMMUNITY OVERVIEW**
 - A. Airport Sponsor
 - B. Geographic Location
 - C. Demographics
 - D. Business and Industry
 - E. Economic Factors
- IV. SUBJECT AIRPORT OVERVIEW**
 - A. Airport Description
 - B. Aircraft Operations
 - C. Based Aircraft
 - D. Commercial Operators
- V. SUBJECT PROPERTIES OVERVIEW**
 - A. Subject Properties
 - 1. Executive Hangar
 - 2. Small T-Hangar
 - 3. Portable T-Hangar
 - 4. Aeronautical Improved Land and Tiedowns
- VI. STUDY FINDINGS**
 - A. National Data
 - B. Regional Data (FAA Western Pacific Region)
 - C. Comparable Airport Data
 - D. Competitive Airport Data
- VII. RENTAL RATE SUMMARY**
 - A. Rental Rate Conclusions (By Component)
 - 1. Executive Hangar
 - 2. Small T-Hangar
 - 3. Portable T-Hangar
 - 4. Aeronautical Improved Land
 - 5. Small and Medium Tiedowns
 - B. Rental Rate Conclusions



VIII. APPENDIX

- A. Certifications
- B. Limiting Conditions
- C. Definitions and Acronyms
- D. Subject Properties Identification Map
- E. Subject Properties Photographic Survey
- F. Temporary Appraisal License



I. EXECUTIVE SUMMARY

Airport:	Columbia Airport 10723 Airport Road Columbia, California 95310
Scope of Work:	This summary report conveys Aviation Management Consulting Group's opinion of market rent for certain land and improvements (Subject Properties) located at Columbia Airport which are currently leased or available for lease from Tuolumne County.
Subject Properties:	The components of the Subject Properties include Executive Hangar, Small T-Hangar, Portable T-Hangar, Small and Medium Tiedowns, and Aeronautical Improved Land.
Date of Report:	January 5, 2024
Effective Date:	June 12, 2023
Methodology:	An opinion of market rent for the Subject Properties was developed based on an analysis of the information and data obtained for similar properties from national, regional, comparable, and competitive airports (which is summarized in Section VI. Study Findings).
Rental Rate Conclusions:	Table 1 identifies AMCG's opinion of market rent for the Subject Properties.

Table 1 – Rental Rate Conclusions

Rental Rate Conclusions				
Component	Identification	Size (SF)	Market Rent Opinion	
			PSF/YR	PU/MO
Executive Hangar	Fickel Box Hangar	2,500	\$3.20	\$667.00
	Row I	2,800	\$4.70	\$1,097.00
Small T-Hangar	Row A - E	784	N/A	\$247.50
	Row F	960		\$302.50
	Row G	960		\$302.50
	Row J - K	992		\$315.00
Portable T-Hangar	Richard	809		\$165.00
Aeronautical Improved Land	N/A	Up to 49,999	\$0.43	N/A
		50,000 - 249,999	\$0.41	
		250,000 - 999,999	\$0.45	
		1,000,000 and greater	\$0.29	
Tiedowns	Small (Nested)	N/A	N/A	\$73.00
	Medium (Nested)			\$95.00



II. INTRODUCTION

A. SCOPE OF WORK

This summary appraisal report conveys Aviation Management Consulting Group's (AMCG's) opinion of fair market value (FMV) of certain land and improvements (Subject Properties) located at the Columbia Airport (Airport) which are currently leased or available for lease from Tuolumne County (County).

The County is required, by the Federal Aviation Administration (FAA) *Airport Sponsor Assurances*, to "maintain a fee and rental structure for the facilities and services at the airport[s] which will make the airport[s] as self-sustaining as possible under the circumstances existing." Further, FAA Regulation Identifier Number (RIN) 2120-AF90, *Policy Regarding Airport Rates and Charges*, states that "rates, fees, rentals, landing fees, and other service charges ('fees') imposed on aeronautical users for the aeronautical use of the airport ('aeronautical fees') must be fair and reasonable." As such, the market rent opinions outlined in this *Airport Rent Study* are fair, reasonable, and can be consistently applied.

The FAA indicates that "reasonable methodologies may include, but are not limited to, historic cost valuation, direct negotiation with aeronautical users, or objective determinations of fair market value" which are further described below:

- Historic Cost Valuation – a historic cost valuation, as outlined in the *Policy Regarding Airport Rates and Charges*, "must allocate capital and operating costs among cost centers" in accordance with a reasonable, consistent, and transparent methodology as follows: (1) "costs of airfield facilities and services directly used by the aeronautical users may be fully included in the rate base" and (2) "costs of airport facilities and services used for both aeronautical and non-aeronautical uses (shared costs) may be included in the rate base if the facility or service in question supports the airfield activity reflected in that rate base". The rate base is defined as the "total of all costs of providing airfield facilities and services to aeronautical users (which may include a share of public-use roadway costs allocated to the airfield in accordance with this policy [Policy Regarding Airport Rates and Charges]) that may be recovered from aeronautical users through fees charged for providing airfield aeronautical services and facilities." While the historic cost valuation is an acceptable methodology from the FAA's perspective (and typically applied to air carrier service providers), this approach may result in a rental rate unreflective of similar aeronautical-use improvements available at comparable and competitive airports. As such, this approach was not deemed most appropriate.
- Direct Negotiation – The *Policy Regarding Airport Rates and Charges* is non-descriptive in terms of the methodology for initiating and completing a negotiation process. A negotiation, by definition, is to confer with another party to arrive at a settlement of a matter; in this case, rental rates for aeronautical-use improvements. A negotiation process can result in a market transaction if (1) it is an open market, (2) the buyer (tenant) and seller (County) are acting prudently and knowledgeable, and (3) the price is not affected by undue stimulus. However, as stated in the *Airport Sponsor Assurances*, each tenant (commercial or non-commercial) "shall be subject to the same rates, fees,



rentals, and other charges as are uniformly applicable” to other tenants for “the same or similar uses of such airport and utilizing the same or similar facilities.” For this reason, a direct negotiation methodology was not deemed most appropriate to determine a rental rate structure that is equitable for all similarly situated aeronautical-use tenants.

- Objective Determinations of Fair Market Value – Fair market value (FMV), as defined by Appendix Z of FAA Order 5190.6B *Airport Compliance Manual*, is “the highest price estimated in terms of money that a property will bring if exposed for sale in the open market allowing a reasonable time to find a purchaser or tenant who buys or rents with knowledge of all the uses to which it is adapted and for which it is capable of being used. It is also frequently referred to as the price at which a willing seller would sell and a willing buyer buy, neither being under abnormal pressure. FMV will fluctuate based on the economic conditions of the area.” The purpose of this *Airport Rent Study* is to determine FMV of rent. As such, pertinent lease data and rental rates being charged for similar properties at national, regional, comparable, and competitive airports were analyzed. The development of the Sales Comparison Approach, Cost Approach, and other sections of the Income Approach to FMV were not pertinent. A formal highest and best use analysis was not required, as a rental analysis for existing land and improvements is the primary consideration.

