Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE ERV KERR COUNTY

LOUIS SCHREINER FIELD

KERRVILLE/KERR COUNTY AIRPORT
LOUIS SCHREINER FIELD

AIRPORT MASTER PLAN

FINAL REPORT
FEBRUARY 2013

Prepared for:

Kerr County

and

the City of Kerrville, Texas

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Executive Summary

Introduction

The primary goal of the Kerrville/Kerr County Airport – Louis Schreiner Field Master Plan is to realistically define current and future operational demand at the Airport, evaluate facility requirements to meet such demands, and develop an effective and sound Capital Improvement Program. The Master Planning process included several progress meetings for Airport Board members, select community leaders, and the public to solicit input and comments for the Master Plan and airport development recommendations. This process and input created a proactive document that identifies and plans for future needs and laid out a systematic approach to airport development..

Master Plan Approach

This Master Plan covers a planning period of 2009-2030 and includes the following major components:

- Inventory and background data;
- Forecast of aviation demand;
- Facility requirements and needs;
- Alternatives development;
- Finance and management plan; and
- Phased development plan.

The Airport and Where It's Headed!

The Kerrville/Kerr County Airport is an important regional transportation asset encompassing 528 acres with dual runways serving single- and twin-engine aircraft and helicopters, as well as turboprops and turbine-powered business jets. The primary runway, Runway 12/30, is 6,000' in length and the crosswind runway, Runway 3/21, is 3,592' in length. Support for the Airport has been impressive as funding assistance from all three (3) levels of local, state, and federal support agencies equates to approximately $11.6 Million since 1968.

Based on FAA aeronautical projections for aviation and growth in the region, operations at the Airport are forecast to increase from the existing level of 60,000 aircraft movements to 119,000 by 2030 and based aircraft are forecast to increase from 166 in 2010 to 252 by the end of the forecast period. Of these operations, the Master Plan postulates approximately 4,400 actual operations will be conducted under IFR conditions.

An Iterative Alternatives Analysis

A thorough analysis of future airport facility requirements ensures support facilities are able to meet forecast demand and meet FAA design criteria standards. After several iterations of proposed layouts and aircraft maneuvering, a recommended development plan was devised based on input from the Master Plan committee members. This plan included both airside and landside concepts.

Key improvement needs during the next 3-5 years include:

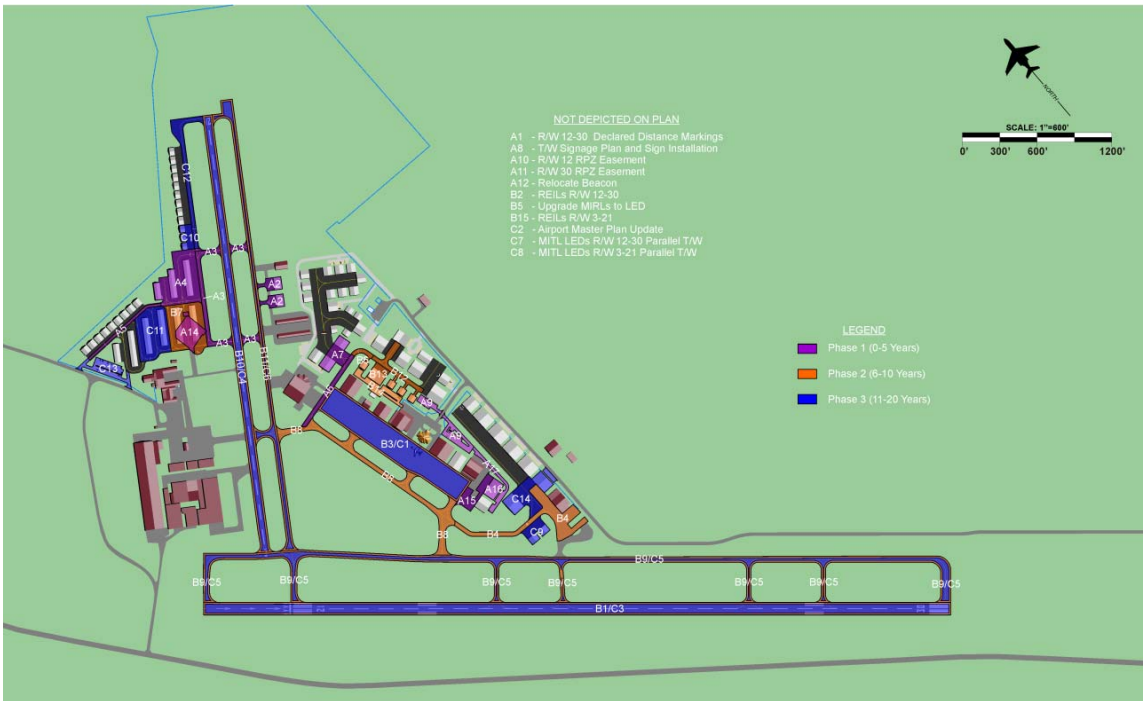
- Correcting the Runway Safety (RSA) and Object Free Area (ROFA) deficiencies off the end of Runway 12;
- Correcting the ROFA width deficiency for Runway 12/30;
- Need for additional hangar development; and
- Need for additional terminal building auto parking.

Within the next five years, it is forecasted that T-hangar space will need to expand from its current square footage of 94,500 to 113,400 square feet by 2015 and executive / box hangar type facilities will need to add an additional 35,000 square feet of space. The T-hangars would accommodate a total of 30 individual units while the executive / box hangars equates to a total of 5 individual structures varying in size from 6,000 square feet to 15,000 square feet.

A Preferred Development Plan

Based on anticipated demand and associated facility needs, a phased development plan was created to provide general phasing and capital projects financial guidance to airport staff over the 20-year planning period. The Phased Development Plan stages the proposed improvements based on the interrelationships of individual projects and from input received from Airport staff. This plan also establishes the basic finances for each development action and identifies potential funding sources. The proposed Capital Improvement Program presents capital improvement projects during each period, but does not assume their financial feasibility. A summary of the totals for the 20-year CIP is provided below. Individual projects can be found in the *Phased Development Plan* chapter and are depicted on the graphic below.

Phase	Local Funding	State/Federal Funding	Total Cost
Phase I Total	$3,524,337	$3,681,533	$7,205,870
Phase II Total	$2,396,250	$7,407,000	$9,803,250
Phase III Total	$4,088,550	$6,565,950	$10,654,500
Total All Phases	**$10,009,137**	**$17,654,483**	**$27,663,620**



The Revenues, Expenses, and Impacts

While each airport in the national airspace system strives to be as self-sustaining as possible, a lack of revenue opportunity makes it difficult at times. At most general aviation airports, a majority of revenue income is derived from fuel sales and hangar/land lease rentals. During this Master Plan process, an evaluation was conducted in an effort to estimate potential future income with and without leasing opportunities available from Mooney Airplane Corporation facilities. A breakout of the potential revenues and assumed expenses is provided below.

The more significant an airport is in a community, the more direct economic impact it has on a community and the region, as a whole. Based on econometric calculations, the Airport's current direct economic impact of $20 million per year and employment of 124 individuals is expected to increase to approximately $36 million and 224 individuals by the end of the 20-year planning period.

This Master Plan balances needed Airport improvements with the goals of the Airport and the community and arrived at a consensus on how to best meet future demand. The participation process required much coordination, technical expertise and feedback, along with airport sponsor, airport management, and airport board participation. The culmination of this process is a workable, usable, and focused plan that can be executed realistically, providing for the future needs of the Airport.

	2012	2015	2020	2025	2030
Operating Revenue	$301,321	$334,620	$499,801	$710,121	$817,503
Non-Operating Revenue	$466,973	$415,139	$496,208	$552,387	$479,719
Total Revenue	$768,294	$749,758	$966,009	$1,262,508	$1,297,222
Operating Expenses	$570,274	$621,891	$719,432	$833,968	$968,837
Non-Operating Expenses	$198,020	$127,867	$276,577	$428,540	$328,385
Total Expenses	$768,294	$749,758	$966,009	$1,262,508	$1,297,222
Net Revenues	$0	$0	$0	$0	$0

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Chapter 1: Inventory of Existing Conditions

The Inventory provides baseline information for the Kerrville/Kerr County Airport as a snapshot in time which forms the foundation for the rest of the report.

Introduction

An Airport Master Plan was initiated by the Kerrville/Kerr County Airport Board to 1) evaluate existing airport conditions, 2) assess the impacts of future aviation demand, and 3) provide the Kerrville/Kerr County Airport – Louis Schreiner Field with information and direction in the continued operation of, improvements to, and planning for the airport.

The purpose of the Master Plan is to provide a thorough discovery process that will identify both the short-term and long-term needs of the airport as they relate to development, maintenance, and administration. This involves the preparation of study elements that aid in the identification of detailed project schedules and costs. The Airport Master Plan is evidence that the Airport Sponsors and Airport Board recognize the importance of aviation in the overall concept of community and transportation planning. In August 2011, the Airport Board entered into a consultant's agreement with Garver, LLC, with the Texas Department of Transportation, Aviation Division (TxDOT) acting as agent, for the preparation of an Airport Master Plan for the Kerrville/Kerr County Airport – Louis Schreiner Field. Overall, the Airport Master Plan is tailored to be responsive to local issues, while at the same time, remain inclusive of broader regional issues. The study is intended to serve as a medium for assembling community opinion, spirit and concurrence. When adopted by the City of Kerrville and Kerr County, and accepted by the various local, regional, state, and federal agencies, the plan represents the short and long-term intentions regarding the location and extent of airport facility improvements at the airport.

As the initial step in the airport planning program, the inventory is a systematic data collection process that provides an understanding of past and present aviation factors associated with the Kerrville/Kerr County Airport - Louis Schreiner Field. A comprehensive inventory, including the following major inventory tasks, is used to form the basis for airport recommendations throughout the Airport Master Plan.

- An on-site inspection (conducted in August 2010) and inventory of airport facilities, equipment, and services to assess existing physical conditions.
- Discussions with county/city officials, the local Economic Development members, airport manager/Fixed Base Operator (FBO), and airport tenants regarding recent airport trends, operations, and services.
- The collection of airport activity data, project records, and aeronautical background information; a review of historical airport information, previous airport layout plans, maps, charts, and photographs of airport facilities; and a record search and review of local airport-related ordinances, policies, operating standards, and lease agreements.

- ✈ The collection of regional, county, city and airport development information to understand regional economic conditions and to determine the surrounding airport service area characteristics.
- ✈ Review of current and planned on and off-airport land use development and property information, including surrounding land use patterns, existing and proposed transportation developments, infrastructure, and utilities.
- ✈ The collection of regional climatic information, including predominant winds, cloud and visibility conditions, and precipitation levels.

Airport History

The original airport, which is now occupied by an industrial park, was purchased by Louis A. Schreiner in 1939 and donated to the City of Kerrville. The airport was named Louis Schreiner Field after its donor, and it was developed on approximately 111 acres.

In 1942, the airport property was traded for approximately 145 acres, and the airport was moved to its present site – 6 miles east of downtown Kerrville adjacent to Texas State Highway 27. Louis A. Schreiner, Hal Peterson, and Charlie Peterson donated money for improvements to the new airport. Throughout WWII, the airport remained in civilian control but served as a base for military flight training. From 1945 to 1949, the FBO maintained a Civil Aeronautics Administration-approved flight training school and provided a full range of services, including aircraft repair and maintenance along with pilot flight training and charter flights.

In 1948, the City of Kerrville acquired a surplus hangar from Laughlin Air Force Base when the base was temporarily closed. In 1953, Mooney Airplane Company moved from Wichita, Kansas to Kerrville into the military surplus hangar on Louis Schreiner Field. In 1957, Mooney Airplane Company expanded to include the Kerrville Flying Service tract, and Kerrville Aviation and Dugosh were established across the field in the current ramp area.

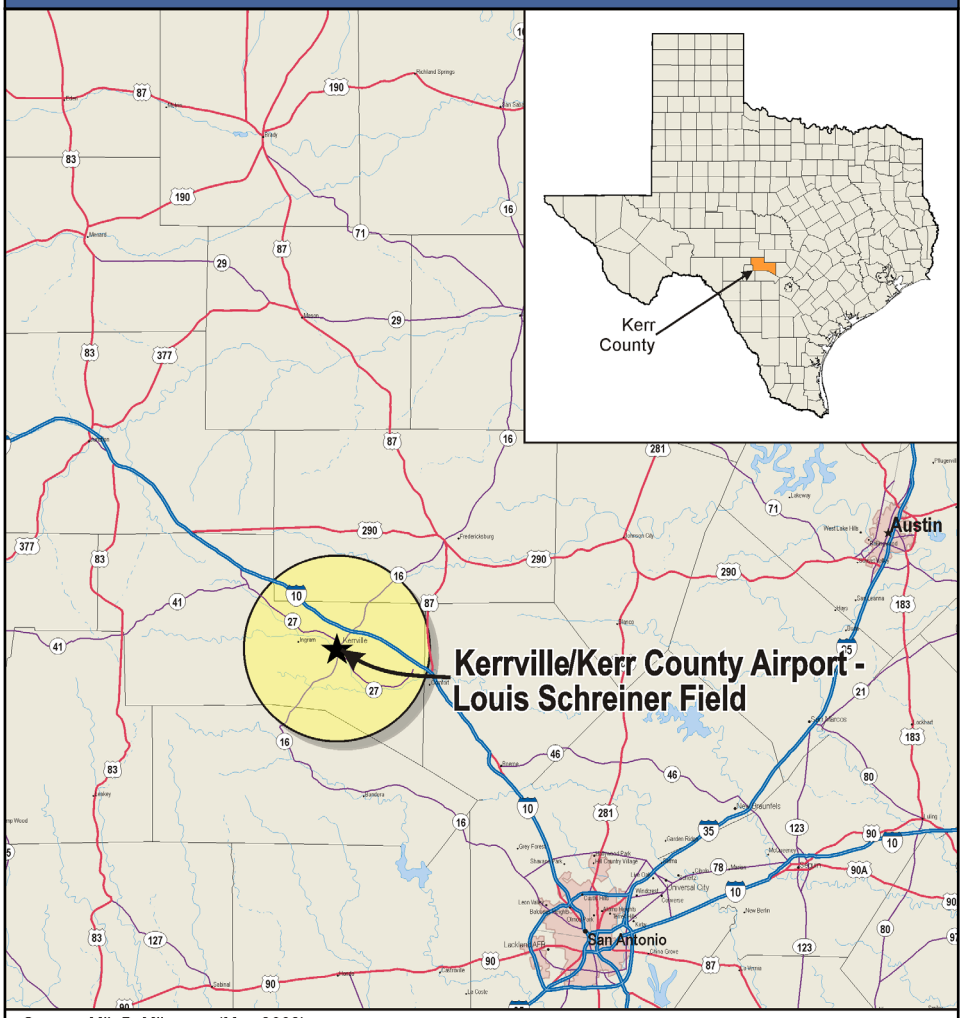
Kerr County matched funding for improvements at the airport from the beginning, and in 1952, the City of Kerrville deeded one-half interest in the airport to Kerr County. In 1978, the City of Kerrville annexed 64 acres along Highway 27 and 459 acres of airport property into the city limits, and the next 10 years saw extensive development of the east side of the airport. The FBO and other tenant activities developed around the ramp area as it exists today, and the airport west of the secondary runway became completely occupied by Mooney Airplane Company.

Airport Characteristics

Airport Location and Access

Kerrville/Kerr County Airport - Louis Schreiner Field, 54 miles northwest of San Antonio, Texas and 5 miles southeast of the Kerrville Central Business District, is located within the Hill Country and Edwards Plateau ecological-region of central Texas. Classified as a general aviation airport within the Federal Aviation Administration's (FAA) *National Plan of Integrated Airport Systems* (NPIAS) and a

Figure 1-1
Airport Vicinity and Location Map
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: MileByMile.com (May 2008)

05' 07.700" W. The current magnetic declination at the airport is 5° 24" E (NOAA National Geophysical Data Center, 09/10) with an estimated variation change of 0° 7' W per year.

Airport Project History

Table 1-1, *Historic Airport Project Funding,* shows the airport's development history that involved funding assistance from federal or state sources. According to records, since 1968, the airport has received $8,357,069 from the FAA and $2,105,868 from the state (TXDOT, Aviation Division) for various improvements. In Texas, a local sponsor's share of grant match from either FAA or state funding is 10 percent. Based on this, the local investment at the airport since 1968 is $1,230,585.

Business Corporate airport within the *Texas Airport System Plan,* contains approximately 528 acres, experiences an estimated 60,000 annual operations, and houses more than 160 aircraft of various sizes and complexities. The airport not only serves the City of Kerrville and Kerr County, but also is capable of providing relief to San Antonio International Airport based on its close proximity and lack of operational constraints and congestion.

Direct access to the airport and terminal area is provided via Airport Loop from U.S. Highway 27, which can be accessed from Interstate 10 and County Road 534. The published airport elevation is 1,616 feet above mean sea level (MSL), with airfield coordinates of 29° 58' 36.000" N and 99°

Airport Role

Kerrville/Kerr County Airport - Louis Schreiner Field is jointly owned and operated by Kerr County and the City of Kerrville. Pursuant to Chapter 22 of the Texas Transportation Code, a new one-year **Joint Action Agreement** was entered into between these entities on 29 September 2011, which will terminate 30 September 2012. However, prior to termination, this agreement will automatically renew for up to four additional one-year terms, unless terminated by either party. This agreement continues the previously created Joint Airport Board comprised of five members with original members appointed by Kerr County (2 members), the City of Kerrville (2 members), and one appointed by the four appointees. As board member terms expire new members are appointed by the other current

Table 1-1 Historic Airport Project Funding Kerrville/Kerr County Airport - Louis Schreiner Field				
Year	**Local Total**	**State Total**	**Federal Total**	**Project Description**
1960's	$0	$20,000	$52,990	Taxiway construction
1970's	$0	$40,000	$483,996	Land; TVOR; fencing, RW 12/30 MIRL / VASI-4, Airport Master Plan, Localizer and Outer Marker; Relocate NDB, Apron/Taxiways
1980's	$0	$0	$1,330,452	Land; Apron; Fencing, RW 12/30 Rehab, RW 12/30 and Taxiway Extensions; Entrance Road; Perimeter Fence; TW Guidance Signs; VASI-4
1990's	$179,677	$976,272	$1,439,045	Land for Approaches, Extend RW 12/30 Parallel TW and MIRLs, RW 12/30 Rehab, Windcones, Guidance Signs, Radio Controlled MIRLs, Update AMP, Hangar Access T-lane and Ramp
2001	$35,000	$315,000	$0	Install MIRL's / PAPIs RW 3/21, displace threshold RW 3 455' and RW 12 700'; Construct hangar access TW and ramp to new hangars
2002	$1,625	$4,875	$0	Install NADIN interface
2002	$22,500	$22,500	$900,000	Engineering RW overlay and apron expansion
2002	$0	$0	$448,473	Install fencing
2003	$29,999	$29,999	$0	Hangar Access Paving, Drainage Improvements, Herbicide
2003	$56,962	$0	$512,659	Land for RPZ RW 12 (21 acres)
2004	$596,142	$373,534	$0	Terminal building reimbursement
2004	$30,000	$30,000	$0	Drainage, Grading, and Obstacle Removal; Fencing; Herbicide
2005	$41,533	$0	$441,856	Engineering Parallel TW; entrance road relocation; TW/RW transitional areas
2007	$27,456	$27,456	$0	Re-mark pavements; Seal Coat; Hangar Access T-lane; Landscaping/Sprinklers
2007	$7,018	$0	$63,162	Airport Business Plan
2008	$25,167	$0	$266,503	Land for Parallel TW; Entry Road Relocation; and House Relocation
2009	$32,392	$32,932	$0	AWOS maintenance; RW/TW Crack Seal; Replace Apron Concrete; REILs
2010	$19,950	$0	$179,550	Airport Master Plan update
2010	$0	$150,000	$0	Update Airport Layout Plan, Survey, and Obstruction Analysis for FAA e-ALP
2010	$0	$0	$3,448,463*	Relocate fencing; install/relocate signage; Relocate parallel TW to RW 12-30 (3,500' x 50')
2010	$105,197	$0	$2,088,383	Relocate west entrance road (2,800' x 24'); Install erosion/sedimentation controls
2010	$1,650	$31,650	$0	RAMP funding - AWOS maintenance; AWOS repairs/parts replacement; airfield lighting improvements/maintenance
2010	$1,650	$51,650	$0	RAMP funding – General airport maintenance projects
Total Investment	**$1,230,585**	**$2,105,868**	**$8,357,069**	

Source: TXDOT, Aviation Division, TADS Database; Federal Total – Federal Aviation Administration; State Total – TXDOT, Aviation Division

* Funded as part of the American Recovery and Reinvestment Act (ARRA).

board members and ratified by the City and County. Each board member is appointed for a two-year term with three appointments terminating together in one year and the remaining two expiring the following year. The board is responsible for any and all airport policy considerations, as well as operating and complying with all mandated federal, state, and local regulations as they relate to the airport. Additionally, the board has the authority to hire an airport manager and other employees to ensure the day-to-day operation and management of the airport. A copy of the inter-local agreement can be found in an appendix.

According to the 2009-2013 NPIAS, the Kerrville/Kerr County Airport - Louis Schreiner Field is classified as a General Aviation (GA) airport, while the TXDOT, Aviation Division classifies the airport as a Business Corporate airport. According to TXDOT's Policies and Standards, June 2007, the minimum requirements for Business Corporate Airports are:

- Applicable Design Standard
  - B-II, C-II, C-III, C-IV, D-II, D-III, D-IV
- Minimum Runway
  - Length: Designed for 75 percent of large airplanes less than 60,000 pounds at 60 percent useful load
  - Width: 75 Feet
  - Strength: 30,000 pound single-wheel loading
- Minimum Taxiway
  - Full-length parallel
- Minimum Apron
  - Area needed for itinerant and local parking based on AC 150/5300-13 Airport Design – Appendix 5 – 360 square yards for each itinerant aircraft and 300 square yards for each based aircraft
- Minimum Approach
  - GPS LPV, ¾-mile
- Minimum Lighting
  - MIRL and taxiway centerline stripping or reflectors and turnout lights from the active runway
- Minimum Visual Approach Aids
  - Lighted wind indicator, segmented circle, rotating beacon, PAPI, Runway End Indicator Lights (REILS – in extensive light polluted areas only)
- Minimum Facilities
  - AWOS, fuel, illuminated airfield signage, and terminal building

Based on the application of airport design criteria from FAA Advisory Circular (AC) 150/5300-13, Change 15, *Airport Design*, and a review of the latest approved ALD, the existing Airport Reference Code (ARC) code is C-II. This is consistent with the types of aircraft that currently operate at the airfield.

The ARC is a coding system to help identify and determine the appropriate design criteria for each individual airport. This ARC correlates the design and layout of an airport to the operational and physical characteristics of the "critical design aircraft," which directly influences pertinent safety criteria such as runway length, runway width, runway/taxiway separation distances, building setbacks, size of required safety and object free areas, etc. The critical design aircraft is based on

the largest type aircraft expected to operate at an airport on a regular basis, which is defined as a minimum of 500 operations (landings or takeoffs) per year; however, TXDOT defines critical aircraft based on a minimum of 250 operations per year.

The ARC has two components. The first component, depicted by a letter (e.g., A, B, C, D, or E), is the aircraft approach category and relates to aircraft approach speed based on operational characteristics. The second component, depicted by a Roman numeral (e.g., I, II, III, IV, V, or VI), is the airplane design group and relates to aircraft wingspan and/or tail height. For example, a Beechcraft King Air 200 with an approach speed of 103 knots and wingspan of 54.5 feet would have an ARC of B-II, while a larger corporate jet such as the Gulfstream IV (G-IV) exhibiting an approach speed of 145 knots and wingspan of 77.8 feet would have an ARC of D-II. **Table 1-2,** *Airport Reference Code,* illustrates the components comprising the ARC.

Airfield Facilities Inventory

As shown in **Figure 1-2,** *Existing Airport Layout,* Kerrville/Kerr County Airport - Louis Schreiner Field is currently operating as a dual runway system with supporting taxiways that provide access to the terminal area and other airfield structures.

Table 1-2
Airport Reference Code
Kerrville/Kerr County Airport - Louis Schreiner Field

Aircraft Approach Category	
Category	**Speed**
A	< 91 Knots
B	91 - < 121 Knots
C	121 - <141 Knots
D	141 - < 166 Knots
E	> 166 Knots

Airplane Design Group[1]		
Group	**Tail Height (ft)**	**Wingspan (ft)**
I	< 20	< 49
II	20 - <30	49 - < 79
III	30 - <45	79 - <118
IV	45 - <60	118 - <171
V	60 - <66	171 - <214
VI	66 - <80	214 - <262

Source: FAA Advisory Circular 150/5300-13 Change 15, *Airport Design.*
[1] Where an airplane is in two categories, the most demanding category should be used.

Airside Facilities

Runways

The primary runway at the airport, Runway 12/30, is 6,000 feet in length, 100 feet in width, with a 690-foot displaced threshold on the Runway 12 end. All aircraft types utilize this runway, which is constructed of asphalt and is in good condition. According to the FAA 5010 Airport Master Record, 2010, the main landing gear gross weight bearing capacity for the runway is listed at 25,000 pounds for single-wheel aircraft, and according to TXDOT, Aviation Division, 75,000 pounds for dual-wheel aircraft due to a recent runway overlay and strengthening project. The runway is equipped with a Medium Intensity Runway Light (MIRL) system and a four-light Precision Approach Path Indicator (PAPI) located on the left-hand side of each runway end. Both runway ends are marked as non-precision, and Runway 30 is served by a localizer. Approximately 90 percent of the airport's operations occur on this runway.

The secondary runway at the airport, Runway 03/21, is a visual runway that is 3,592 feet in length and 60 feet in width accommodating single- and multi-engine type aircraft. It is constructed of asphalt and is in good condition. The main landing gear gross weight bearing capacity for the runway is 15,000 pounds for single-wheel aircraft. The runway is equipped with Medium Intensity Runway Lights (MIRL) and both runway ends are equipped with a two-light Precision Approach Path Indicator (PAPI) located on the left-hand side of the runway. There are no markings other than runway end numbers. The remaining 10 percent of the airport's operations occur on this runway.

Taxiways

Additional airside facilities at the airport include full-length parallel taxiways associated with each runway. The 40-foot-wide asphalt parallel taxiway affiliated with the primary runway is currently being reconstructed to 50 feet wide and relocated 400 feet northeast of Runway 12/30 to meet FAA standards. With the increase in complex type aircraft operating at the airport, the existing separation of 250 feet was less than that recommended by FAA design standards. When complete, the new pavement will

support up to 75,000 pound dual wheel aircraft and have four connectors providing ingress and egress to Runway 12/30 and other areas on the field. Centerline reflectors will provide guidance during times of darkness; however, it is recommended that Medium Intensity Taxiway Lights (MITL) be programmed at some point in the future. This taxiway also intersects the parallel taxiway associated with Runway 3/21, which provides access to the Runway 3 end.

The parallel taxiway for Runway 3/21 is 40 feet wide, offset 200 feet east of the runway centerline, and constructed of asphalt. This taxiway has three connectors, centerline reflectors, and provides access to the north side of the aircraft parking apron. In addition, the sole mid-field connector provides access to the east side of the airport and the runway with Mooney Airplane Company. Rating of this pavement coincides with that of Runway 3/21 – 12,500 pounds with single-wheel gear configuration.

The third taxiway, which runs in a north-south fashion, is 40 feet in width and provides access from each full-length parallel to the terminal apron area and aircraft storage facilities. This asphalt taxiway also has four connecting taxiways. Hold-line markings are or will be appropriately placed along all taxiways and their connectors. It is recommended that those taxiways absent of lighting be programmed at some point in the future and be installed with new LED low power-medium intensity units. Additionally, due to the lack of taxiway designation, it is recommended that the airport undertake a taxiway naming system to eliminate confusion and provide easier navigation during taxi. **Figure 1-2,** *Existing Airport Layouts* on page 1.11 reflects a proposed designation for each taxiway.

Aprons

The airport currently has one large parking apron for based and/or itinerant aircraft that provides approximately 304,000 square feet (7 acres) of parking and maneuvering space. This concrete apron is located directly adjacent to the general aviation terminal building and the Kerrville Aviation FBO corporate storage hangars, and it is in good condition. The apron currently accommodates approximately 33 designated tie-down spaces; however, due to the apron size, overflow areas for additional parking are easily achievable.

Landside Facilities

General Aviation Terminal

The airport's general aviation terminal, constructed in 2007, consists of approximately 5,000 square feet of space and typifies the geographic surroundings of the Hill Country. The terminal provides a lounge area, restrooms, Airport Manager's office, flight

has manufactured four models of single-engine aircraft in its facilities located on the west side of Runway 3/21. Access to the Mooney facility is provided by Al Mooney Road, via State Highway 27. Employment has fluctuated with the economy and correlates to the volatility of the aviation industry. Currently, there are approximately 50 employees who produce parts and provide services for the various Mooney aircraft still in operation. An in-depth evaluation and assessment of the Mooney facilities will be conducted as part of this Master Plan and will be discussed in more detail in the land use section of this chapter. Additionally, a copy of the report and recommendations will be provided in an appendix.

planning/meeting rooms, and FBO offices. This facility is well maintained and offers auto parking, which needs to be expanded.

General Aviation Hangars

There are several hangars of various types and sizes located on the field. **Figure 1-3,** *General Aviation Facilities* on page 1.15 reflects the location and characteristics of each hangar. All hangars appear to be in good condition. They are well situated and consolidated along the flight line or taxiways on the east side of both runways, providing a seamless transition from storage to operation and vice-versa. Additionally, all hangars are fully occupied, and there are approximately 32 individuals on a waiting list who desire hangar storage opportunities for their aircraft.

Mooney Airplane Company

As previously mentioned, Mooney Airplane Company has been at the airport since moving from Wichita, Kansas in 1953. Over the years, Mooney

Fixed Base Operator (FBO)

The current FBO on the field is Kerrville Aviation. Kerrville Aviation provides various services for both based and itinerant aircraft, which ranges from maintenance to avionics to catering to fueling to local transportation needs. Offices for Kerrville Aviation are located in Hangar 1 with customer service and other facilities within the general aviation terminal building while the four aircraft storage and maintenance hangars are located along the apron and north and south of the terminal. As part of the scope of this project, a review of the lease agreement between the FBO and airport will be conducted. Recommendations to this agreement will be provided in the Finance/Management Section of this report

Fuel Facility

The fuel tanks located at the airport include two above-ground storage facilities located north of the terminating point of Airport Loop and one above-ground storage tank on the south edge of the aircraft parking apron. The tanks include a 12,000-gallon Jet-A storage unit, a 10,000-gallon AVGAS/100LL storage unit, and a 5,000-gallon AVGAS/100LL self-serve unit. All tanks are owned by the Airport and leased to the FBO – Kerrville Aviation – with the airport receiving a $.09 fuel flowage fee for each gallon the FBO sells. In addition, the FBO utilizes two mobile fuel units for dispensing around the airport. These mobile units consist of one 750-gallon AVGAS/100LL truck and one 3,000-gallon Jet-A truck.