Consistent with the *Airport Sponsor Assurances*, each tenant should be subject to the same rental rates as are uniformly applicable to other tenants utilizing the same or similar improvements for aeronautical purposes. It is recognized that the size, access, amenities, and condition of the land and improvements (as applicable) may vary and as a result, the opinion of market rent may vary as well. However, the County will not charge unjustly discriminatory rental rates.

B. PROJECT APPROACH

To achieve the scope of work, AMCG completed the following work plan:

1. developed a profile of the Airport,
2. conducted a personal inspection of the Subject Properties,
3. identified comparable and competitive airports utilizing the profile of the Airport,
4. obtained rental rates (and related information) for aeronautical uses from the Airport as well as comparable and competitive airports identified,
5. analyzed the data obtained from the Airport as well as comparable and competitive airports,
6. analyzed national and regional data; and
7. developed an opinion of market rents for the Subject Properties based on the preceding analysis in conjunction with the Limiting Conditions outlined in the Appendix.



In drawing opinions of market rent for the Subject Properties, consideration was given to those factors that typically affect market rents for on-airport, aeronautical properties (e.g., property use, attributes, restrictions, limitations, etc.). Beyond this, AMCG's opinion of market rent for the Subject Properties has been formed based on a comparative analysis of current rents for aeronautical-use properties at national, regional, comparable, and competitive airports. The rental rates currently charged for the Subject Properties by the County were not included in the national, regional, comparable, or competitive analysis.

Market rents for off-airport properties were not utilized as this approach is highly problematic due to the different types of use. Off-airport properties and on-airport, aeronautical properties do not exhibit the same bundle of rights. It is very difficult, if not impossible, to determine the adjustment applied to unencumbered off-airport rental rates to reflect the constraints imposed by the FAA, the airport sponsor, and others pertaining to the development and/or use of on-airport, aeronautical properties.

C. INTENDED USE AND INTENDED USER

The purpose of this appraisal report is to set forth the investigations and analyses leading to the opinion of FMV rent for the Subject Properties located at Columbia Airport (Airport) in Columbia, California. The intended user of this report is Tuolumne County (County) for internal decision-making related to establishing the market rent for the Subject Properties.

D. MARKET RENT DEFINED

Market rent is defined as "the most probable rent that a property should bring in a competitive and open market under all conditions requisite to a fair lease transaction, the lessee and lessor each acting prudently and knowledgeably, and assuming the rent is not affected by undue stimulus. Implicit in this definition is the execution of a lease as of a specified date under conditions whereby:

- Lessee and lessor are typically motivated;
- Both parties are well informed or well advised, and acting in what they consider their best interests;
- Payment is made in terms of cash or in terms of financial arrangements comparable thereto; and
- The rent reflects specified terms and conditions typically found in that market, such as permitted uses, use restrictions, expense obligations, duration, concessions, rental adjustments and revaluations, renewal and purchase options, frequency of payments (annual, monthly, etc.), and tenant improvements (TIs)."¹

¹ Dictionary of Real Estate Appraisal, Appraisal Institute, Seventh Edition, 2022, Page 116-117.



E. KEY UNDERLYING ASSUMPTIONS

The market rent opinions conveyed in this summary report are based on the lessee having full and continued access to the Airport's airside and landside infrastructure. Additionally, the analysis was based on an evaluation of modified gross lease rates² (Executive Hangars, Small T-Hangars, Portable T-Hangars, and Tiedowns).

Market rents are driven by the amount a willing buyer (lessee) pays to a willing seller (lessor) to rent or lease a property. To the extent that local economic factors affect rental rates at the national, regional, comparable, and competitive airports, these economic factors will be reflected in the rental rate conclusions. As such, AMCG has identified and analyzed (on a comparative basis) the rents charged and paid for similar properties (by component) at a cross-section of airports to derive the market rent opinions for the Subject Properties.

AMCG recognizes that there are differences between the Airport and the comparable airports. Some of the comparable airports exhibit superior characteristics and some exhibit inferior characteristics. To identify airports that were considered most comparable to the Airport and draw conclusions that reflect the conditions at the Airport, the comparable airports were compared with the Airport using aeronautical activity and infrastructure indicators.

It is AMCG's experience that aeronautical activity and infrastructure indicators at airports typically run parallel to local economic indicators. Therefore, it is reasonable to assume that the airports identified as comparable to the Airport (based on the selection criteria) will be located in markets with economic and demographic characteristics that are similar to the subject market. As such, a separate analysis of local economic indicators at comparable airports was not deemed necessary in this case.

The following report summarizes AMCG's findings and opinions.

² Modified gross lease rates, by definition, occur when the lessor pays for a portion of maintenance, utilities, insurance, and/or taxes associated with the Subject Properties.



III. COMMUNITY OVERVIEW

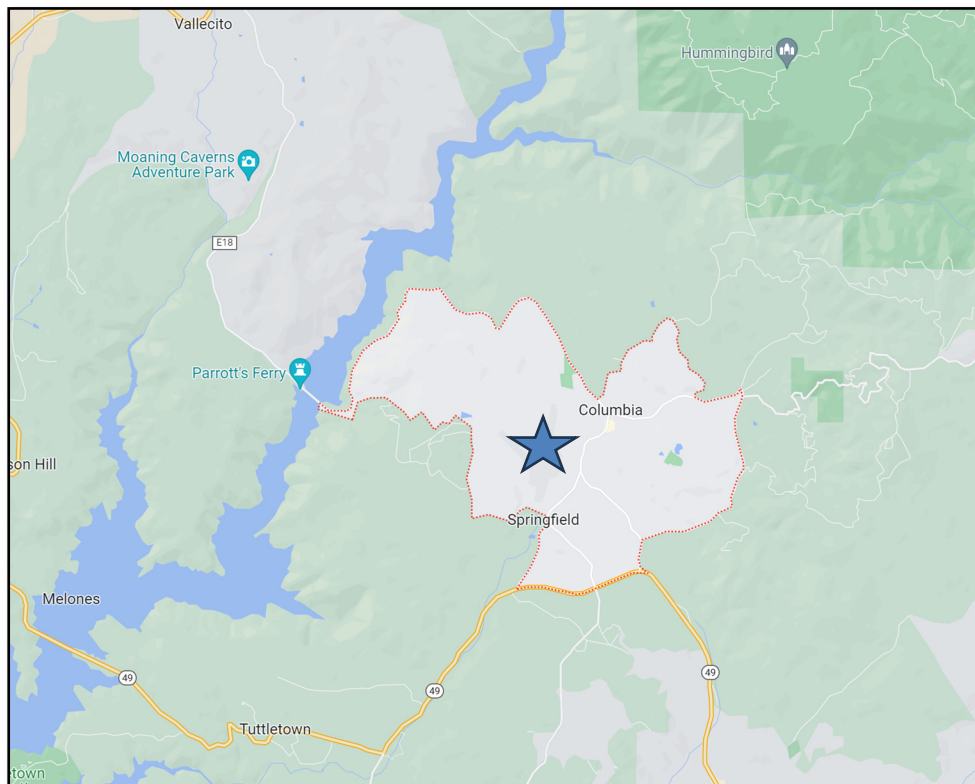
A. AIRPORT SPONSOR

The Airport is owned and operated by the County with an Airport Advisory Committee providing recommendations on policy matters as it relates to the operation and management of the Airport.

B. GEOGRAPHIC LOCATION

The Airport is located approximately 1 mile southwest of the Town of Columbia (Town) central business district. As identified in **Figure 1**, the Airport is located between the Town of Springfield and the Town of Columbia.

Figure 1: Geographic Location



C. DEMOGRAPHICS

The population of the Town has decreased at total of 10.9% or a compounded annual decrease of 1.0% from 2,577 in 2010 to 2,297 in 2020 (U.S. Census Bureau). The population of the County has increased a total of 3.5% or a compounded annual increase of 0.3% from 54,157 in 2010 to 56,074 in 2020 (U.S. Census Bureau).



D. BUSINESS AND INDUSTRY

The largest employment sectors in the Town are (1) professional, scientific, and technical services, (2) health care and social assistance, and accommodation and food services (3). These employment sectors account for approximately 47.4% of employment in the Town. The largest employment sectors in the County are (1) health care and social assistance, (2) accommodation and food services, and (3) retail trade. These employment sectors account for approximately 33.1% of employment in the County.

E. ECONOMIC FACTORS

The civilian labor for the County has decreased from 21,532 in 2015 to 19,877 in 2022 (U.S. Census Bureau), which represents a total decrease of 7.7% or a compounded annual change of 1.1%. As identified by the U.S. Bureau of Labor Statistics, the unemployment rate of the County was estimated to be 4.9% (June 2023) which is higher than the U.S. unemployment rate of 3.6% (June 2023).



IV. SUBJECT AIRPORT OVERVIEW

A. AIRPORT DESCRIPTION

The Airport, which consists of approximately 356 acres of land, has two runways, as follows:

- Runway 11/29: 2,607 feet long and 50 feet wide, turf in good condition.
- Runway 17/35: 4,673 feet long and 75 feet wide, grooved asphalt in good condition.

The Airport does not have an Air Traffic Control Tower but is served by one non-precision approach (RNAV-GPS) for Runway 17/35. The Airport is designated a General Aviation Airport in the *FAA National Plan of Integrated Airports System (NPIAS)* and a Local Airport in the *FAA General Aviation Airports: A National Asset* study.

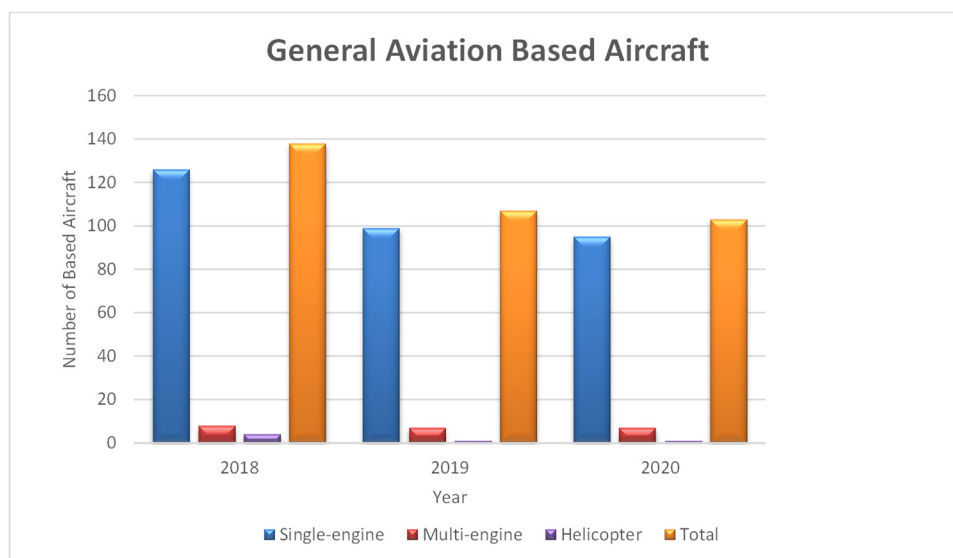
B. AIRCRAFT OPERATIONS

Total aircraft operations at the Airport were approximately 45,700 in 2019, as reported by the FAA Master Record 5010. Total general aviation operations consisted of 21,000 local operations (approximately 46%) and 22,900 itinerant operations (approximately 50%).

C. BASED AIRCRAFT

Figure 2 illustrates the number of based aircraft at the Airport from 2018 to 2020, as reported by the FAA Master Record 5010.

Figure 2: General Aviation Based Aircraft





As shown in **Table 2**, 103 aircraft were based at the Airport as of 2020. From 2018 to 2020, the number of total aircraft based at the Airport decreased a total of 25.4%, or a compounded annual decrease of 13.6%.

Table 2 | General Aviation Based Aircraft

General Aviation Based Aircraft					
Year	Single-engine	Multi-engine	Helicopter	Total	% Change
2018	126	8	4	138	N/A
2019	99	7	1	107	-22.5%
2020	95	7	1	103	-3.7%

D. COMMERCIAL OPERATORS

One fixed base operator (Bald Eagle Aviation) provides fueling (jet and avgas), line services, and aircraft parking (hangar and tiedown). Multiple specialized aviation service operators provide aircraft maintenance, aircraft rental, and flight training.



V. SUBJECT PROPERTIES OVERVIEW

A. SUBJECT PROPERTIES

The Subject Properties consists of certain land and improvements located at the Airport that are leased or available for lease from the County.

The Subject Properties are summarized in **Table 3**. Maps and a photographic survey of the Subject Properties are provided in the Appendix.

Table 3 Subject Properties Overview	
Subject Properties Overview	
Component	Size (SF)
Executive Hangar	16,500
Small T-Hangar	62,736
Portable T-Hangar	809
Aeronautical Improved Land	Varies
Tiedowns	

1. Executive Hangar

There is approximately 16,500 square feet of Executive Hangar included in the Subject Properties. The hangars each have electrical service.