Figure 1-2
Existing Airport Layout
Kerrville/Kerr County Airport - Louis Schreiner Field

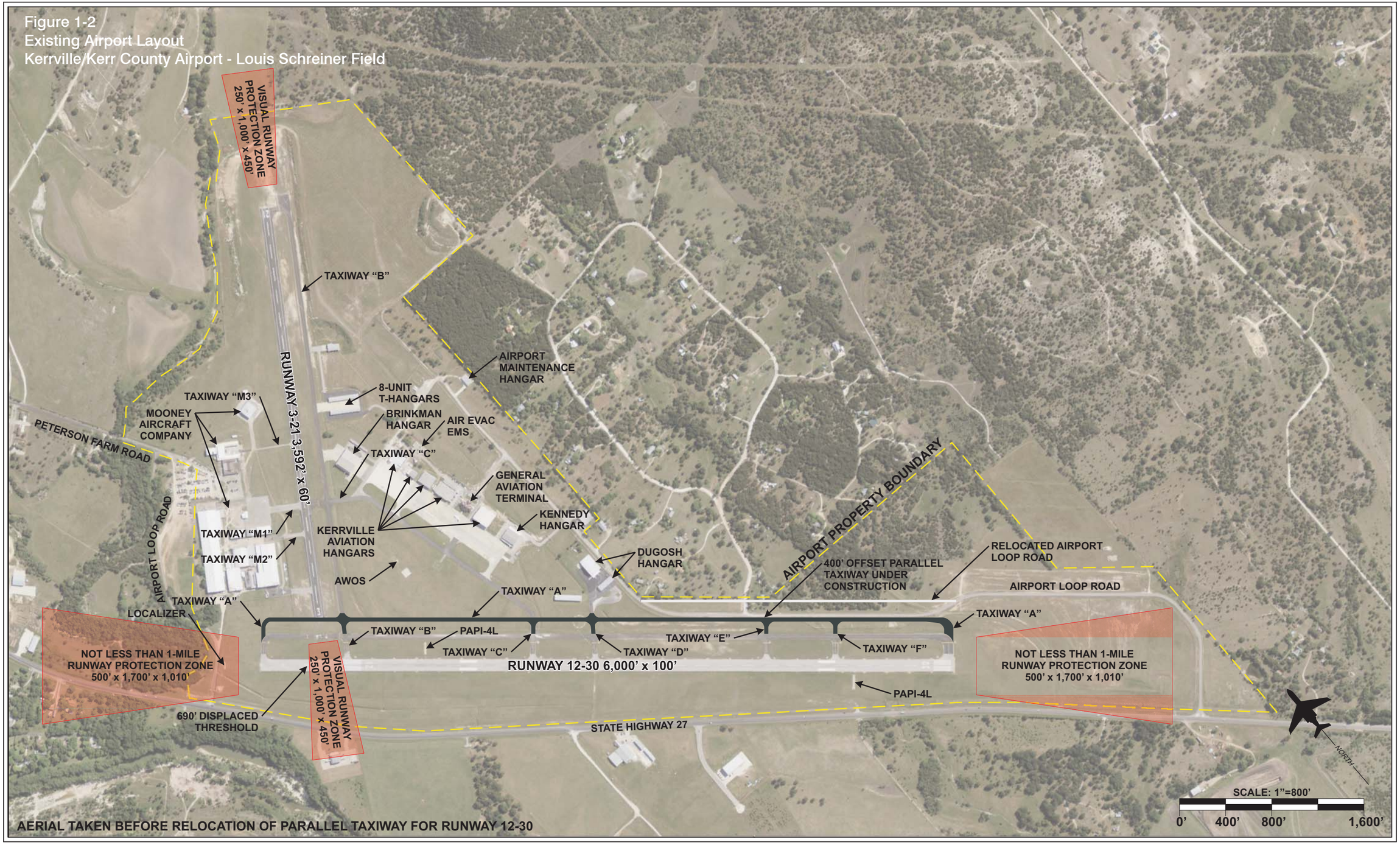


Figure 1-3
General Aviation Facilities
Kerrville/Kerr County Airport - Louis Schreiner Field

Hangar	Size	Description	Owner	Condition
A	110' X 60'	Box Hangar	Drane	Good
B	46' X 140'	8-unit T-hangar	City/County/Airport	Good
C	46' X 140'	8-unit T-hangar	City/County/Airport	Good
D	140' X 160'	Corporate Hangar	Commercial Aviation/Brinkman	Good
E	125' X 125'	Corporate Hangar	Apache Springs/Friedkin	Good
F	35' X 50'	Box Hangar	AirEvac EMS	Good
G	60' x 60'	Box Hangar	Kerrville Aviation	Good
H	120' x 100'	Corporate Hangar	Kerrville Aviation	Good
I	110' x 160'	Corporate Hangar	Kerrville Aviation	Good
J	71' x 70'	Terminal	City/County/Airport	Good
K	150' x 130'	Corporate Hangar	Kerrville Aviation	Good
L	130' x 130'	Corporate Hangar	Joe Kennedy	Good
M	100' x 160'	Corporate Hangar	Dugosh	Good
N	46' x 140'	6-unit T-hangar	Dugosh	Good
O	200' x 390'	Manufacturing Hangar	Mooney Aircraft	Good
P	75' x 140'	Manufacturing Hangar	Mooney Aircraft	Good
Q	110' x 200'	Manufacturing Hangar	Mooney Aircraft	Good
R	150' x 750'	Manufacturing Hangar	Mooney Aircraft	Good
S	75' x 130'	Manufacturing Hangar	Mooney Aircraft	Good
T	75' x 80'	Manufacturing Hangar	Mooney Aircraft	Good
U	75' x 130'	Manufacturing Hangar	Mooney Aircraft	Good
V	140' x 140'	Administration Building	Mooney Aircraft	Good
W	150' x 200'	Administration Building	Mooney Aircraft	Good
X	100' x 100'	Manufacturing Hangar	Mooney Aircraft	Good

The following table, **Table 1-3,** provides a summary of fuel sales conducted at the airport since 2005. Sales have fluctuated over the years from a high of 452,150 gallons in 2007 to a low of 354,626 gallons in 2009, with the five-year average equating to 402,162 gallons.

Table 1-3
Airport Fuel Sales, 2005 - June 2010
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	AVGAS (gallons)	Jet A (gallons)	Total (gallons)
2005	122,785	268,300	391,085
2006	149,744	245,104	394,848
2007	133,376	318,774	452,150
2008	130,132	287,969	418,101
2009	99,170	255,456	354,626
2010[1]	36,970	120,846	157,816

Source: Kerrville Airport Administration Records
[1] 2010 is reflective for the months January 2010-June 2010.

Segmented Circle and Beacon

The lighted wind cone and segmented circle, which conveys wind direction and traffic patterns, is located in the infield between the two runways and southwest of the apron.

The airport beacon, a tower with alternating green and white lights indicating an airports location, is located east of the terminal building, adjacent to the airport entrance road, and above the automobile parking lot.

Aircraft Rescue and Fire Fighting (ARFF)

Because the airport is not an FAA Part 139 certificated airport, Kerrville/Kerr County Airport - Louis Schreiner Field does not have facilities associated with fire and rescue located on the premises. However, in the event of an emergency, the City of Kerrville Fire Department would provide services.

Airfield and Terminal Area Security —

Kerrville/Kerr County Airport - Louis Schreiner Field is typical of many general aviation airports in a rural or semi-rural setting. These airports have primarily served the local community with most of the based aircraft as small single-engine piston aircraft and security was not of great concern. However, with increasing numbers of more complex aircraft entering the national fleet and the potential for these aircraft to use the field, as well as a general concern due to the residual effects of September 11, 2001, comes a greater need for stronger security both on the airside/operational part of the airport as well as in the terminal area. Security for these two areas is tied closely together and revolves primarily around access and employee/airport patron vigilance.

At Kerrville, the exterior of the field is secured by a 10-foot-high wildlife fence that includes three-strand barbed wire on top in addition to secured access gates that require entry with an electronic gate code. With the potential for encroachment of residential development or other development adjacent to the airport, greater security measures need to be considered. At a minimum, greater vigilance needs to be emphasized to the tenants and maintained so

Controlling access at general aviation airports is a significant challenge because few are attended full-time. Additionally, the broad array of operations and activity at GA airports present their own unique challenges. Many aircraft owners who lease hangars have taken appropriate steps to lock their hangars and keep their aircraft locked with aircraft keys located apart from their aircraft.

that unauthorized access to the airfield is not gained due to the lack of adequate fencing and gates. A variety of options exist for mitigating security risks at general aviation airports. More often than not, the overriding factors to consider are costs and how the security improvements will impact the users. Costs of security improvements implementation are often the impeding factor; however, two areas of consideration to improve security without undue expense while providing the most effective deterrents include surveillance/monitoring and access controls.

Many airports similar to Kerrville know their regular users: the local pilots, aircraft owners, and businesses. Most general aviation airports have implemented some form of the Aircraft Owners and Pilots Association's *"Airport Watch"* Program. This program has produced a heightened awareness by local pilots and aircraft owners, empowering them with confidence to report oddities at their respective airports. Continued emphasis on this type of surveillance and monitoring is highly recommended. Periodic tenant meetings will foster their knowledge of one another and promote a higher degree of security and safety.

Environmental Overview

An analysis and inventory of the environment on and surrounding an airport identifies resources that may need to be addressed prior to implementation of any future proposed airport planning recommendations. This process provides notification to the airport sponsor that some coordination and correspondence with various state and federal agencies may be required before any construction takes place.

Soils

Kerr County is in the south-central part of Texas on the southern edge of the Edwards Plateau. It has a total area of 708,506 acres, or about 1,107 square miles. The landscape consists of gently undulating, clayey and stony soils in the western part of the county; gently sloping, loamy soils on hilltops; steep side slopes; narrow valleys in the central to eastern part; and nearly level to gently sloping, loamy and clayey soils along the Guadalupe River and other major streams. The county is drained by numerous streams, the largest of which are the Guadalupe River, Cypress Creek, Johnson Creek, Town Creek, Turtle Creek, and Verde Creek. Many of these water areas are perennial spring-fed streams.

About 68,780 acres, or nearly 10 percent, of the soils in Kerr County meet the requirements for prime farmland soils. These areas are scattered throughout the county. Approximately 21,000 acres of these prime farmland soils are used for cultivated crops. Crops grown on these soils, mainly forage sorghum, wheat, and oats, account for a moderate amount of the county's total agricultural income each year.

Historical, Architectural, Archeological, and Cultural Resources

The *National Historic Preservation Act of 1966* requires that an initial review be made to determine if any properties in or eligible for inclusion in the National Register of Historic Places are within the area of a proposed action's potential environmental impact. The *Archaeological and Historic Preservation Act of 1974* provides for the survey, recovery, and preservation of significant scientific, pre-historic, historical, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally funded, or federally licensed project. It doesn't appear the airport exhibits any of the features; however, a thorough investigation and coordination will need to be conducted through both the state and federal cultural resources offices before any construction occurs on the airfield.

Fish, Wildlife, and Plants

The *Endangered Species Act* requires each federal agency to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species. As provided by the Texas Parks and Wildlife Department, several species are listed for Kerr County. As defined by the U.S. Fish and Wildlife, Endangered Species is any species of wildlife whose continued existence as a viable component of the state's wild fauna is determined to be in jeopardy, and a Threatened Species is any species of wildlife that appears likely, within the foreseeable future, to become an endangered species. **Table 1-4,** *Kerr County Threatened and Endangered Species,* on the next page lists the threatened and endangered species for Kerr County on both a federal and state status.

It is uncertain if these species reside near or on airport property; therefore coordination with both the U.S. Fish and Wildlife Service and Texas Parks and Wildlife will be required before any future construction is commenced.

Table 1-4 Kerr County Threatened and Endangered Species Kerrville/Kerr County Airport - Louis Schreiner Field			
Common Name	**Genus/Species**	**Federal Status**	**State Status**
Amphibians			
Cascade Caverns salamander	Eurycea latitans complex		T
Birds			
American Peregrine Falcon	Falco peregrines anatum	DL	T
Arctic Peregrine Falcon	Falco peregrines tundrius	DL	
Bald Eagle	Haliaeetus leucocephalus	DL	T
Black-capped Vireo	Vireo atricapilla	LE	E
Golden-cheeked Warbler	Dendroica chrysoparia	LE	E
Interior Least Tern	Sterna antillarum athalassos	LE	E
Mountain Plover	Charadrius montanus	PT	
Peregrine Falcon	Falco peregrines	DL	T
Whooping Crane	Grus Americana	LE	E
Zone-tailed Hawk	Buteo albonotatus		T
Mammals			
Black Bear	Ursus americanus		T
Gray Wolf	Canis lupus	LE	E
Red Wolf	Canis rufus	LE	E
White-nosed coati	Nasua narica		T
Mollusks			
False spike mussel	Quadrula michelli		T
Golden orb	Quadrula aurea		T
Texas fatmucket	Lampsilis bracteata		T
Texas pimpleback	Quadrula petrina		T
Cagle's map turtle	Graptemys caglei		T
Texas horned lizard	Phrynosoma cornutum		T
Plants			
Tobusch fishhook cactus	Sclerocactus brevihamatus	LE	E

Source: Texas Parks and Wildlife Department
T = State Listed Threatened
E = State Listed Endangered.
DL = Federally Delisted
LE = Federally Listed Endangered/Threatened

Airspace System and Aids to Navigation (NAVAIDs)

All flights conducted within the national airspace system, whether under Visual Flight Rules (VFR) or Instrument Flight Rules (IFR), do so based on regulations mandated by the FAA. Based on these rules, each airport—whether private or public—has a specific role that it plays as part of this system.

Air Traffic Service Areas and Aviation Communications

FAA air traffic controllers, stationed at *En-Route Control Centers or Air Route Traffic Control Centers* (ARTCC), provide for the safe movement of aircraft operating primarily under IFR conditions within a defined geographic jurisdiction. There are currently 20 geographic ARTCC's established within the continental United States, each one responsible for a specific geographic region or boundary delineation. Kerrville/Kerr County Airport - Louis Schreiner Field is located within the Houston ARTCC, which entails airspace in portions of Alabama, Louisiana, Mississippi, Texas, and the Gulf of Mexico.

Automated Surface Observation System (ASOS)/Automated Weather Observation System (AWOS)

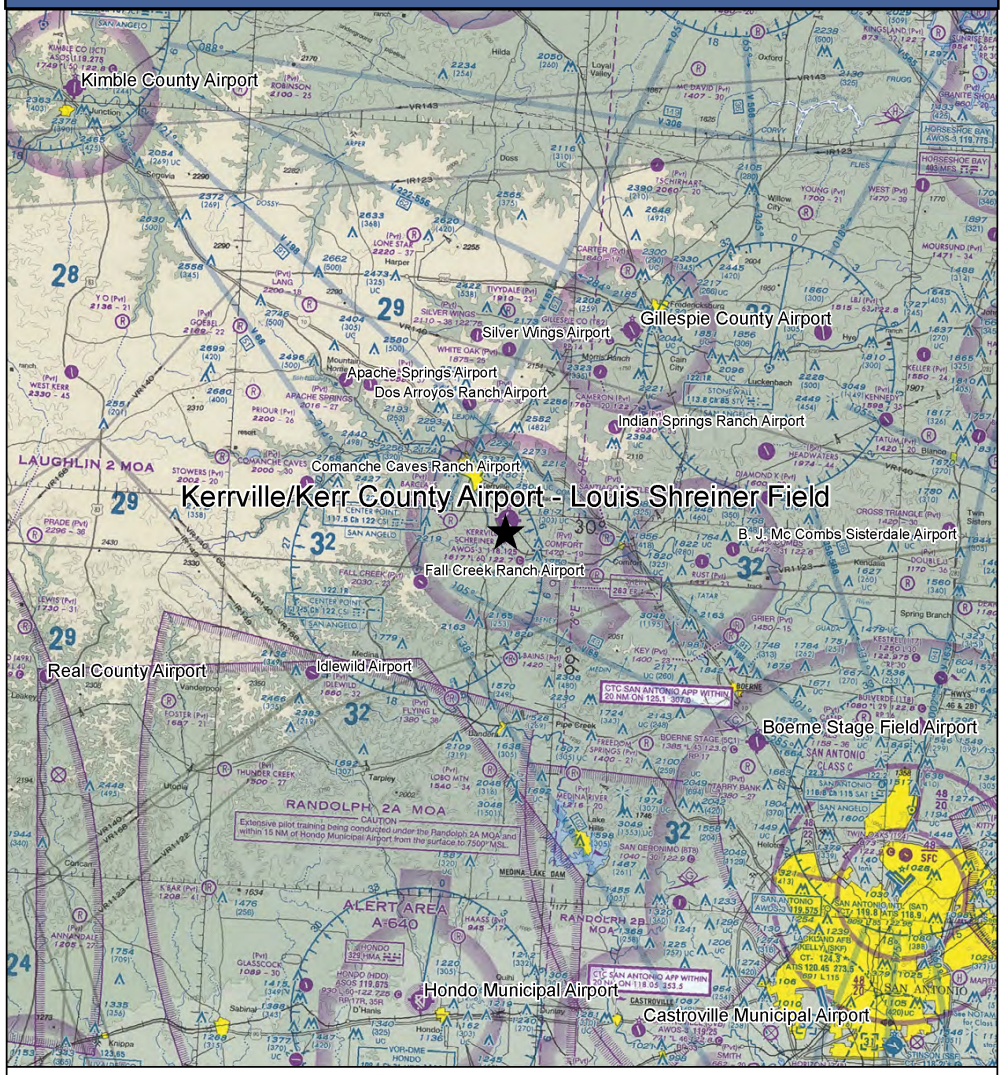
An ASOS/AWOS provides weather observations that include air and dew point temperature, wind, air pressure, visibility, sky conditions, and precipitation. This data is captured minute by minute, 24 hours a day, to help pilots and flight dispatchers prepare and monitor weather forecasts, plan flight routes, and provide necessary information for takeoffs and landings. This information is received and transmitted via discrete VHF radio frequencies through the voice portion of a local NAVAID (118.125) or local telephone line. The Kerrville/Kerr County Airport - Louis Schreiner Field AWOS-3 is located mid-field on the east of the runways and west of the aircraft parking apron.

A typical ASOS/AWOS provides information to a national network referred to as the National Airspace Data Interchange Network (NADIN) for use by pilots and provides historical records. Currently, the AWOS-3 at Kerrville/Kerr County Airport - Louis Schreiner Field is set up to send observations to the national database.

Airspace

As seen in **Figure 1-4,** *Airspace/NAVAIDs Summary,* located on the next page, the local airspace immediately surrounding Kerrville/Kerr County Airport - Louis Schreiner Field is designated as

Figure 1-4
Airspace/NAVAIDs Summary
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: San Antonio Sectional November 2011

Special-Use airspace is that area specifically designated by ATC to segregate flight activity related to military and national security needs from other airspace users. Currently, there are six different kinds of special-use airspace that include: prohibited areas, restricted areas, military operations areas (MOA), alert areas, warning areas, and controlled firing areas. However, the limiting airspace around the Kerrville/ Kerr County Airport - Louis Schreiner Field is the MOA and Alert Area Airspace associated with the Randolph and Lackland Air Force Bases located in San Antonio, Texas.

Class E airspace. Class E airspace generally exists in the absence of Class A, B, C, and D airspace extending upward from either 700 feet or 1,200 feet above the surface to 18,000 feet MSL within 5 miles of airports without control towers and is intended to provide a transition area for instrument approaches. VFR traffic is allowable without radio communications; however, IFR flights and aircraft must be capable of communicating with Air Traffic Control (ATC) and be equipped with mode C altitude reporting transponders. Currently, the Class E airspace associated with the airport has a floor established at the surface of the field.

An additional factor of the airspace around the airport is the designation of Special-Use airspace.

Military Operations Area (MOA)

This is an area or airspace designated for non-hazardous military activity such as acrobatics, air combat tactics, and formation training. Visual flight rules aircraft are not restricted from operating in this area. The MOA in the vicinity of the airport is RANDOLPH 2A and LAUGHLIN 2. The RANDOLPH 2 MOA has an operating altitude between 9,000 feet and 17,999 feet and is in use from sunrise to sundown Monday through Friday while the LAUGHLIN 2 MOA has an operating altitude between 7,000 feet and 17,999 feet MSL from 0600 to 2000 Monday through Friday. Communications for operating in this area is conducted through the Houston Center.

Alert Area

Alert areas are an area of airspace that may contain a high volume of fixed and rotary wing pilot training or an unusual type of aerial activity that is not hazardous to aircraft. The alert area affiliated with Kerrville/ Kerr County Airport - Louis Schreiner Field is A-640 and operates between 200 feet and 7,500 feet AGL sunrise to sundown Monday through Friday, excluding holidays. This area is also void of air-to-ground communications facilities.

Table 1-5
Instrument Approach Procedures
Kerrville/Kerr County Airport - Louis Schreiner Field

Runway End	Approach Type	Visibility Minimums	Ceiling Minimum
Runway 12	RNAV (GPS) – LNAV MDA Straight-In	Category A & B – 1 - Mile Category C – 1 ½ - Mile Category D – NA	2,160' MSL/576' AGL 2,160' MSL/576' AGL N/A
Runway 30	RNAV (GPS) – LPV DA Straight-In	Category A – C – 1 - Mile Category D – NA	1,860' MSL/271' AGL N/A
Runway 30	LOC Straight-In	Category A & B – 1 -Mile Category C – 1 ¼ - Miles Category D – NA	2,060' MSL/471' AGL 2,060' MSL/471' AGL NA
Runway 30	NDB Straight-In	Category A & B – 1 - Mile Category C – 2 - Miles Category D – NA	2,300' MSL/711' AGL 2,300' MSL/711' AGL NA
All Runways	VOR-A Circling	Category A – 1 - Mile Category B – 1 ¼ - Mile Category C – 2 ½ - Miles Category D – NA	2,440' MSL/823' AGL 2,440' MSL/823' AGL 2,440' MSL/823' AGL NA

Source: U.S. Digital Terminal Procedures Publications, 30 August 2010
Category equates to Aircraft Approach Category

Navigational Aid (NAVAID)

Airport NAVAIDs, located on the field or at other locations in the region, are specialized equipment that provide pilots with electronic guidance and visual references in an effort to execute instrument approaches and landings and point-to-point navigation. The NAVAIDs available for use by pilots in the vicinity of the airport are a Non-Directional Beacon (NDB) and Very High Frequency (VHF) Omnidirectional Range/Distance Measuring Equipment (VOR/DME).

An NDB is a general-purpose low- or medium-frequency radio beacon that allows a properly equipped aircraft to 'home' in on or determine its bearing relative to the sender. A VOR/DME is a system of VHF Omnidirectional Range Radio Beacons that emit signals to aid navigation instruments in aircraft to determine the location of the VOR station from the aircraft with respect to magnetic north. The co-located distance measuring equipment (DME) is used to measure the slant range distance of an aircraft from the navigational aid, in nautical miles. Due to the high costs of maintaining this equipment, as well as the advances, accuracy, and less costly GPS navigation capabilities, once this equipment reaches the end of its useful life, it is being decommissioned by the FAA.

The NAVAIDs associated with Kerrville/Kerr County Airport - Louis Schreiner Field include the Kerrville Localizer (ERV, 109.1) located just beyond the Runway 12 end, the SHEIN NDB (ER, 263) located 5 miles southeast of the field, the HONDO NDB (HMA 329) located 36 miles to the south, the CASTROVILLE NDB (CVB 338) located 39 miles to the south, the CENTER POINT VORTAC (CSI 117.50) located 7.5 miles to the southwest, the STONEWALL VORTAC (STV, 113.80) located 24 miles to the northeast, the SAN ANTONIO VORTAC (SAT, 116.80) located 38 miles to the southeast, and the HONDO VOR/DME (HDO, 109.40) located 38 miles south of the airport.

Currently, there are five published straight-in or circling instrument approach procedures at the Kerrville/Kerr County Airport - Louis Schreiner Field, and details for these approaches are located in **Table 1-5,** *Instrument Approach Procedures* on shown above.

Airport Service Area

The airport service area is a geographic region served by a select airport. A determination can be made regarding the service area covered by the Kerrville/Kerr County Airport - Louis Schreiner Field by locating competing airports and their relative

distance to population centers, assessing the role of surrounding airports, and evaluating their facilities, equipment, and services, as well as programmed expansion projects.

Surrounding airports have varying degrees of influence on the airport service area with respect to competing services (flight training, charters, fuel, maintenance, courtesy car, security, etc.), facilities and equipment, NAVAIDs, and accessibility. It should be noted, however, that the demand for aviation facilities does not necessarily conform to political or geographical boundaries.

The service area for the Kerrville/Kerr County Airport - Louis Schreiner Field was determined by applying the following service area models:

- **NPIAS Service Area:** This service area is defined by application of FAA Order 5090.B, *Field Formulation of the National Plan of Integrated Airport Systems* (NPIAS). The NPIAS Service Area is defined by an area encompassed by 30-minute (25-mile) ground access to the originating airport. Several public-use airports and privately owned facilities fall within this 25-mile area, which excludes the NPIAS criteria from realistically defining the entire service area boundary.
- **Composite Service Area:** This service area takes into consideration the role and service level of each civilian public-use airport in the immediate area that provides service to the general aviation community, other population centers, and ground access distance and travel times between surrounding public-use general aviation airports. The composite service area is then defined by the consultant through an interpolation of these parameters as they relate to each other.

Table 1-6, *Area Public-Use Airport Facilities,* lists information regarding the facilities and services offered at the nearest public-use general aviation airports to the Kerrville/Kerr County Airport - Louis Schreiner Field. **Table 1-7,** *Area Privately Owned Airports with Public Use Options,* reflects information about regional private airports that can be used

Table 1-6
Area Public-Use Airport Facilities: Kerrville/Kerr County Airport - Louis Schreiner Field

Airport	Distance from Kerrville (NM)	Runway Characteristics	Aircraft/ Operations	Airport Services
Louis Shreiner Field (ERV)	---	3/21 – 60' x 3,592' 12/30 – 100' x 6,000'	168 Based A/C 60,000 ops/yr	Fuel, terminal, car rental, parking, catering, maintenance, flight training
Gillespie County (T82)	18.4 NE	14/32 – 75' x 5,001'	67 Based A/C 15,700 ops/yr	Fuel, terminal, hangars, car rental, flight training, aerial sightseeing, catering
Boerne Stage Field (5C1)	25.4 SE	17/35 – 60' x 4,340'	107 Based A/C 30,000 ops/yr	Fuel, parking
Hondo Municipal (HDO)	37.3 S	4/22 – 150' x 5,400' 8/26 – 150' x 6,059' 13/31 – 150' x 6,024' 17L/35R – 150' x 5,624' 17R/35L – 140' x 3,224'	22 Based A/C 27,00 ops/yr	Fuel, terminal, parking, hangars, flight training, catering
Castroville Municipal (CVB)	40.0 S	15/33 – 75' x 4,600'	39 Based A/C 21,000 ops/yr	Fuel, terminal, parking
San Antonio International (SAT)	41.7 SE	4/22 – 150' x 5,400' 12L/30R – 100' x 5,519' 12R/30L – 150' x 8,502'	209 Based A/C 198,000 ops/yr	All amenities
Kimble County (JCT)	47.5 NW	8/26 – 146' x 2,265' (turf) 17/35 – 75' x 5,000'	10 Based A/C 5,100 ops/yr	Fuel, apron parking/storage
Stinson Municipal (SSF)	50.0 SE	9/27 – 100' x 5,000' 14/32 – 100' x 4,128'	47 Based A/C 156,000 ops/yr	Fuel, car rental, parking, maintenance, aerial sightseeing, terminal, catering
Regional Aviation Activity			501 Based A/C 452,800 ops/yr	

Source: NOAA FAA San Antonio Sectional Aeronautical Chart, 2009, FAA 5010 Data Sheets, and airnav.com

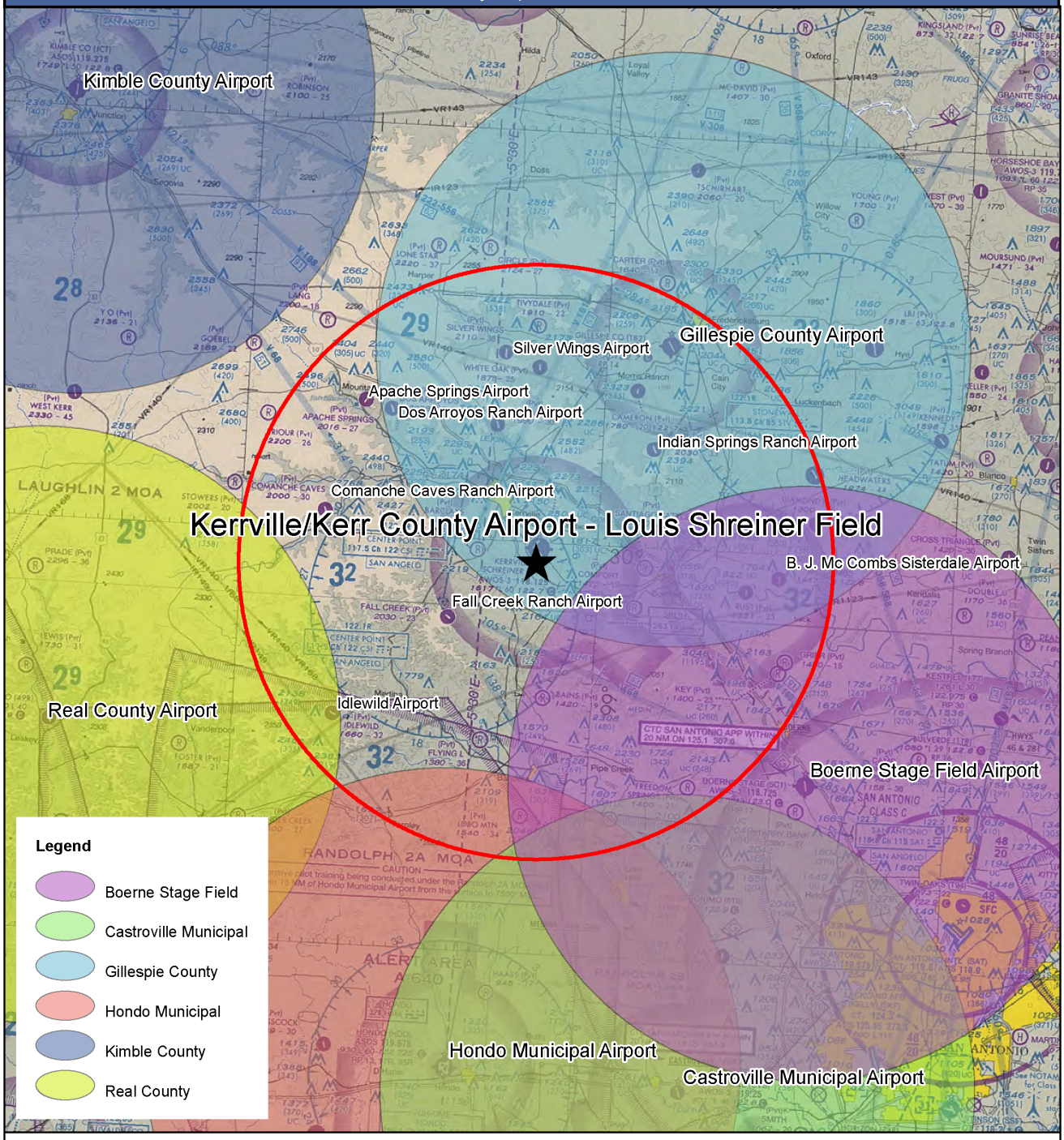
Table 1-7 Area Privately Owned Airfields With Public-Use Options Kerrville/Kerr County Airport - Louis Schreiner Field				
Airport	Distance from Kerrville (NM)	Runway Characteristics	Aircraft/ Operations	Airport Services
Tierra Linda Ranch Airport (60TE)	10 N	16/34 – 50' x 3,000 Asphalt	12 Based A/C	Must be an invited guest to use airfield; No Services
Comanche Caves Ranch Airport (4TA6)	16 W	15/33 – 60' x 3,000' Asphalt	None Reported	Private - Permission Required for Airfield Use; No Services
Headwaters Airport (25XA)	21 E	15/33 – 70' x 4,400' Asphalt	None Reported	Private - Permission Required for Airfield Use; No Services
Dos Arroyos Ranch Airport (XS20)	15 NW	16/34 – 50' x 3,700 Asphalt	None Reported	Private - Permission Required for Airfield Use; No Services
Idlewild Airport (XS11)	19 SW	11/29 – 60' x 3,200' Asphalt	None Reported	Private - Permission Required for Airfield Use; No Services
Silver Wings Airport (TS36)	15 N	17/35 – 80' x 3,800 Asphalt'	2 Based A/C	Private - Permission Required for Airfield Use; No Services
Indian Springs Airport (7XS7)	12 NE	15/33 – 40' x 3,300' Asphalt	2 Based A/C	Private - Permission Required for Airfield Use; No Services
B.J. Mc Combs Sisterdale Airport (SSF)	18 E	16/34 – 50' x 3,100'	None Reported	Private - Permission Required for Airfield Use; No Services
Private Airfield in Region			14 Based A/C	

Source: NOAA FAA San Antonio Sectional Aeronautical Chart, 2009, FAA 5010 Data Sheets, and airnav.com

by the public with owner permission. Understanding the capabilities and influence of the surrounding airports provides insight into existing and future aviation demand and the airport role and service area.

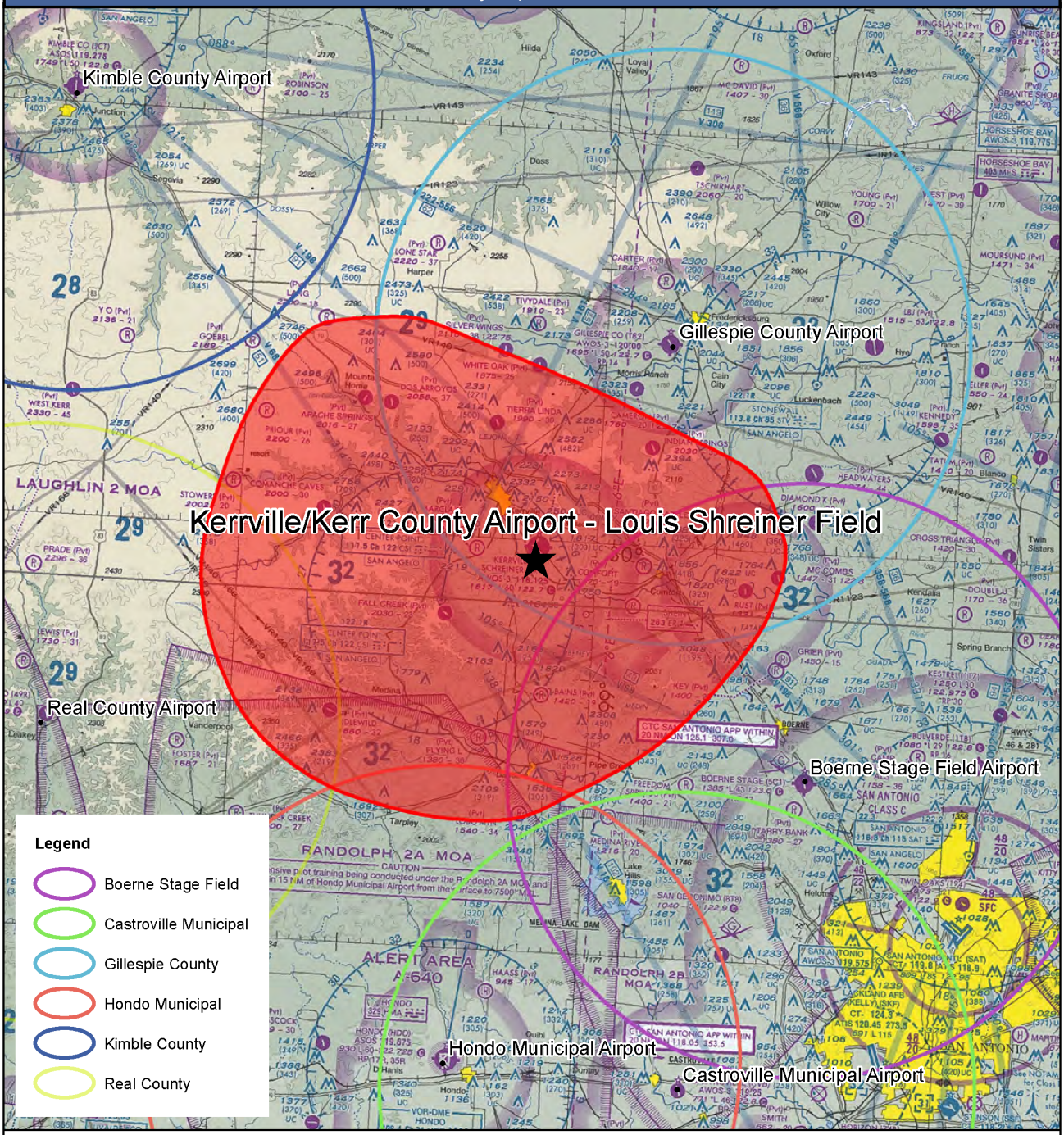
Figure 1-5, *Airport NPIAS Service Area,* located on page 1.28 and **Figure 1-6,** *Composite Service Area,* located on the next page, illustrates the NPIAS and Composite Service Areas for the Kerrville/Kerr County Airport - Louis Schreiner Field. The Composite Service Area includes all of the Kerrville Area as well as the surrounding region.