- Fickel Box Hangar has a metal exterior and wooden interior, a 4-panel sliding metal door, fluorescent lighting, and asphalt flooring.
- Row I has a metal exterior and a steel frame interior, halide and LED lighting, and concrete flooring.

The property details of the Executive Hangar are outlined in **Table 4**.

Table 4 | Executive Hangar Summary

Executive Hangar Summary								
Identification	Number of Units	Size (SF)	Door			Access	Amenities	Condition
			Type	Width (FT)	Height (FT)			
Fickel Box Hangar	1	2,500	Sliding Metal	44	16	Fair	Poor	Poor
Row I	4	2,800	Bi-Fold	55	16	Good	Good	Average
	1		Sliding Metal					
Total	6	16,500						



2. Small T-Hangar

There is approximately 62,736 square feet of Small T-Hangar included in the Subject Properties. The hangars are fully subdivided, and each have electrical service, and fluorescent lighting.

- Hangars A – E have a steel frame exterior and a wooden interior, sliding metal door and asphalt flooring.
- Hangars F – K have a metal exterior and steel frame interior, sliding metal door, insulated ceiling, fire suppression and concrete flooring.

The property details of the Small T-Hangar are outlined in **Table 5**.

Table 5 | Small T-Hangar Summary

Small T-Hangar Summary								
Identification	Number of Units	Size (SF)	Door			Access	Amenities	Condition
			Type	Width (FT)	Height (FT)			
Row A - E	25	784	4-Panel	42	11	Good	Fair	Poor
Row F	9	960	2-Panel	40	12	Average	Good	Good
Row G	7	960		40	12			
Row J - K	28	992		42	12' 6"	Good		
Total	69	62,736						

3. Portable T-Hangar

There is one Portable T-Hangar included in the Subject Properties. As outlined in the Appendix, a Portable T-Hangar is not permanently affixed to the associated apron and typically is up to 1,000 square feet with a door width up to 40 feet up and a door height which can accommodate most single-engine powered aircraft.

The property details of the Portable T-Hangar are outlined in **Table 6**.

Table 6 | Portable T-Hangar Summary

Portable T-Hangar Summary								
Identification	Number of Units	Size (SF)	Door			Access	Amenities	Condition
			Type	Width (FT)	Height (FT)			
Richard	1	809	3-Panel	39	10	Fair	Average	Poor
Total	1	809						



4. *Aeronautical Improved Land and Tiedowns*

The Subject Properties include Aeronautical Improved Land and Tiedowns (Small and Medium). The details of each area are described below:

- Access
 - Aeronautical Improved Land (Average)
 - Small Tiedowns (Good)
 - Medium Tiedowns (Good)
- Condition
 - Small Tiedowns (Average)
 - Medium Tiedowns (Average)



VI. STUDY FINDINGS

Information and data from similar properties at the Airport and national, regional, comparable, and competitive airports was analyzed to derive an opinion of market rent for the Subject Properties. The results of the analysis are summarized in this section. Definitions of the Minimum, Maximum, Mean, Standard Deviation, Median, and Range (utilized in the following tables) are provided in the Appendix.

A. NATIONAL DATA

Rents obtained over the last 10 years from more than 750 airports located throughout the United States were analyzed. A summary and statistical analysis of the findings for national airports is provided in **Table 7**.

Table 7 | National Airport Data Summary

National Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$0.11	\$11.52	\$4.04	\$2.33	\$3.79	\$11.41
Small T-Hangar	\$45.00	\$655.00	\$257.84	\$124.23	\$225.50	\$610.00
Portable T-Hangar	\$80.00	\$291.20	\$159.00	\$69.29	\$153.38	\$211.20
Aeronautical Improved Land	\$0.04	\$1.69	\$0.37	\$0.26	\$0.30	\$1.65
Small Tiedown	\$25.00	\$160.00	\$56.31	\$34.80	\$45.00	\$135.00
Medium Tiedown	\$52.00	\$310.00	\$139.62	\$92.66	\$100.00	\$258.00

Rental rates for Small T-Hangar, Portable T-Hangar, and Tiedowns are "per unit per month" (pu/mo)

All other rental rates are "per square foot per year" (psf/yr)

B. REGIONAL DATA (FAA WESTERN PACIFIC REGION)

Rents obtained over the last 10 years from more than 125 airports in the FAA Western Pacific Region (consisting of Arizona, California, Hawaii, and Nevada³) were analyzed. A summary and statistical analysis of the findings for regional airports is provided in **Table 8**.

Table 8 | Regional Airport Data Summary

Regional Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$0.41	\$18.75	\$5.10	\$2.58	\$4.80	\$18.34
Small T-Hangar	\$67.00	\$739.00	\$295.81	\$142.47	\$262.50	\$672.00
Portable T-Hangar	\$10.25	\$291.20	\$88.11	\$75.07	\$80.00	\$280.95
Aeronautical Improved Land	\$0.05	\$2.71	\$0.64	\$0.59	\$0.40	\$2.66
Small Tiedown	\$32.00	\$73.00	\$46.00	\$15.80	\$40.00	\$41.00
Medium Tiedown	\$52.00	\$83.00	\$65.60	\$11.10	\$64.00	\$31.00

Rental rates for Small T-Hangar, Portable T-Hangar, and Tiedowns are "per unit per month" (pu/mo)

All other rental rates are "per square foot per year" (psf/yr)

³ While American Samoa, Commonwealth of the Northern Mariana Islands, and Guam are included in the FAA Western-Pacific Region, rents from airports in these territories were not included or analyzed.



C. COMPARABLE AIRPORT DATA

The first step in identifying comparable airports is developing an accurate profile of the Airport. The profile was developed based on data available from various sources, including the FAA. The Airport profile provided the basis for establishing the criteria and parameters for identifying comparable airports.

The selection of comparable airports was based on aeronautical activity and infrastructure criteria including the following:

- The Airport is utilized solely by the general aviation segment of the market. As such, airports with significant air carrier operations were not considered comparable.
- The Airport is classified as a General Aviation airport in the FAA NPIAS. As such, only General Aviation airports were considered comparable.
- The Airport is classified as a Local airport in the FAA *General Aviation Asset Study*. As such, only Local airports were considered comparable.
- The Airport does not have a control tower or precision approach. As such, airports without a control tower and without a precision approach were considered comparable.
- The Airport consists of 356 acres. Airports having a total acreage between 150 and 600 acres were considered comparable.
- The Airport has two runways, one of which is 4,673 feet in length. Airports with at least one runway greater than 3,000 feet and less than 7,000 feet were considered comparable.
- For the 12-month period ending December 31, 2022 (as reported by the FAA Master Record 5010), general aviation itinerant operations at the Airport totaled 22,900. As such, the range for general aviation itinerant operations was established at 10,000 to 35,000.
- For the 12-month period ending December 31, 2022 (as reported by the FAA Master Record 5010), total operations at the Airport totaled 45,657. As such, the range for total operations was established at 20,000 to 65,000.
- The number of based aircraft at the Airport as of December 31, 2022 (as reported by the FAA Master Record 5010) was 103. As such, the range for based aircraft was established at 50 to 180.
- The Airport does not have based jet aircraft. As such, only airports with 5 or less based jet were considered comparable.