Figure 1-5
Airport NPIAS Service Area
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: San Antonio Sectional November 2011

Figure 1-6
Composite Service Area
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: San Antonio Sectional November 2011

Interview/Survey Responses

Overview of Survey Findings

As part of the inventory process, postcard notifications were distributed to registered aircraft owners in Kerr and adjacent counties that provided a web-link for an online airport survey to help identify airport use patterns, current conditions, and potential long-range improvement needs and priorities. Approximately 500 notifications were mailed to users in the region. As of the end of October, survey responses have been poor with only 17 individuals completing the questionnaire. Typically, a response rate of 10 to 15 percent is considered satisfactory. Due to the low number of responses, it would be in the best interest of the airport to conduct the survey again or re-evaluate an alternative form of notification to entice more individuals to provide feedback. Online responses will continue to be monitored as the master planning process proceeds with revisions made to this section as appropriate.

The airport users were asked to prioritize the most important airfield and terminal area facilities and airport factors within four categories: very good, good, needs improvement, and poor. A majority of the respondents are pleasure/recreational pilots who fly an average of five times per month. Results of the findings are shown in **Table 1-8,** *Pilot/Aircraft Owners Survey Results,* located on the next page. Based on the scoring method, a lower score expresses that an airside or terminal facility is in good condition or is more highly valued by survey responders. As can be seen, some of the most needed terminal facilities include additional hangar space, auto/access parking, apron tie-down/parking space, better contracts/leases, and aircraft maintenance/repair options while airside needs include taxiway lighting/reflectors, improved taxiway system and maneuvering capabilities, better NAVAID/radar coverage, and improved airfield pavement markings and signage. A copy of the survey results can be found in an appendix to this report.

Table 1-8
Pilot/Aircraft Owners Survey Results
Kerrville/Kerr County Airport - Louis Schreiner Field

Airside Facilities	
Item	**Avg. Rating**
Runway length	1.12
Instrument procedures	1.18
Runway visual aids (PAPI/REILS)	1.27
Runway edge lighting system	1.33
Airport lighting	1.38
Airfield pavement strength	1.38
Automated weather reporting	1.53
Airspace/approach obstructions	2.59
Airport traffic patterns	1.65
Airfield pavement markings/signs	1.82
NAVAID/radar coverage	1.83
Taxiway system/maneuvering	1.94
Taxiway lighting system	2.06
Terminal Facilities	
Item	**Avg. Rating**
Terminal building accommodations	1.53
Terminal security/fencing/lighting	1.57
Courtesy/rental car availability	1.58
Airport line service operations	1.69
Fuel dispensing/availability	1.94
Aircraft maintenance/repair	2.00
Water drainage/flooding	2.00
Regulations/contracts/leases	2.08
Apron tie-down/parking space	2.24
Auto access/parking	2.35
Commercial franchise space	2.64
Hangar availability	3.18

Source: On-line Pilot Survey. Ratings are averages of all received surveys. Based on scale of 1-4, 1 = very good, 2 = good, 3 = needs improvement, and 4 = poor.

Climatic Characteristics

Airport Wind Analysis

Based on information provided in AC 150/5060-5, *Airport Capacity and Delay,* there are three measures that relate to cloud ceilings and visibilities that are important to airfield capacity limitations and runway orientation. Visual Flight Rules (VFR) conditions occur when the cloud ceiling is at least 1,000 feet AGL and visibility is at least 3 statute miles. Instrument Flight Rule (IFR) conditions occur when the cloud ceiling is at least 500 feet but less than 1,000 feet AGL and/or visibility is at least 1 statute mile but less than 3 statute miles. Poor Visibility and Ceiling (PVC) conditions exist when the cloud ceiling is less than 500 feet and/or visibility is less than 1 statute mile.

Weather conditions play an important role in influencing how airfield and runway components are developed and utilized. According to FAA design criteria, an airport's runway orientation is required to achieve 95 percent wind coverage at various crosswind components. These crosswind components vary from 10.5 knots for the smallest general aviation aircraft to 20 knots for the largest. In an effort to determine the impacts of crosswinds and wind conditions at the airport, wind data was obtained from the nearest National Oceanic and Atmospheric Administration (NOAA) reporting station providing at least 10 years worth of full-time weather reporting (San Antonio International Airport, 2000-2009, station #72253, 82,407 observations).

The wind tabulations for both VFR and IFR conditions are shown in the following table, **Table 1-9,** *Wind Coverage Summaries.* The crosswind component is dependent upon the type of aircraft that utilizes the airport on a regular basis. Planning standards state that a crosswind component of 10.5 knots is the maximum for ARC A-I and B-I aircraft, 13 knots is the maximum for ARC A-II and B-II aircraft, 16 knots is the maximum for ARC A-III to D-III aircraft, and 20 knots is the maximum for aircraft exhibiting greater than an ARC of D-III.

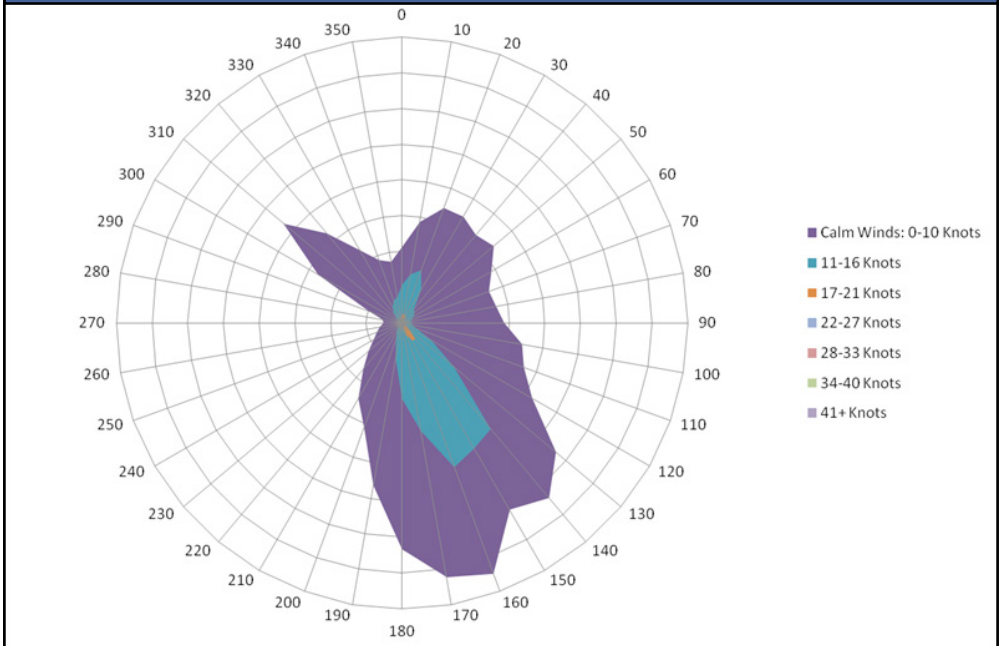
Table 1-9
Wind Coverage Summaries
Kerrville/Kerr County Airport - Louis Schreiner Field

All Wind Coverage Summary			
Runway	**10.5 Knots**	**13 Knots**	**16 Knots**
3	68.52%	71.30%	73.99%
21	72.66%	77.11%	83.32%
Combined	88.51%	94.22%	98.64%
12	84.66%	87.18%	88.87%
30	56.46%	58.60%	60.59%
Combined	93.42%	96.98%	99.43%
Combined	99.93%	99.98%	99.99%
IFR Wind Coverage Summary			
Runway	**10.5 Knots**	**13 Knots**	**16 Knots**
3	77.49%	78.71%	80.03%
21	75.37%	77.60%	79.34%
Combined	95.13%	97.62%	99.57%
12	93.07%	94.56%	95.81%
30	62.91%	64.14%	65.46%
Combined	96.27%	98.15%	99.74%
Combined	99.93%	99.94%	99.98%

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center. Station #72253, San Antonio International Airport, San Antonio, Texas. Period of Record 2000-2009. 82,407 observations.

As can be seen, the dual runways at the airport more than adequately achieve the 95 percent wind coverage at all crosswind components for both VFR and IFR conditions. Based on this wind data, Visual Flight Rules (VFR) meteorological conditions are experienced approximately 92.5 percent of the time annually and Instrument Flight Rules (IFR) meteorological conditions occur approximately 6.8 percent of the time. **Figure 1-7,** *Wind Data,* displays the wind data in a graphic format and exhibits the direction of wind from its origin.

Figure 1-7
Wind Data
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: Garver, LLC

Runway Utilization

The use configuration of the runway system is defined by the number, location, and orientation of the active runway(s) and relates to the distribution and frequency or aircraft operations. According to airport personnel, Runway 12/30 is utilized 90 percent of the time and Runway 3/21 is utilized the remaining 10 percent of the time. **Table 1-10,** *Existing Runway Utilization* reflects the approximate runway use at the airport.

Table 1-10
Existing Runway Utilization
Kerrville/Kerr County Airport - Louis Schreiner Field

Runway	Utilization
Runway 12/30	**90%**
Runway 12	75%
Runway 30	15%
Runway 3/21	**10%**
Runway 3	5%
Runway 21	5%

Source: Airport personnel estimates.

Airport Environs

Land use controls are an important element and tool for both cities and counties to provide a unified systematic approach to guide development and control land uses within their limits or boundaries. An inventory of the existing land uses and zoning patterns surrounding an airport is an important element in the airport planning process. Land use compatibility with airport development can be facilitated with a thorough knowledge of what land uses are proposed and what, if any, changes need to be made.

Existing Land Use

The existing land uses in the general vicinity of the Airport primarily follow the existing zoning patterns. A majority of the Airport is surrounded by open or vacant land. However, large lot residential units exist northeast of the field and low density residential areas are peppered throughout the west side. Additionally, Our Lady of the Hills High School is located approximately one (1) mile northwest of the field. **Figure 1-8** on the next page reflects existing land use in the vicinity of the Airport.

Existing Zoning

Kerr County, as with most Texas Counties, does not have written zoning ordinances or coinciding zoning maps that help dictate the most appropriate land use in a designated location. However, the City of Kerrville does provide a mechanism to influence appropriate development measures. Under the auspices of the Development Services Division, zoning services are overseen and provided by the Planning Department. The latest Zoning Map shows that the Airport is designated as AD (Airport District), which incorporates all airport property, including the Mooney facilities. Just south and northwest of the field, there are areas of PD (Planned Development), which was created for the purpose of permitting property to be developed that might otherwise be prohibited or allowed conditionally. Adjacent to the PD south of the Airport, is a small area of R1 (Single-Family residential). **Figure 1-9** shows the zoning within the vicinity of the Airport.

Figure 1-8
Existing Land Use Map
Kerrville/Kerr County Airport - Louis Schreiner Field

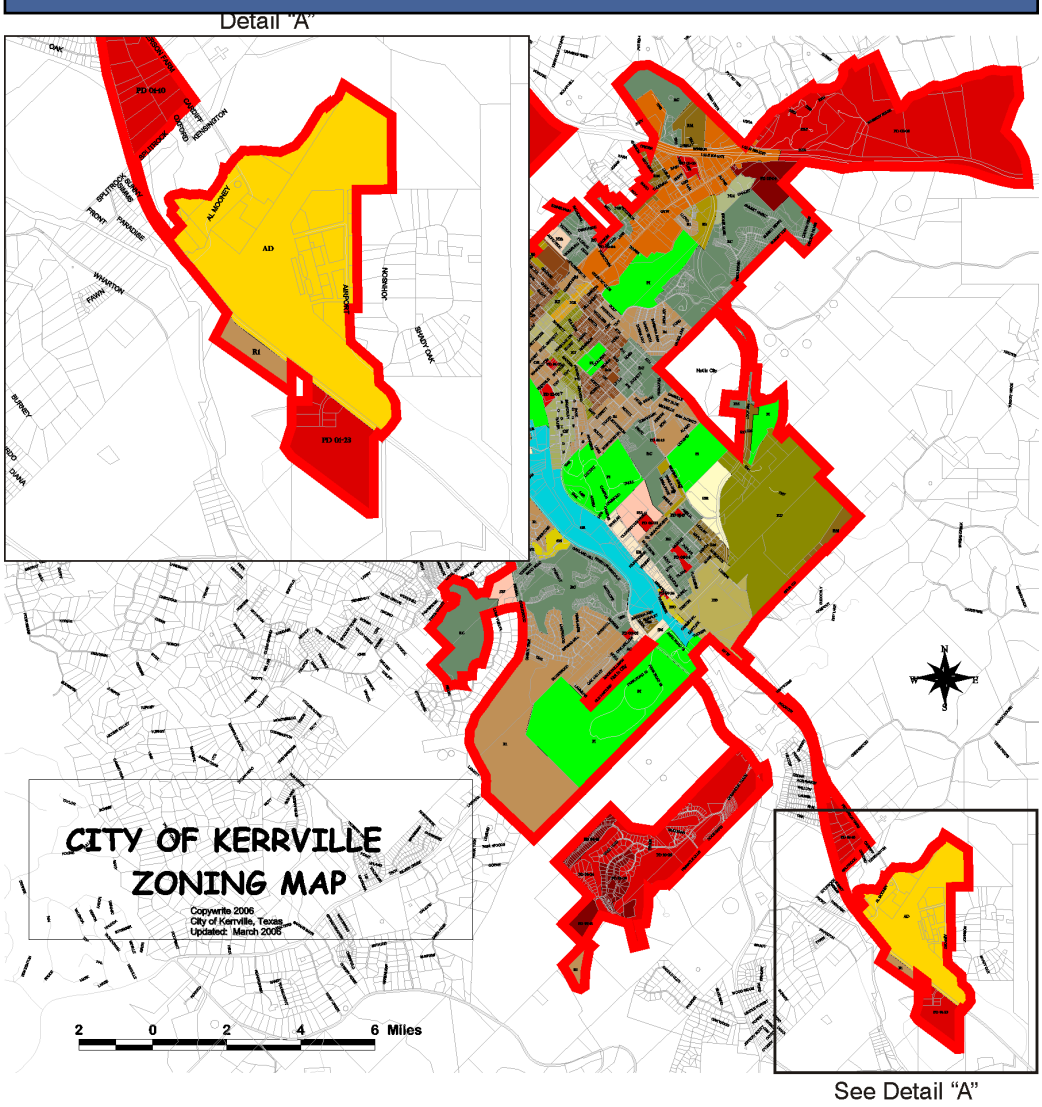
Source: Google Earth, 30 August 2010

Due to the inherent nature of airports, it is imperative that the local oversight agency adopt or put in place some sort of Height Hazard Zoning Ordinance to protect the airspace within its vicinity to ensure a safe operating environment for aircraft that are utilizing the Airport. Such an ordinance helps to ensure that structures proposed to be erected within this designated zone are at a height that does not conflict with aircraft operations. According to TXDOT, Aviation Division, the Airport adopted Height Ordinance as of July 16, 1992. Runway 12/30 is zoned as a 6,000' x 100' runway with Runway 12 reflecting non-precision criteria and Runway 30 reflecting precision approach criteria which compares to Runway 3/21 showing non-precision for both ends. It is important to keep this ordinance up to date as changes to the Airport are made over time.

In 2010, the Airport Board opened discussions designed to guide oversight of the adopted Height Hazard Zoning Ordinance. The Board was informed by the City's attorney that the Airport Board could function as the Joint Airport Zoning Board (JAZB) advising the City and County of issues around the Airport that could adversely impact airport operations and airspace. This information was presented to the City Council by the Airport Board after which the Board was authorized to concurrently act as the Airport Board and the JAZB. The duties of the JAZB are to examine existing

and proposed construction and objects of natural growth in the airport vicinity and provide advice to the City Council and County Commissioners on appropriate action to preserve airspace near the airport from encroachment by incompatible development or objects of natural growth.

Figure 1-9
Existing Zoning Map
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: City of Kerrville Planning Department

Existing Utilities

Utilities on and around the Kerrville/Kerr County Airport – Louis Schreiner Field include water, sewer, electricity, gas, cable, and phone.

Water/Wastewater

Water and sewer in the vicinity of the airport is provided and maintained by the City of Kerrville. Based on information given by the Public Works Department, water line sizes include 6-inch, 8-inch, 10-inch, and 12-inch, and materials mostly consist of PVC; however, Asbestos Concrete Pipe (AC) and cast iron are also present. This compares to the wastewater lines that are either 6-inch or 8-inch diameter PVC piping. **Figure 1-10,** *Existing Water/Wastewater Locations* on page 1.28 shows both water and wastewater line locations. Blue represents water lines and green represents wastewater lines.

Electric

Electricity is supplied to the airport by the Kerrville Public Utility Board (KPUB). A majority of the terminal area is supported by three-phase underground lines augmented with single- or one-phase underground lines. Conversely, within the Mooney Aircraft area, a majority of the electricity is provided by one-phase overhead lines. **Figure 1-11,** *Existing KPUB Electrical Line Locations* on page 1.29 depicts the location of lines in and around the airport.

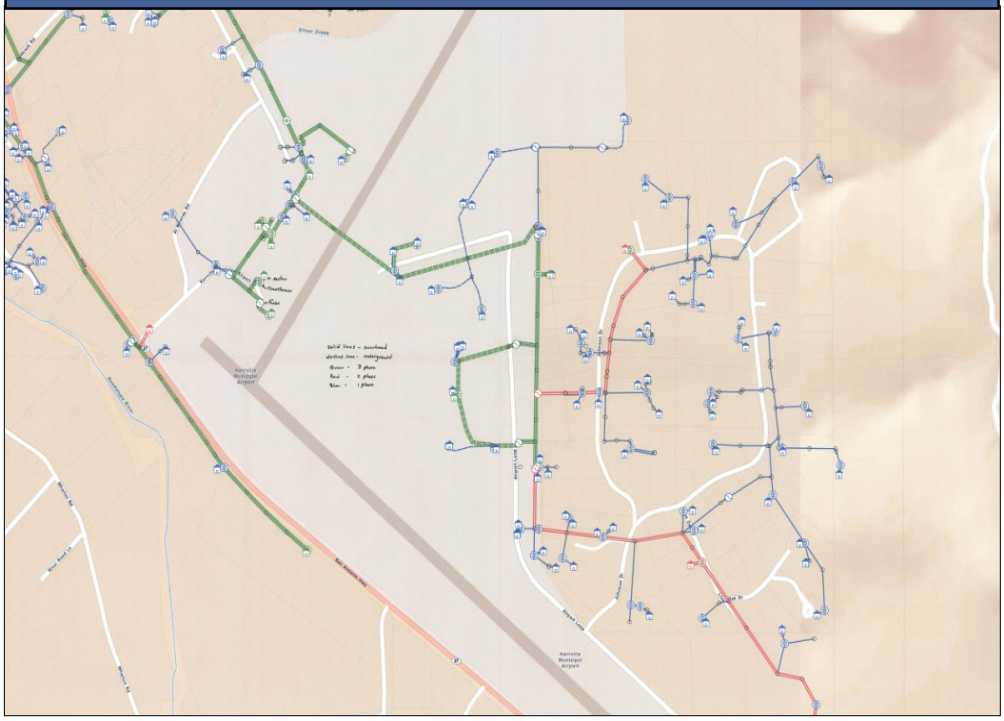
Natural Gas

Natural gas in the vicinity of Kerrville/Kerr County Airport – Louis Schreiner Field is provided by ATMOS Energy. Currently, the natural gas lines in and around the airport are located within the Mooney Aircraft manufacturing area. This 60 PSI

Figure 1-10
Existing Water/Wastewater Locations
Kerrville/Kerr County Airport - Louis Schreiner Field

Source: City of Kerrville Public Works.

Figure 1-11
Existing KPUB Electrical Line Locations
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: KPUB

Figure 1-12
Existing Natural Gas Location
Kerrville/Kerr County Airport - Louis Schreiner Field

Source: ATMOS Natural Gas Company

main pressure gas line parallels Al Mooney Road and continues in this northeast manner for several hundred feet, terminating well beyond the end of Runway 3 at a regulation station. There are no indications that a natural gas line is present in the terminal area of the airport. **Figure 1-12,** *Existing Natural Gas Location* on this page depicts the location of natural gas lines.

Phone/Cable

A majority of the phone connections in the area are provided by Windstream. While Windstream has two of its dedicated poles within the Mooney manufacturing facility, they typically follow the same pattern and layout provided by KPUB for electricity. **Figure 1-13,** *Existing Telephone Pole Locations* on the next page depicts the location of telephone poles.

Figure 1-13
Existing Telephone Pole Locations
Kerrville/Kerr County Airport - Louis Schreiner Field

Source: Wndstream Telephone Company

Mooney Airplane Company

As previously mentioned, subconsultant S*quare One Consultants, Inc.* was engaged to conduct an on-site inspection of the existing Mooney facilities to ascertain the best available option to the airport if these structures become available for lease. Specifically, the intent of the investigation was to determine the current integrity status of the buildings, environmental issues, ADA compliance issues, and potential cost projections associated with any clean up or necessary enhancements. The details and findings of the Executive Summary are furnished below with the complete report and supporting documentation located in an appendix to this report.

Summary

Square One Consultants, Inc. was engaged by Garver to conduct an inspection of the Mooney Airplane Company manufacturing facilities at the Kerrville/Kerr County Airport – Louis Schreiner Field. The investigation team was comprised of:

- Square One Consultants, Inc. – Project Management
- Baer Engineering and Environmental Consulting, Inc. – Environmental
- Bryan M. Euwer – Accessibility
- BD&E, Inc. – Structural

The team visited the site on 17 September 2010 and was accompanied by a Mooney Airplane Company employee. Every building used by Mooney was inspected by the team. The tour included all rooms in every building, the grounds surrounding the buildings, sheds, and any other facility used by Mooney. Once the direction is determined, the Airport Board and our team will discuss the next steps in detail. There are many directions this project could take if Mooney leaves.

General Comments

The facility was built over an extensive period of time with numerous additions and renovations. Most of the buildings have experienced considerable wear and tear. There is a considerable amount of equipment in the buildings that would cost a considerable amount of money to remove and move.

The large prefabricated buildings, which are generally in good condition, could provide a reasonable value for future tenants with relatively minor maintenance, assuming the building is not modified to an extent that would trigger significant ADA/structural changes.

The adjacent land and new construction costs are relatively low. It is likely that new construction would be a cheaper alternative to future tenants than modification and remediation of the existing facilities.

Lease with Mooney

A complete review of the existing lease terms and obligations should be conducted to complete the understanding of the existing conditions. The Airport should endeavor to ensure that Mooney completes and abates any and all obligations in order to maximize the potential value of the site.

If Mooney left the facility without removing the equipment and conducting remediation of the

facilities, the Airport could face extensive costs. It is possible that other tenants could use the machinery and equipment in the manufacturing of other parts for other purposes, but the age and condition of the equipment is in question.

Mechanical and Electrical Systems

It was noted that the facilities appear to be operating properly. It is recommended, however, that an assessment of the power loads be conducted on the electrical system and wiring to ensure compliance with applicable codes. This was indeterminate because future uses may not need as much power that currently feeds the buildings and equipment.

The mechanical systems seem to be operational in the office area. Other equipment was limited to space heaters, fans for ventilation, and similar uses. Many of the systems were not in use at the time of the investigation.

Structural

The large majority of the buildings that don't have specific structural concerns can be immediately reused by a similar tenant, although routine maintenance including painting should be conducted. Consideration should be given to additional structural review and possible repairs of two of the Mooney buildings, and there is indication of leaks in the roofing systems.

Most of the needed work is clean-up of beams from rust and painting to extend the life. There may be some members that need to be replaced. Several buildings may not meet current code. Detailed engineering would need to be undertaken to determine the current status.

If the intent is to recondition the buildings to "like new" condition, then extensive work is required. For instance, if the desire is to patch areas where the roof leaks, then the cost may be relatively low; but to replace those areas, then the cost could become extremely high.

Environmental

Based upon the age and condition of the existing buildings, it is likely that a majority of the buildings contain both lead-based paint and asbestos building products. Modifications to the existing spaces, including improvements for future tenant fit ups, would require a detailed inspection and remediation of all known conditions. The property has a number of open environmental liabilities related to 50 years of operations and several unclosed TCEQ permits. Consideration should be given to conducting a Level 1 environmental evaluation to verify and eliminate the existing conditions.

The currently unused water well, which could potentially provide a conduit for toxins from the site to local drinking water, should be capped.

Because of the nature of the manufacturing facility, there are several potential problems. The most likely candidates for liability include the evaporation pond and the above and underground storage tanks. Detailed test are needed to determine the extent of risk or cost for remediation.

Texas Accessibility Standards ADA/TDLR

The buildings are generally non-compliant with the current ADA/TDLR building requirements. Under current regulations, a building owner is generally required to spend a minimum of 10 percent on upgrades as necessary to comply with the current codes. In addition, all new construction, including improvements for future tenants, would be required to upgrade the related facilities to the current code requirements. Based upon the current condition,

these costs could be significant. To comply with current codes, there is a significant amount of work that needs to be undertaken that will come at a significant price tag. None of the buildings are in compliance with accessibility routes and none of the restrooms comply. There is no access to the second floor.

General Building Repairs

The buildings are in various stages of disrepair. If the intent is to attract a viable tenant, then considerable clean up and cosmetic repairs are required in addition to the TAS compliance, environmental remediation if required, and structural repairs. If Mooney is to remain, then it is likely they can live with the existing conditions. Details of general building repairs can be found in the full report in an appendix to this report.

The extent of improvements depends on the type of tenant being targeted. If a tenant is identified, it would be best to have them review the premises and negotiate the work necessary to conduct business. If the intent is to clean up and attract viable tenants, then more work is likely to be done.

Recommended Next Steps

- ✈ Determine the status of Mooney Airplane Company and its future intentions.
- ✈ Review the lease terms to determine what responsibility Mooney has in terms of building conditions as they vacate.
- ✈ Have Mooney provide reports that are current and cover the scope of the facilities addressing the environmental issues identified.
- ✈ If the airport is to lease the space, determine if the equipment is viable for future industrial use by another tenant.
- ✈ Once the buildings are cleared of equipment, the entire facility needs to be cleaned out and environmental issues need to be addressed.
- ✈ Repair or replace roofs as necessary.
- ✈ Perform cosmetic improvements to enhance the leasing opportunity.
- ✈ Improve access and parking.
- ✈ If there is a change of use, access, restrooms, and related accessibility issues need to be addressed.
- ✈ Compare cost to make the buildings ready for occupancy versus complete demolition and constructing new.

Table 1-11
Historic and Projected Populations
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	Kerrville	Kerr County	State of Texas	City/County Population Ratio
2000	20,425	43,653	20,747,282	46.8%
2005	21,735	46,452	23,067,843	46.7%
2009	22,782	48,690	24,924,291	46.7%
2010[1]	23,044	49,250	25,388,403	46.7%
2015[1]	24,363	52,068	27,519,396	46.7%
2020[1]	25,681	54,886	29,650,388	46.7%
2025[1]	26,308	56,226	31,681,204	46.7%
2030[1]	26,934	57,565	33,712,020	46.7%

Source: Texas Water Development Board
[1] Projections

Socioeconomic Data

Socioeconomic conditions of an area are an essential element in determining and understanding the relationship and related impact on aviation in a community and region. Typical socioeconomic indicators are population, employment, and income.

Population

Due to its location northwest of San Antonio and within the naturally bucolic region of the state, both Kerrville and Kerr County are projected to increase in population over the next 20 years. Due to the Baby Boomer segment of population starting to retire, many communities within a half-hour drive of major metropolitan areas across the nation are experiencing growth, and Kerrville and Kerr County are no exception as can be seen by the recent Comanche Trace Ranch and Golf Club development. **Table 1-11,** *Historic and Projected Populations,* shows the history of population and future projections as formulated by the Texas Water Development Board. These projections reflect a 1 percent annual growth rate for Kerrville and only 0.8 percent for Kerr County, which is comparable to a 1.4 percent annual rate for Texas and a moderate 3.1 percent for Kerr County's southern neighbor, Bandera County.

Income

Based on information provided by the U.S. Census Bureau, the median household income in 2000 (latest information available) for the City of Kerrville was $32,085, Kerr County was $34,283, Texas was $39,927, and the nation was $41,994. This compares to the per capita income that ranged from $20,193 for Kerrville, $19,767 for Kerr County, $19,617 for Texas, and $21,587 for the United States.

Table 1-12
Household Income Distribution
Kerrville/Kerr County Airport - Louis Schreiner Field

Locale	< $15,000	$15,000 - $24,999	$25,000 - $34,999	$35,000 - $49,999	$50,000 - $74,999	> $75,000	% Above $50,000
City of Kerrville	21.1%	17.9%	15.5%	15.4%	14.8%	15.1%	29.9%
Kerr County	19.3%	16.5%	15.2%	17.7%	16.3%	15.0%	31.3%
State of Texas	17.0%	13.6%	13.5%	16.5%	18.4%	21.0%	39.4%
United States	15.8%	12.8%	12.8%	16.5%	19.5%	22.5%	42.0%

Source: U.S. Census Bureau

Table 1-12, *Household Income Distribution* displays the household income for Kerrville, Kerr County, Texas, and the United States. Studies completed by the U.S. Department of Commerce have determined that the likelihood of taking a trip by air increases as family income increases. A parallel can be applied to the general aviation market potential. The inclination to own a general aviation aircraft or travel with commercial air carriers is a direct function of income. Using income as a gauge to aviation activity, statistics indicate that 30 percent of Kerrville households earn income of $50,000 or more and 31 percent of Kerr County households earn above this threshold. This level of income is important because it identifies a segment of the local population that can be considered capable of participating in general aviation activity.

According to the Kerr Economic Development Foundation, the largest employers in the region include: Peterson Regional Hospital, Kerrville ISD, Kerrville State Hospital, Kerrville Veterans Administration Hospital, Wal-Mart, James Avery Craftsman, Inc., HEB Food and Drug, City of Kerrville, Kerr County, and Sava Senior Center. While they aren't included in the major employer's category, the numerous summer camps located across the city and county are important contributors to the tax base and a major attraction of tourism.

Financial and Management Overview

This section identifies the structure, constraints, requirements, and opportunities for financing the Airport Master Plan (AMP) capital improvement program (CIP). Historical financial performance is presented in the form of historical revenues and expenses attributable to Kerrville/Kerr County Airport – Louis Schreiner Field, along with explanations of key accounts. In addition, the outlook for growth is described, based upon the current structure and contractual constraints. Thus, in order to properly frame these financial statements, this section is organized to present the following:

- Joint Airport Board
- Historical Revenues and Expenses

Joint Airport Board

To understand the current fiscal operation of the Kerrville/Kerr County Airport – Louis Schreiner Field, some historical perspective is warranted concerning the Joint Airport Board. In this regard, Kerrville Municipal Airport is operated by an independent Joint Airport Board, an entity established by the governing bodies of the City of Kerrville and Kerr County, Texas, pursuant to the Texas Transportation Code. The board was reconstituted and reorganized in August 2008 by an **Interlocal Agreement** between the city and county. The City and County reauthorized the board for another year in 2011 with four one-year extensions. This reorganization reduced the number of board members from seven to five, and it placed the overall responsibility for management and operation of the airport with the

Joint Airport Board, acting in behalf of both the city and the county. Funding of the operation and maintenance of the facility through the board is being transitioned from a 50 percent city/50 percent county in FY 2009 to a 100 percent county-funded operation by FY 2011.