While a total of 19 airports were considered comparable to the Airport, rental rates and usable information from 18 airports⁴ were obtained and analyzed, as shown in **Table 9**.

⁴ Relevant and usable information was not available from Joliet Regional Airport (JOT)



Table 9 | Comparable Airports

Comparable Airports		
Airport	Identifier	Location
Bakersfield Municipal Airport	L45	Bakersfield, California
Bolingbrook's Clow International Airport	1C5	Bolingbrook, Illinois
Bruce Campbell Field Airport	MBO	Madison, Mississippi
Ionia County Airport	Y70	Ionia, Michigan
Jefferson County International Airport	0S9	Port Townsend, Washington
Laurel Municipal Airport	6S8	Laurel, Montana
Middletown Regional Airport	MWO	Middletown, Ohio
Ocean City Municipal Airport	OXB	Ocean City, Maryland
Outlaw Field Airport	CKV	Clarksville, Tennessee
Owosso Community Airport	RNP	Owosso, Michigan
Placerville Airport	PVF	Placerville, California
Scappoose Airport	SPB	Scappoose, Oregon
Sedona Airport	SEZ	Sedona, Arizona
Ukiah Municipal Airport	UKI	Ukiah, California
Wadsworth Municipal Airport	3G3	Wadsworth, Ohio
Watertown Municipal Airport	RYV	Watertown, Wisconsin
Wetumpka Municipal Airport	08A	Wetumpka, Alabama
William R Pogue Municipal Airport	OWP	Sand Springs, Oklahoma

Table 10 provides a summary and statistical analysis of the findings for the comparable airports.

Table 10 | Comparable Airport Data Summary

Comparable Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$1.07	\$3.63	\$2.52	\$0.81	\$2.40	\$2.56
Small T-Hangar	\$65.00	\$262.00	\$185.46	\$61.54	\$185.00	\$197.00
Portable T-Hangar	\$166.00	\$199.00	\$182.50	\$23.33	\$182.50	\$33.00
Aeronautical Improved Land	\$0.08	\$0.98	\$0.38	\$0.33	\$0.17	\$0.90
Small Tiedown	\$25.00	\$75.00	\$49.44	\$15.31	\$45.00	\$50.00
Medium Tiedown	\$25.00	\$89.00	\$55.57	\$22.00	\$50.00	\$64.00

Rental rates for Small T-Hangar, Portable T-Hangar, and Tiedowns are "per unit per month" (pu/mo)

All other rental rates are "per square foot per year" (psf/yr)

D. COMPETITIVE AIRPORT DATA

Typically, an airport is considered competitive if located in proximity to the Airport and serves a similar market. Each airport identified is then compared to the Airport based on (1) infrastructure and (2) available products, services, and facilities.

For the purposes of this study, airports within 60 nautical miles of the Airport were identified as being potentially competitive airports. While a total of 20 airports were considered competitive to the Airport, rental rates and usable information from 14⁵ airports were obtained and analyzed, as shown in **Table 11**.

⁵ Relevant and usable information was not available from Calaveras County Airport (CPU), Castle Airport (MER), Chowchilla Airport (206), Franklin Field Airport (F72), Mariposa-Yosemite Airport (MPI) and Turlock Municipal Airport (O15)

**Table 11 | Competitive Airports**

Competitive Airports		
Airport	Identifier	Location
Byron Airport	C83	Byron, California
Cameron Park Airport	O61	Cameron Park, California
Georgetown Airport	E36	Georgetown, California
Gustine Municipal Airport	3O1	Gustine, California
Lake Tahoe Airport	TVL	South Lake Tahoe, California
Merced Yosemite Regional Airport	MCE	Merced, California
Modesto City-County Airport - Harry Sham Field	MOD	Modesto, California
Oakdale Airport	O27	Oakdale, California
Placerville Airport	PVF	Placerville, California
Sacramento Executive Airport	SAC	Sacramento, California
Sacramento Mather Airport	MHR	Sacramento, California
Stockton Metropolitan Airport	SCK	Stockton, California
Tracy Municipal Airport	TCY	Tracy, California
Westover Field-Amador County Airport	JAQ	Jackson, California

Table 12 provides a summary and statistical analysis of the findings for the competitive airports.

Table 12 | Competitive Airport Data Summary

Competitive Airport Data Summary						
Component	Minimum	Maximum	Mean	Standard Deviation	Median	Range
Executive Hangar	\$0.52	\$6.22	\$2.81	\$1.69	\$2.34	\$5.70
Small T-Hangar	\$137.50	\$331.18	\$214.62	\$62.17	\$203.00	\$193.68
Portable T-Hangar	\$99.00	\$99.00	\$99.00	N/A	\$99.00	N/A
Aeronautical Improved Land	\$0.16	\$0.98	\$0.59	\$0.32	\$0.52	\$0.82
Small Tiedown	\$20.00	\$95.00	\$51.50	\$24.95	\$43.00	\$75.00
Medium Tiedown	\$70.00	\$89.00	\$78.00	\$9.85	\$75.00	\$19.00

Rental rates for Small T-Hangar, Portable T-Hangar, and Tiedowns are "per unit per month" (pu/mo)

All other rental rates are "per square foot per year" (psf/yr)



VII. RENTAL RATE SUMMARY

A. RENTAL RATE CONCLUSIONS (BY COMPONENT)

The rental rate conclusions (effective June 12, 2023, which is consistent with the date of property inspection) are based on the analysis of the Subject Properties and the rents being charged for similar properties at the Airport and national, regional, comparable, and competitive airports. The market rental rate conclusions are conveyed on a “per square foot per year” (psf/yr) or a “per unit per month” (pu/mo) basis.

Throughout the following analysis, more weight has been given to the national and regional airports as limited relevant and usable data was available from the comparable and competitive airports.

The average national, regional, comparable, and competitive rental rates are representative of airport properties with the following attributes (as applicable):

- average airside and landside access,
- average amenities, and
- average condition.