Key points in the Interlocal Agreement involved the budgeting process whereby the board separates the maintenance and operations costs from the capital costs (defined as any project resulting in a physical object with a value of $25,000 or more). This separation is important since the county will pay 100 percent of the maintenance and operations costs after FY 2011, but the city and the county will continue to equally split capital costs. Other key points involve the board's ability to lease, improve, equip, maintain, operate, manage, regulate, protect, and police the airport.

On 9 August 2010, the board entered into an Interlocal Agreement with Kerr County to provide management and operational services at the airport for one year, effective 1 October 2010. Under this renewable agreement, the county will provide two full-time employees dedicated for use at the airport. These employees would provide daily, weekly, and monthly maintenance and operation services needed by the airport and at the direction of the airport manager. In addition to personnel, the county is providing one-time equipment purchases for the airport in support of the maintenance operations. In-kind services provided by the county as a part of this agreement include:

- **Financial:** Kerr County will provide all necessary financial and accounting services required by the board in the conduct of Airport Business.
- **Purchasing:** The county will:
  - Provide services as may be required conforming to Competitive Bidding Statutes of the State of Texas.
  - Assist in the development of Requests for Proposals (RFP) and Requests for Qualifications (RFQ). Advertising, publication, and related third-party expenses to be borne by the Board.
  - Provide assistance for routine purchases as may be required
- **Engineering and Project Management:** Kerr County will provide engineering and project management services as may be required by the board separate from those specifically provided by others as part of a funded project.
- **Information Technology (IT) and Geographical Information System:** Kerr County will provide services as may be requireds for development, implementation of IT infrastructure required to support ongoing and future airport projects and for use in FAA and TXDOT Aviation compliance measures. The county will provide IT services for the posting of board meeting agendas. The county will provide IT services for the hosting of the airport's website.
- **Court Reporting/Stenographer:** The county will provide a court reporter/ stenographer to record and transcribe the minutes of board meetings.
- **Grant Management:** The county will provide grant management services not otherwise stipulated as may be required by the board.
- **Maintenance:** The county will provide maintenance services unable to be performed by the dedicated staff.
- **Insurance:** The county will cover the airport under its basic property, casualty, and premises liability insurance policies.
- **Road Repair and Heavy Equipment:** The county will provide staff, equipment, and materials necessary to repair the runways, taxiways, roads, and parking areas at the airport. The county will also provide heavy equipment when necessary and staff to operate, if the dedicated staff lacks the training necessary to operate.
- **Fleet Maintenance:** The county will provide fleet maintenance services to the airport's vehicles, including regularly scheduled maintenance and repairs (cost of materials to be paid by the board).
- **Human Resources:** The county will provide human resources services necessary to manage the benefits for the dedicated staff, assist with implementation and compliance with Kerr County Policies and Procedures, and assist with hiring and termination of dedicated staff.

The agreement also deems the airport manager the equivalent of a county department head. As such, the county authorizes the airport manager to contact a county department head directly as necessary to request and facilitate the provision of the in-kind services.

For the financial plan, it is important to understand the role and function of the county, city, and Joint Airport Board. The changing roles and reduced expenditures associated with those changes will likely impact the forecast of revenues and expenses for the airport. In the next section, an examination of the historical revenues and expenses is presented.

Table 1-13
Historic Revenues
Kerrville/Kerr County Airport - Louis Schreiner Field

Item	2004	2005	2006	2007	2008	2009
Operating Revenues						
Leases	$82,557	$98,620	$106,895	$110,592	$103,503	$94,940
Fuel Flow Fees	$20,119	$21,068	$27,835	$38,712	$39,427	$32,969
Terminal Lease	$0	$0	$0	$7,144	$14,141	$14,354
T-Hangar Lease	$47,996	$47,453	$48,900	$43,600	$54,998	$44,438
Interest and Miscellaneous	$5,075	$10,093	$20,130	$12,554	$12,335	$7,147
Revenue from Operations	$155,747	$177,234	$203,760	$212,602	$224,404	$193,847
Intergovernmental Revenues						
TxDOT Reimbursement	$265,057	$264,484	$33,643	$3,991	$0	$0
Kerr County Project Match	$35,834	$173,541	$145,797	$33,334	$33,334	$100,000
Kerr County Contribution	$0	$0	$0	$0	$0	$162,000
Kerr County Mgt. Contract	$0	$0	$112,603	$161,915	$155,000	$0
City Contribution	$0	$0	$0	$0	$0	$162,000
City Project Match	$0	$0	$161,409	$33,334	$33,334	$100,000
City Management Contract	$0	$0	$112,603	$161,915	$155,000	$0
Transfers In	$93,213	$173,793	$0	$378,000	$0	$0
Total Revenues	$549,851	$789,052	$769,815	$985,091	$601,072	$717,847

Source: Kerrville/Kerr County Airport and Louis Schreiner Field personnel

Historical Revenues and Expenses

The Joint Airport Board's objective for the airport is that it becomes self sustaining—meaning that the revenue generated by the airport provides enough funding to pay for all current expenditures and other financial requirements related to the airport. This includes regular costs such as operating expenditures, personnel costs, equipment purchases, and routine facilities maintenance and repair. It also includes paying any debt service or local funding associated with new or expanded facilities. The airport is currently expanding and developing and, as such, is not yet self sustaining.

Table 1-13, *Historic Revenues* on this page shows the historical revenues for FY 2004 through FY 2009 while **Table 1-14,** *Historic Expenses* on the next page shows the airport expenses for the same time period. This information was taken from the statements of revenues and expenses for Kerrville Municipal Airport provided by the Joint Airport Board and the City of Kerrville. Many of the revenue and cost categories represent aggregated totals of several accounting sub-categories. Revenues from airport operations are derived from the following:

Operating Revenues

- **Leases:** This includes ground leases and large hangar leases.
- **Fuel Flow Fees:** This category includes fuel flowage fees paid by the FBOs to the airport board. Current fees are $0.09 per gallon.

Table 1-14 Historic Expenses Kerrville/Kerr County Airport - Louis Schreiner Field						
Item	2004	2005	2006	2007	2008	2009
Operating Expenses						
Personnel	$63,658	$600	$0	$0	$0	$6,024
Supplies	$6,798	$18,779	$13,771	$11,389	$16,740	$8,273
Maintenance	$98,507	$93,081	$55,135	$66,314	$38,523	$53,676
Utilities	$8,205	$8,299	$9,816	$16,536	$10,068	$9,224
Management Contract	$0	$0	$225,206	$223,134	$343,545	$268,318
Other Services	$12,550	$245,497	$9,403	$115,058	$17,314	$5,513
Insurance	$4,123	$10,620	$8,657	$10,372	$10,745	$0
Miscellaneous	$5,742	$17,438	$100	$5,603	$13,637	$5,365
Terminal Expenses (Separated 2008 and 2009)	$0	$0	$0	$0	$19,362	$12,234
Total Operating Expenses	$199,583	$394,313	$322,087	$448,406	$469,936	$464,790
Non-operating Expense						
Capital Outlays	$41,337	$0	$0	$666	$19,941	$0
Local Matching Funds	$216,157	$293,049	$656,407	$445,116	$50,289	$275,350
Total Non-operating Expenses	$257,494	$293,049	$656,407	$445,783	$70,230	$275,350
Total Expenses	$457,077	$687,363	$978,494	$894,189	$540,166	$740,140

Source: Kerrville/Kerr County Airport and Louis Schreiner Field personnel

- **Terminal Lease:** These revenues are derived from the lease of the new terminal building to Kerrville Aviation, beginning mid-year 2007.
- **T-Hangar Lease:** This category includes revenues from the airport's T-Hangar facilities.
- **Interest and Miscellaneous:** This category includes the interest revenues and miscellaneous income from vehicle rent surcharges and storage rentals.

Non-Operating Revenues

- **TxDOT Reimbursement:** This account was used to record revenues paid to the airport by TxDOT in support of its capital projects. This practice changed beginning in 2007 when TxDOT paid funds directly to contractors.
- **Kerr County Accounts:** Three accounts track Kerr County payments to the airport board for matching funds, airport operation, and the management contract.
- **Kerrville City Accounts:** Similar to the Kerr County accounts, three accounts track City of Kerrville payments to the airport board for matching funds, airport operation, and the management contract.
- **Transfers In:** These are funds from the airport sponsors that were needed to pay capital outlays.

Airport expenses were made up of the following cost items:

Operating Expenses

- **Personnel:** This category was once used to record the payroll costs of airport personnel. Currently, it is only used to record professional development costs and local meetings expense.
- **Supplies:** This expense category includes the costs of supplies for the office, small tools and equipment, chemical and medical supplies, fuel and oil, food, janitorial, postage, and computer supplies.
- **Maintenance:** This expense category includes the costs of maintaining airport land (mowing and other costs), buildings and structures, instruments and apparatus, and other miscellaneous equipment maintenance needs.
- **Utilities:** Costs for telecommunications, electricity, natural gas, and water and sewer.

- **Management Contract:** This expense category includes services previously provided by the city for administration, engineering, project management, routine maintenance, legal, and other services. These services are being provided by the county as of 1 October 2010.
- **Other Services:** This account includes special services and outsourced services that are not provided by city or county employees.
- **Insurance:** This expense was accounted independently until 2009, when it was absorbed into the Management Contract. It will not be forecast as an independent line item.
- **Miscellaneous Expense:** This cost category is a catch-all for a number of small accounts such as dues and subscriptions, hire of equipment, contingencies, and other charges.
- **Terminal Expense:** When the new terminal was constructed and rented, costs associated with the terminal utilities and supplies were separated from the other utilities and supplies for the airport so that they could easily be charged back to the FBO tenant. This practice began in 2008.

Non-Operating Expenses

- **Capital Outlays and Local Match Funds:** Capital projects requiring local matching funds are classified as non-operating expenses in this analysis.

It should be noted in **Table 1-14,** *Historic Expenses* that revenue from operations is considered the portion that is generated by the airport itself. These operating revenues are currently significantly lower than the subsidies from the city and county for operating and non-operating costs. Also, with the new formation of the board in August 2008, some new accounting practices were implemented that changed the use or definitions of previous accounting categories. As such, there may be overlapping accounts in years previous to 2008 and 2009 such as personnel, insurance, and some capital matching fund costs. These changes will be incorporated into the forecast of revenues and expenses so that the current accounting methods will be shown for the future.

For purposes of the financial plan, the ability of the airport to generate revenues and cover operating costs is a primary concern. In this regard, increased revenues can be used to pay operating costs and, if sufficiently large enough, can be used to pay portions of the local share of capital development or other non-operating costs. **Table 1-15,** *Comparison of Operating Revenue and Expenses* presents a comparison of operating revenues and expenses for the airport. From the historical financial information, the total operating expenses fluctuated year to year, ranging from a low of $199,600 in FY 2004, to a high of $469,900 in FY 2008.

Table 1-15
Comparison of Operating Revenue and Expenses
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	Operating Revenues	Operating Expenses	Net Revenue (Deficit)
2004	$155,747	$199,583	($43,836)
2005	$177,234	$394,313	($217,079)
2006	$203,760	$322,087	($118,327)
2007	$212,602	$448,406	($235,804)
2008	$224,404	$469,936	($245,532)
2009	$193,847	$464,790	($270,943)

Source: Kerrville/Kerr County Airport and Louis Schreiner Field personnel

Operating revenues also fluctuated each year from a low of $155,800 in FY 2004 to a high of $224,400 in FY 2008. The six-year average in operating revenue was $194,600 per year or $188,600 less than the $383,200 average operating expenses during the same period. These numbers do not include capital or other non-operating revenues or costs. The obvious conclusion from the review of historical revenues and expenses is that the significant gap in operating revenue and expense categories will likely require both revenue increases and cost-cutting efficiencies in order to reduce or eliminate airport sponsor subsidies. It should be noted that most public-use general aviation airports in the United States do not cover expenses with revenues and must be subsidized by their owners/sponsors.

Strategic Plan

In May 2009, the Joint Airport Board developed a Strategic Plan to provide a purpose, vision, and mission for the airport. By definition, a strategic plan is "a comprehensive plan for accomplishment in relation to stated goals and objectives. Ideally, the plan should cover multiple years; include targets for expected accomplishments; and propose specific performance measures used to evaluate progress towards those targets."

According to the plan, the airport's mission statement is to "plan, construct, manage and maintain an exceptional aviation gateway to Kerrville, Kerr County, and the Texas Hill County; furthermore, provide a safe, convenient, efficient, and genuinely friendly base of operations for our users." A more in-depth elaboration and discussion of this Strategic Plan will be provided in the Marketing Plan chapter of this Master Plan. Additionally, a copy of the existing Strategic Plan can be found in an appendix to this report.

Summary

The goal of this chapter is to provide general background information pertaining to the airport, its operating environment, and its physical surroundings. This chapter is vital from the standpoint that it will be used as reference tool in the analysis and design process that is required to prepare the airport's future development plan.

The airport, managed by a five-member board and full-time airport manager, has a long history of providing quality general aviation services to the residents of Kerrville and Kerr County. With a business like Mooney Airplane Company on the field, aviation has a focal point in the community and has provided at times significant economic benefits to the region. History also shows that the level of investment in both landside and airside facilities has been significant with nearly $12 million in project development.

Operationally, the airport has experienced highs and lows. It provides general aviation services to the residents of Kerrville and Kerr County as well as some from neighboring counties. The airport has a two-runway system with Runway 12/30 serving as the primary with a newly reconstructed full-length parallel taxiway. Runway 3/21 provides crosswind duties and has a complimentary full-length parallel taxiway as well. There are nearly 170 based aircraft of various different sizes conducting over 60,000 annual operations.

Financially, the airport does not operate in the black. Historically, the City of Kerrville has maintained the airport's financial records, with the city and county both providing supporting funds. In October 2010, Kerr County assumed this responsibility and has provided the airport with new equipment and personnel to support airfield maintenance.

The next step in the planning process is to formulate forecasts for the type and quantity of future aviation activity expected to occur at the airport during the 20-year planning effort.

Chapter Two:
Aviation Activity Forecasts

GARVER

KERRVILLE
ERV
KERR COUNTY
LOUIS SCHREINER FIELD

Chapter 2: Aviation Activity Forecasts

Forecasts are instrumental in identifying airport-related infrastructure and capacity needs and estimating the financial feasibility of airport development alternatives.

Introduction

The purpose of forecasting aviation activity is to estimate future airport facility and equipment needs. The preferred demand forecasts are used to identify the type, extent, and timing of aviation development. In addition, the forecasts are instrumental in identifying airport-related infrastructure and capacity needs and estimating the financial feasibility of airport development alternatives.

Airport activity is often influenced by the types of aviation services offered for transient and based aircraft and by the general business environment. In addition, factors such as vigorous local airport marketing, gains in sales and services, increased industrialization, changes in transportation mode preferences, and fluctuations in the national or local economy all influence aviation demand. Aviation activity forecasts are developed in accordance with national trends and regional/local influences and in context with the inventory findings, including local population and airport survey information. This chapter will examine aviation trends and the numerous factors that have influenced those trends in the United States and Texas.

Summary of Based Aircraft and Historical Annual Operations

Table 2-1, *Historic Aviation Activity* on page 2.2 summarizes the available historic based aircraft and annual operations (local, itinerant, air taxi, and military) at the airport since 1995. A based aircraft is defined as an actively registered airplane stationed at a select airport that regularly uses the airport as the primary "home base" for filing flight plans, frequently uses available airport amenities, and/or maintains a formal commitment for long-term aircraft parking/storage. An aircraft operation is one take off and/or landing of an aircraft. Aircraft operations are identified as local and itinerant. Local operations consist of those within a 20-mile radius of the airport, while itinerant operations include all operations other than local, having a terminus of flight or origination of flight at another airport at least 20 miles away.

The following observations were identified at the airport as part of the inventory of historic and current airport activity levels:

- Aircraft Activity Summary: Based aircraft at the Kerrville/Kerr County Airport - Louis Schreiner Field have varied widely from a low of 69 to a high and current level of 166.
- Operational Activity Summary: Operations at the airport have increased steadily each year since the mid 1990s from 40,501 to today's level of approximately 60,000.

Table 2-1 Historic Aviation Activity Kerrville/Kerr County Airport - Louis Schreiner Field					
Year	Based Aircraft	Local Operations	Itinerant Operations	Air Taxi and Commuter	Total Airport Operations
1995	69	21,000	19,400	101	40,501
2000	92	23,400	19,400	101	42,901
2001	92	23,400	19,480	101	42,981
2002	92	24,137	20,192	101	44,329
2003	93	24,874	20,702	101	45,677
2004	128	25,599	21,303	101	47,003
2005	128	26,337	21,914	101	48,352
2006	128	26,952	22,424	101	49,477
2007	128	27,580	22,844	101	50,625
2008	168	12,136	47,664	---	59,800
2009[1]	166	18,180	42,420	---	60,000

Source: FAA Terminal Area Forecasts/FAA Form 5010
[1] Airport personnel.