Each of these attributes is rated using the following descriptors: poor, fair, average, good, and excellent. Once a base rental rate was derived for the Airport, specific conclusions were estimated for each component of the Subject Properties based on size, access, amenities, and condition (as applicable). For the purposes of this analysis, size adjustments were developed, where appropriate, based on an analysis of AMCG’s proprietary industry database (for all airports nationally). This process included an analysis of more than 4,500 data points correlating size ranges to existing rental rates compared to the national average rental rate.

1. *Executive Hangar*

The results of the study indicate that the average rental rates for Executive Hangar range from \$2.52 psf/yr at comparable airports to \$5.10 psf/yr at regional airports. The average rental rate at competitive airports was \$2.81 psf/yr and \$4.04 psf/yr at national airports. It is significant to note the rental rates for Executive Hangar range from a minimum of \$0.11 psf/yr at national airports to a maximum of \$18.75 psf/yr at regional airports.

Based on analyzing all available data, a base rental rate of \$4.25 psf/yr was derived.

The average rental rate for an Executive Hangar exhibits the following size adjustments compared to the national average rental rate.



Table 13 | Executive Hangar Rental Rate Size Adjustments

Rental Rate Size Adjustments	
Range (square feet)	Adjustment (based on size)
Up to 2,999	0%
3,000-4,999	5%
5,000 and greater	-10%

Utilizing the base rental rate and predicated on adjustments for size, access, amenities, and condition, the estimated rental rate conclusions are outlined in **Table 14**.

Table 14 | Executive Hangar Conclusions Summary

Executive Hangar Conclusions Summary									
Identification	Size (SF)	Base Rental Rate	Adjustments				Calculated Result	Market Rent Opinion	
			Size	Access	Amenities	Condition		PSF/YR	PU/MO
Fickel Box Hangar	2,500	\$4.25	0%	-5%	-10%	-10%	\$3.19	\$3.20	\$667.00
Row I	2,800			5%	5%	0%	\$4.68	\$4.70	\$1,097.00

2. Small T-Hangar

The results of the study indicate that the average rental rates for a Small T-Hangar range from \$185.46 pu/mo at comparable airports to \$295.81 pu/mo at regional airports. The average rental rate at competitive airports was \$214.62 pu/mo and \$257.84 pu/mo at national airports. It is significant to note the rental rates for Small T-Hangar range from a minimum of \$45.00 pu/mo at national airports to a maximum of \$739.00 pu/mo at regional airports.

Based on analyzing all available data, a base rental rate of \$275.00 pu/mo was derived.

Utilizing the base rental rate and predicated on adjustments for access, amenities, and condition, the estimated rental rate conclusions are outlined in **Table 15**.

Table 15 | Small T-Hangar Conclusions Summary

Small T-Hangar Conclusions Summary										
Identification	Size (SF)	Base Rental Rate	Adjustments				Calculated Result	Market Rent Opinion		
			Size	Access	Amenities	Condition				
Row A - E	784	\$275.00	N/A	5%	-5%	-10%	\$247.50	\$247.50		
Row F	960			0%	5%	5%	\$302.50	\$302.50		
Row G	960			5%			\$302.50	\$302.50		
Row J - K	992						\$316.25	\$315.00		

All rental rates are "per unit per month" (pu/mo)

3. Portable T-Hangar

The results of the study indicate that the average rental rates for Portable T-Hangar range from \$88.11 pu/mo at regional airports to \$182.50 pu/mo at regional airports. The average rental rate at comparable airports was \$99.00 pu/mo and \$159.00 pu/mo at national airports. It is significant to note the rental rates for Portable T-Hangar range from a minimum of \$10.25 pu/mo at regional airports to a maximum of \$291.20 pu/mo at national and regional airports.



Portable T-Hangars that are owned and leased by the airport sponsor are not common at airports, as such, a comparative analysis of data in the national airport database was conducted. This analysis included airports where Portable T-Hangars and T-Hangars are both leased. Through this analysis, it was determined that an adjustment of -25% from similarly sized T-Hangars for Portable T-Hangars exists at such airports.

Utilizing the Small T-Hangar base rental rate and predicated on adjustments for type, access, amenities, and condition, the estimated rental rate conclusions are outlined in **Table 16**.

Table 16 | Portable T-Hangar Conclusions Summary

Portable T-Hangar Conclusions Summary								
Identification	Size (SF)	Base Rental Rate	Adjustments				Calculated Result	Market Rent Opinion
			Type	Access	Amenities	Condition		
Richard	809	\$275.00	-25%	-5%	0%	-10%	\$165.00	\$165.00

All rental rates are "per square foot per year" (pu/mo)

All rental rates are "per square foot per year" (pu/mo)

4. Aeronautical Improved Land

The results of the study indicate that the average rental rates for Aeronautical Improved Land range from \$0.37 psf/yr at national airports to \$0.64 psf/yr at regional airports. The average rental rate at comparable was \$0.38 psf/yr and \$0.59 psf/yr at regional airports. It is significant to note the rental rates for Aeronautical Improved Land range from a minimum of \$0.04 psf/yr at national airports to a maximum of \$2.71 psf/yr at regional airports.

Based on analyzing all available data, a base rental rate of \$0.45 psf/yr was derived.

The average rental rate for Land exhibits the following size adjustments compared to the national average rental rate.

Table 17 | Land Rental Rate Size Adjustments

Rental Rate Size Adjustments	
Range (square feet)	Adjustment (based on size)
Up to 49,999	-5%
50,000 – 249,999	-10%
250,000 – 999,999	0%
Greater than 1,000,000	-35%

Utilizing the base rental rate and predicated on adjustments for size and access, the estimated rental rate conclusions are outlined in **Table 18**.



Table 18 | Aeronautical Improved Land Conclusions Summary

Aeronautical Improved Land Conclusions Summary					
Size (SF)	Base Rental Rate	Adjustments		Calculated Result	Market Rent Opinion
		Size	Access		
Up to 49,999	\$0.45	-5%	0%	\$0.43	\$0.43
50,000 - 249,999		-10%		\$0.41	\$0.41
250,000 - 999,999		0%		\$0.45	\$0.45
1,000,000 and greater		-35%		\$0.29	\$0.29

All rental rates are "per square foot per year" (psf/yr)

5. Small and Medium Tiedowns

The results of the study indicate that the average rental rates for Small Tiedowns range from \$46.00 pu/mo at regional airports to \$56.31 pu/mo at national airports. The average rental rate at comparable airports was \$49.44 pu/mo and \$51.50 pu/mo at competitive airports. It is significant to note the rental rates for Small Tiedown range from a minimum of \$25.00 pu/mo to a maximum of \$160.00 pu/mo at national airports.

Based on analyzing all available data, a base rental rate of \$70.00 pu/mo for Small Tiedowns was derived.

The results of this study indicate that the average rental rates for Medium Tiedowns range from \$55.57 pu/mo at comparable airports to \$139.62 pu/mo at national airports. The average rental rate at regional airports was \$65.60 pu/mo and \$78.00 pu/mo at competitive airports. It is significant to note the rental rates for Medium Tiedown range from a minimum of \$52.00 pu/mo at national and regional airports to a maximum of \$310.00 pu/mo at national airports.

Based on analyzing all available data, a base rental rate of \$90.00 pu/mo for Medium Tiedowns was derived.

Utilizing the base rental rate and predicated on adjustments for access and condition, the estimated rental rate conclusions are outlined in **Table 19**.

Table 19 | Tiedown Conclusions Summary

Tiedowns Conclusions Summary						
Type	Base Rental Rate	Adjustments			Calculated Result	Market Rent Opinion
		Size	Access	Condition		
Small (Nested)	\$70.00	N/A	5%	0%	\$73.50	\$73.00
Medium (Nested)	\$90.00				\$94.50	\$95.00

All rental rates are "per unit per month" (pu/mo)

B. RENTAL RATE CONCLUSIONS

Table 20 identifies AMCG's opinion of Market Rent for the Subject Properties



Table 20 | Rental Rate Conclusions

Rental Rate Conclusions				
Component	Identification	Size (SF)	Market Rent Opinion	
			PSF/YR	PU/MO
Executive Hangar	Fickel Box Hangar	2,500	\$3.20	\$667.00
	Row I	2,800	\$4.70	\$1,097.00
Small T-Hangar	Row A - E	784	N/A	\$247.50
	Row F	960		\$302.50
	Row G	960		\$302.50
	Row J - K	992		\$315.00
Portable T-Hangar	Richard	809		\$165.00
Aeronautical Improved Land	N/A	Up to 49,999	\$0.43	N/A
		50,000 - 249,999	\$0.41	
		250,000 - 999,999	\$0.45	
		1,000,000 and greater	\$0.29	
Tiedowns	Small (Nested)	N/A	N/A	\$73.00
	Medium (Nested)			\$95.00



VIII. APPENDIX

A. CERTIFICATIONS

I certify that, to the best of my knowledge and belief...

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and represent our personal, impartial, unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the Subject Properties and no personal interest with respect to the parties involved with this assignment.
- I have no bias with respect to the Subject Properties or to the parties involved with this assignment.
- This assignment was not contingent on developing or reporting predetermined results.
- AMCG's compensation for completing this assignment is not contingent on the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the Uniform Standards of Professional Appraisal Practice (USPAP).
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- David Benner has made a personal inspection of the Subject Properties.
- Matthew Fish, MAI, has not made a personal inspection of the Subject Property and has relied on the reports and observations of David Benner.
- As of the date of this report, I, Matthew Fish, MAI, have completed the continuing education program for designated members of the Appraisal Institute.
- David Benner and Katie Gainer provided significant real property appraisal assistance to the person signing this certification in the research and analysis and this report.
- AMCG has performed no services, as an appraiser or in any other capacity, regarding the Subject Properties within the three-year period immediately preceding acceptance of this assignment.

Matthew F. Fish, MAI

Appraiser

AMCG

Temporary License No. 3011911-001



B. LIMITING CONDITIONS

This report is subject to the following conditions and to other specific and limiting conditions as described by Aviation Management Consulting Group, Inc. (AMCG) in this report.

1. AMCG assumes no responsibility for matters legal in nature affecting the Subject Properties, nor does AMCG render any opinion as to the title of the Subject Properties, which are assumed to be good and marketable. All existing liens and encumbrances, if any, have been designated and the Subject Properties have been analyzed as though free and clear and held under responsible ownership and competent management.
2. Information, estimates, and opinions furnished to AMCG and contained in this report were obtained from sources considered to be reliable and are believed to be true and correct. However, AMCG assumes no responsibility for their accuracy.
3. Although dimensions were taken from a source considered reliable, this should not be construed as a survey. The exact size of the Subject Properties and legal description (as appropriate) should be verified by a licensed engineer or surveyor.
4. Unless noted in this report, the conclusions do not include contributory value of any personal property, furniture, fixtures, equipment, or on-going business value.
5. It is assumed that the utilization of the Subject Properties is within the boundaries or property lines and that there is no encroachment or trespass unless noted in this report.
6. This report is prepared for the sole, exclusive use of the client. No third parties are authorized to rely on this report without the prior written consent of AMCG.
7. It is assumed that all applicable zoning and use regulations have been complied with unless a non-conformity was stated, defined, and considered in this report.
8. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or federal government or private entity or organization have been or can be obtained or renewed for any use on which the conclusions are based.
9. Full compliance with all applicable federal, state, and local environmental regulations and laws is assumed unless noncompliance is stated, defined, and considered in this report.
10. AMCG does not have any knowledge of the existence of potentially hazardous material, gases, toxic waste, or mold on or in the Subject Properties. To AMCG's knowledge, the presence of potentially hazardous waste, materials, or gases has not been detected, or if they have been detected, it has been determined that the amount or level is considered to be safe according to standards established by the Environmental Protection Agency (EPA). However, AMCG is not qualified to detect such substances and does not make any guarantees or warranties that the Subject Properties have been tested for the presence of potentially hazardous waste materials or gases, if tested, that the tests were conducted pursuant to EPA-approved procedures. The existence of any potentially hazardous materials, gases, toxic waste, or mold may have an effect on the conclusions. An expert in this field should be retained by the client if desired.



11. AMCG is not a property or environmental inspector. The AMCG team has provided an opinion of rent. This report does not guarantee that the Subject Properties are free of defects of environmental issues. AMCG has performed an inspection of the visible and accessible areas only. AMCG is not qualified to determine the existence of mold, the cause of mold, the type of mold, or whether, if any, mold exists, the mold might pose any risk to the Subject Properties or its inhabitants. Mold may be present in areas of the Subject Properties, including areas AMCG could not see. A professional property inspector or environmental inspection is recommended.
12. It is assumed the Subject Properties will have an adequate supply of energy in the future.
13. The American with Disabilities Act (ADA) became effective January 26, 1992. AMCG has not made a specific compliance survey and analysis of the Subject Properties to determine if the Subject Properties are in conformity with the various detailed analysis of the requirements of the ADA. It is possible that a compliance survey of the Subject Properties together with a detailed analysis of the requirements of the ADA could reveal that the Subject Properties are not in compliance with one or more of the requirements of the ADA. If so, this fact could have a negative impact on the conclusion. Since AMCG has no direct evidence relating to this issue, possible noncompliance with the requirements of the ADA was not considered in the analysis.
14. AMCG assumes there are no hidden or unapparent conditions of the Subject Properties, subsoil, or structures that would render the Subject Properties more or less valuable. AMCG assumes no responsibility for such conditions or for engineering that might be required to discover such factors.
15. No requirements shall be made of AMCG to give testimony or appear in court by reason of this report of the Subject Properties in question, unless arrangements have been made previously. If any courtroom or administrative testimony is required in connection with this report, additional fees and expenses shall be charged for those services.
16. Possession of this report, or copy hereof, does not carry with it the right of publication nor may it be used for any purpose whatsoever by any entity but the client without the prior written consent of AMCG and the client.
17. Neither all nor any part of the contents of this report shall be disseminated to the public through advertising media or public means of communication without the prior written consent of AMCG and the client.
18. AMCG's inspection of the site shall in no way be constructed as an engineering inspection for structural soundness, physical condition, or for the condition of the mechanical systems.



C. DEFINITIONS AND ACRONYMS

- Aeronautical Improved Land – Airport land having access (airside and landside) and utilities to the property boundary.
- Commercial – An activity undertaken with the intent to generate and/or secure earnings, income, or compensation (including exchange or barter of goods or services), and/or profit, whether or not such objectives are accomplished.
- Executive Hangar – A square or rectangular-shaped hangar designed to accommodate the proprietary aircraft operations of a single company or individual. Executive Hangars (typically smaller than 100 feet by 100 feet) are typically larger than T-Hangars and smaller than Community Hangars. These hangars may have associated shop, office, and storage areas located within or adjacent to the footprint of the hangar.
- GPS – Global positioning system.
- Itinerant – Aircraft operations terminated at an airport which (1) arrive from outside the airport area or (2) depart the airport and leave the airport area.
- Local – Aircraft operations which (1) remain in the local traffic pattern, (2) execute simulated instrument approaches or low passes at an airport, or (3) operate to or from an airport and a designated practice area within a 20-mile radius of the Air Traffic Control Tower.
- Maximum – Maximum value present in the data range.
- Mean – Arithmetic average of all data in the data range.
- Median – Value wherein half of the data points in the number series are below while half of the data points in the number series are above.
- Minimum – Minimum value present in the data range.
- Portable Hangar – A hangar that is square, rectangular-shaped, or “T” shaped and is not permanently affixed to associated apron area and the Portable Hangar can be reasonably removed or is designed to be removed.
 - Small Portable Hangar – Typically up to 1,000 square feet with a door width up to 40 feet and a door height which can accommodate most single-engine piston-powered aircraft.
- Range – Mathematical difference between the maximum and minimum values of the data range.
- RNAV – GPS – Area navigation-global positioning system.
- Standard Deviation – Statistical method designed to mathematically measure the variability in a set of data points. The calculated figure for standard deviation is indicative of the relative distance between the mean and every data point. For a normally distributed data range, approximately 68% of the data points would fall within one standard deviation of the mean, as illustrated by a normal bell curve. Similarly, approximately 95% of the data points would fall within two standard deviations, while approximately 99.7% of the data points would fall within three standard deviations of the mean. Assuming the data points from the airports are representative of the population and the population follows a normal bell curve, the calculated standard deviation values would illustrate the relative variability in data points (i.e., how close these data points are to the mean).



- T-Hangar - A Hangar that typically has the capacity to store only one aircraft, usually not larger than a cabin class multi-engine aircraft. This type of hangar derives its name from its shape (in the form of a “T”) which increases the efficiency of the design so as to accommodate the wingspan and the tail section of an aircraft. T-Hangars may be stand-alone structures, or they may be combined and “nested” so that the tail sections of the “T” configuration interlock to form a single congruous structure.
 - Small T-Hangar - Typically up to 1,000 square feet with a door width up to 40 feet and a door height which can accommodate most single-engine piston-powered aircraft (e.g., Beechcraft Bonanza; Cessna 150, 172, 182, and 210; Cirrus 20 and 22; Diamond Star and Katana; Piper Arrow, Cherokee, and Saratoga; etc.).
- Tiedown - An aircraft parking area typically signified by a painted “T” and equipped with three-point tiedown anchors to secure the aircraft wingtips and tail.
 - Small Tiedown - Utilization of a Tiedown by most single-engine piston-powered aircraft (e.g., Beechcraft Bonanza; Cessna 150, 172, 182, and 210; Cirrus 20 and 22; Diamond Katana and Diamond Star; Piper Arrow, Cherokee, and Saratoga; etc.) with an overall width up to 40 feet.
 - Medium Tiedown - Utilization of a Tiedown by most light multi-engine piston-powered aircraft (e.g., Cessna 310, Diamond Twin Star, Piper Seminole, Piper Seneca, etc.) with an overall width from 40 feet up to 45 feet.



D. SUBJECT PROPERTIES IDENTIFICATION MAP

Figure 4: Subject Properties



For reference purposes only



E. SUBJECT PROPERTIES PHOTOGRAPHIC SURVEY



Executive Hangar
Fickel Box Hangar



Executive Hangar
Fickel Box Hangar



Row I
Executive Hangar



Row I
Executive Hangar



Small T-Hangar
Row A - E



Small T-Hangar
Row A - E



Small T-Hangar
Row F - G



Small T-Hangar
Row F - G



Small T-Hangar
Row J - K



Small T-Hangar
Row J - K



Portable T-Hangar
Richard



Tiedown



F. TEMPORARY APPRAISAL LICENSE



Business, Consumer Services & Housing Agency
BUREAU OF REAL ESTATE APPRAISERS
TEMPORARY PRACTICE PERMIT

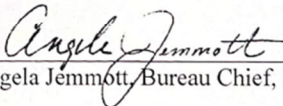
BREA APPRAISER IDENTIFICATION NUMBER 3011911-001

Matthew F. Fish

having demonstrated good standing at the Certified General level in the State of Colorado is authorized to perform the appraisal assignment(s) described below:

Columbia Airport – 10723 Airport Rd., Columbia, CA 95310
Pine Mountain Lake Airport – 20980 Elderberry Way., Groveland, CA 95321

This permit is valid until the completion of the 2 appraisal(s) described, the expiration date indicated below or the expiration of the license issued by the State of Colorado whichever occurs first.


Angela Jemmott, Bureau Chief, BREA

3073817

Date Issued: November 1, 2023
Date Expires: December 31, 2023

THIS DOCUMENT CONTAINS A TRUE WATERMARK - HOLD UP TO LIGHT TO SEE "CHAIN LINK"



www.coffmanassociates.com

KANSAS CITY
(816) 524-3500

12920 Metcalf Avenue
Suite 200
Overland Park, KS 66213

PHOENIX
(602) 993-6999

4835 E. Cactus Road
Suite 235
Scottsdale, AZ 85254