National General Aviation Trends –

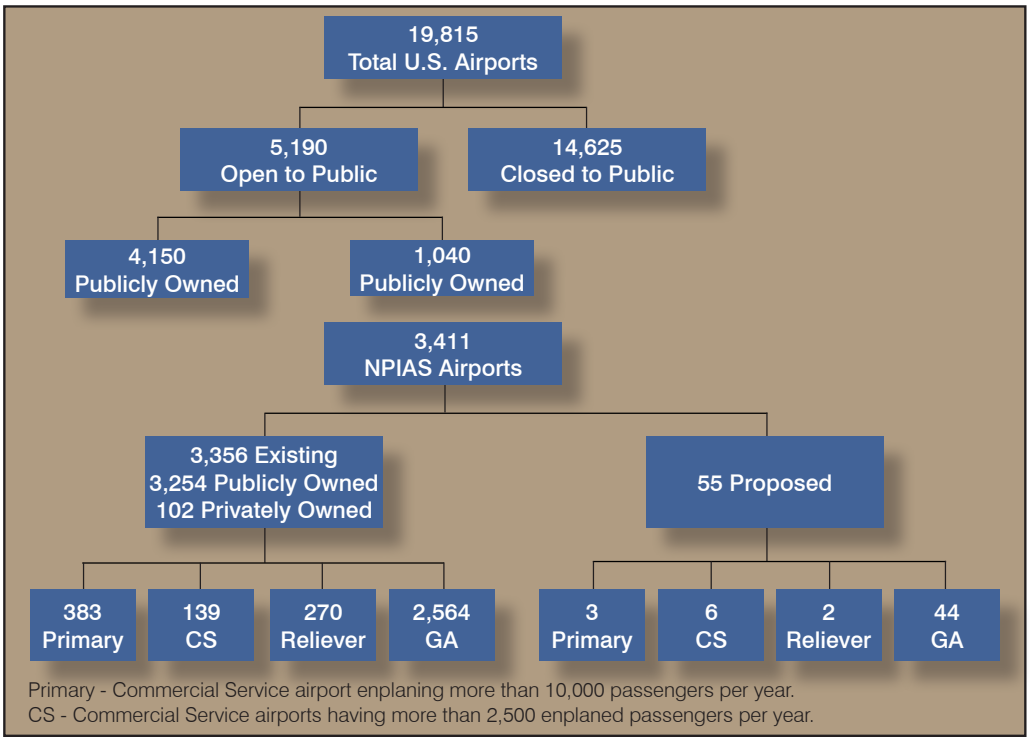
An understanding of recent and anticipated trends within the general aviation industry is important when assessing aviation demand in Kerr County and at the Kerrville/Kerr County Airport - Louis Schreiner Field. National trends can provide insight into the potential future of aviation activity with some having an effect on aviation demand in the study area while others will have little or no appreciable impact on the aviation demands.

Various data sources were examined and used to support the analysis of national general aviation trends and include:

- Federal Aviation Administration, *FAA Aerospace Forecasts, Fiscal Years 2010 - 2030*
- National Business Aircraft Association (NBAA), *NBAA Business Aviation Facto Book, 2010*
- General Aviation Manufacturers Association (GAMA), *General Aviation Statistical Databook and Industry Outlook, 2009*
- Honeywell Corporation, *2007 Business Aviation Outlook*

General Aviation Overview

General aviation (GA) aircraft are defined as all aircraft not flown by commercial airlines or the military. GA activity is divided into six use categories, as defined by the FAA. Personal use and air taxi (FAR Part 135) use of GA aircraft are the two largest components of general aviation activity. Currently, there are 19,815 public and private airports located throughout the United States with 5,190 of these open to public use. The following graphic displays the breakdown of airports as described in the FAA's *2009 – 2013 National Plan of Integrated Airport System (NPIAS).* The number and distribution of public use airports available to general aviation users provides a valuable transportation and economic resource to local communities, businesses, and individuals throughout the region, state, and nation.



General Aviation Industry

The general aviation industry began a pronounced decline in 1978. This decline continued in a sporadic manner through most of the 1980s and into the early 1990s with minimal recoveries in the latter years. Nationally, this decline resulted in the loss of over 100,000 manufacturing jobs and a drop in aircraft production from about 18,000 aircraft annually to only 928 aircraft in 1994 and a dramatic drop in the number of new student pilots.

Contributing to the general aviation decline during this period was the large number of liability claims experienced by aircraft manufacturers, the loss of some veteran's benefits that helped to cover the cost of student pilot training for military veterans, and the recessionary economy. The large number of aircraft accident lawsuits caused dramatic increases in aircraft manufacturing costs. Aircraft manufacturers estimate that these lawsuits contributed to approximately 30 percent of the cost of a new aircraft.

In 1994 the passage and adoption of the *General Aviation Revitalization Act* (GARA) brought some relief to the general aviation aircraft industry by establishing an 18-year statute of repose on liability related to the manufacture of all general aviation aircraft and their components. Before GARA, there was no time limitation on an aircraft manufacturer's liability. This new legislation prompted some general aviation aircraft manufacturers to return their production lines of single-engine piston aircraft to limited output. While adoption of GARA promoted single-engine piston aircraft production, their cost has continued to rise. This has caused aircraft production levels to remain well below those experienced during the 1960s and 1970s when the annual numbers of aircraft manufactured were commonly more than 10,000.

Some positive impacts GARA has had on the general aviation industry are reflected in recent national statistics. Since 1994, general aviation activity has increased. The active general aviation aircraft fleet is growing and there has been an increase in shipments of fixed-wing general aviation aircraft.

More recently, the terrorist attacks of 2001, the continued war on terror, and the current prolonged recessionary national economy have had a dampening effect on general aviation industry trends as witnessed by the layoffs at Cessna and other aircraft manufacturers and the limited numbers of new aircraft orders worldwide. Significant restrictions were placed on general aviation flying following 9/11, which resulted in severe limitations being placed on general aviation activity in a number of important areas of the country. Most of these restrictions have now been lifted, and business and corporate aviation is experiencing some positive gains resulting from additional use of general aviation aircraft for business and corporate travel. This benefit is tied directly to the increased security measures implemented at commercial service airports that significantly influences travel times.

General Aviation Function and Role

The FAA recognizes three broad categories of aviation activity: 1) general aviation, 2) certificated air carrier, and 3) military. Convenient, safe, and rapid accessibility is one of the most important variables affecting community growth and economic vitality. GA includes all civilian aircraft other than the certificated air carriers and military aircraft and represents the largest component of the national air transportation system. FAA statistics indicate

Figure 2-1
U.S. Aircraft Shipments, 1998 -2009
Kerrville/Kerr County Airport - Louis Schreiner Field

Source: GAMA Statistical Databook, 2009

that GA represents the largest, and in many ways, the most significant segment of the national air transportation system, accounting for 96 percent of all civilian airports, 95 percent of all civilian aircraft, 84 percent of all pilots, and about 75 percent of all aircraft operations. With nearly 80 percent of general aviation flying conducted for business purposes, general aviation has directly contributed to the movement of manufacturing and service industries away from larger metropolitan areas to smaller, rural communities.

Historic General Aviation Shipments and Billings

The shipment of general aviation aircraft is an important indicator used to measure the health of general aviation in the United States. Shipments represent new general aviation aircraft that have entered the active general aviation fleet, and billings represent the cost of those new aircraft shipments. Total annual shipments and billings of general aviation aircraft are tracked and reported by General Aviation Manufacturers Association (GAMA). **Figure 2-1,** *U.S. Aircraft Shipments, 1998-2009* depicts the historic general aviation shipment and billing statistics for aircraft manufactured in the United States from 1998-2009.

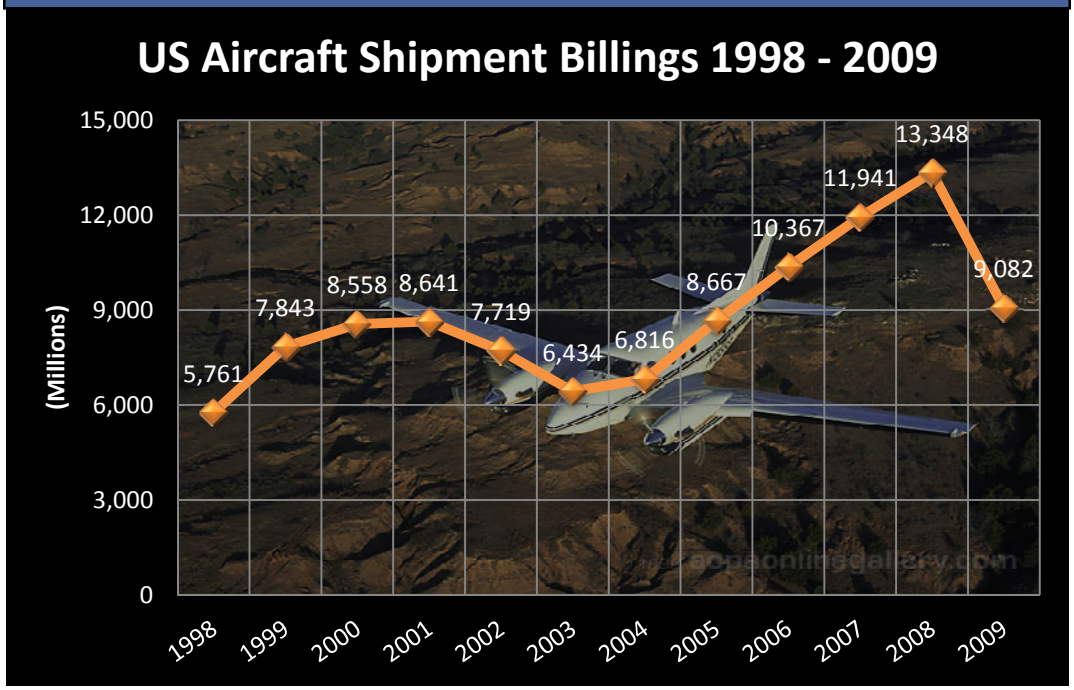
GAMA statistics indicate a consistent growth from 1993 to a high reached in 2000 (2,816). The economic recession experienced since 2001 and the terrorist attacks of September 11, 2001 are factors that led to the overall decline in general aviation aircraft shipments and billings until 2003 when shipments began to increase, reaching and even surpassing year 2000 levels. The recent growth in this segment can be attributed to increased business use of aircraft and a desire by corporations to have greater control over business travel, both through fractional ownership arrangements and/or traditional corporate flight departments. Business jets are high-performance general aviation aircraft, with correspondingly high acquisition costs, that require airport facilities of a relatively higher development standard to meet their needs. The downturn from years 2007 through 2009 is indicative of the worldwide recession and a reevaluation of aircraft owners to appropriately budget the use and ownership of their general aviation aircraft.

GAMA also tracks total billings to both domestic and international customers for general aviation aircraft manufactured in the United States. As illustrated in **Figure 2-2,** *U.S. Aircraft Billings, 1998-2009* on page 2.5, statistics indicate that while aircraft shipments have increased since 1998, the billings (or cost) associated with those aircraft shipments have increased much more significantly. This is another factor that is indicative of the growing sophistication of the new aircraft entering the general aviation fleet.

Increased personnel productivity is one of the most important benefits of using business aircraft. It has

been noted that many employees feel much more productive on company aircraft versus commercial travel. Companies flying general aviation aircraft for business have greater control of their schedule and ultimate travel destinations. Itineraries can be changed as needed, and the aircraft can fly into destinations not served by scheduled airlines. Business aircraft usage provides:

Figure 2-2
U.S. Aircraft Billings, 1998 -2009
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: GAMA Statistical Databook, 2009

- ✈ Employee time savings
- ✈ Increased en-route productivity
- ✈ Minimized time away from home
- ✈ Enhanced industrial security
- ✈ Enhanced personal safety
- ✈ Management control over scheduling

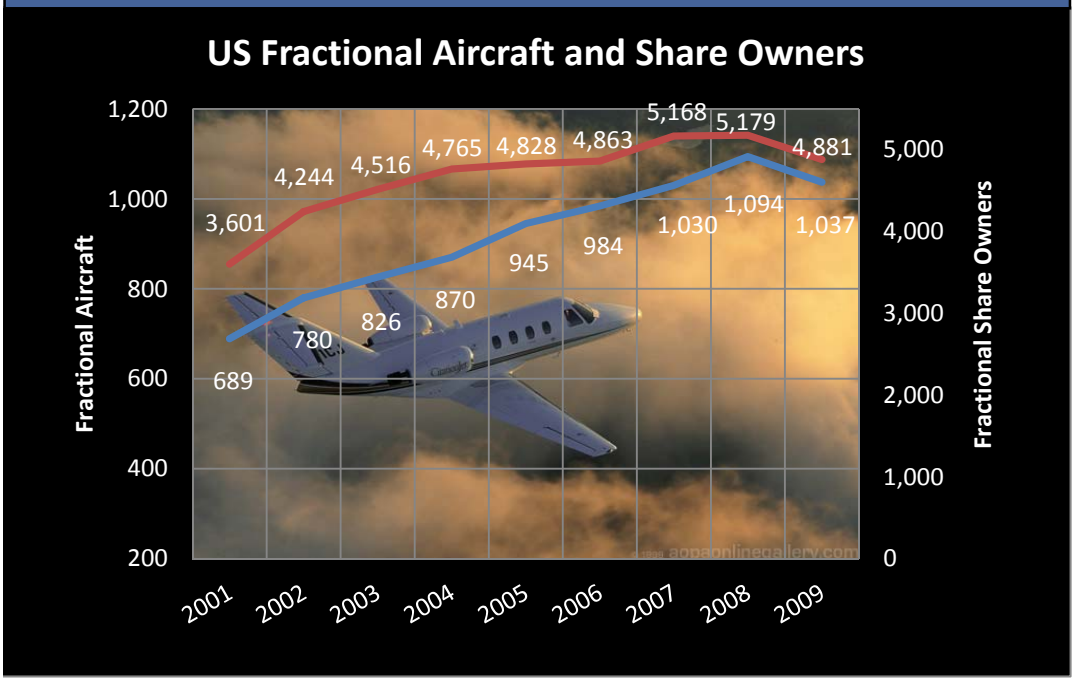
Businesses and corporations have increasingly employed business aircraft in their operations. According to NBAA statistics, the number of companies using business aircraft has increased from approximately 6,600 in 1991 to approximately 12,000 in 2009. Businesses have also expressed growing interest in corporate and fractional aircraft ownership and charter services to serve their air travel needs because of safety concerns and time savings. This trend is continuing based on recent aircraft orders.

Business Use of General Aviation

Business aviation is the fastest growing segment of general aviation. More and more companies and individuals are using general aviation aircraft as a tool to improve their business efficiency and productivity. Many of the nation's employers who use general aviation are members of the NBAA. The NBAA indicates that approximately 75 percent of all Fortune 500 companies operate general aviation aircraft and 92 of the Fortune 100 companies own and operate general aviation aircraft. NBAA statistics show that the number of companies operating business aircraft increased from 6,584 in 1991 to approximately 12,000 in 2009.

Business use of general aviation aircraft ranges from small, single-engine aircraft rentals to multiple aircraft corporate fleets supported by dedicated flight crews and mechanics. Use of general aviation aircraft allows employers to transport personnel and air cargo efficiently and oftentimes more cost effectively. Many times, businesses use general aviation aircraft and airports to link multiple office locations and reach existing and potential customers who can be difficult to reach via commercial aviation services. Business aircraft use by smaller companies is on the rise as various chartering, leasing, time-sharing, interchange agreements, partnerships, and management contracts have emerged.

Figure 2-3
U.S. Fractional Ownership, 2001-2009
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: GAMA Statistical Databook, 2009

Figure 2-3, *U.S. Fractional Ownership, 2001-2009* illustrates the growth of fractional ownership in the United States. Fractional ownership arrangements began to appear in the mid-1980s. Since the mid-1990s, their growth has been significant. According to GAMA, in 2001 there were a total of 3,601 fractional ownership arrangements representing 689 aircraft, and by the year 2009, there were approximately 4,881 arrangements representing 1,037 aircraft. This growth over the course of the eight-year period equates to a growth factor of 50 percent or 6.25 percent annually for fractional aircraft and 35 percent or 4.4 percent annually for fractional arrangements.

The primary companies in the fractional jet ownership market include NetJets, CitationShares, Bombardier Flexjet, and the Flight Options/Travel Air operations. NetJets, the industry leader in fractional aircraft ownership, has purchased aircraft of various sizes from the smallest cabin such as the Cessna Citation Bravo to the largest cabin such as the Gulfstream V, totaling more than $19 billion in value in the last several years alone. As of 2009, the company had a total fleet of more than 800 aircraft for both its United States and European services.

Other new, growing segments of the business aircraft fleet mix include airline aircraft that have been reconfigured as very large business jets and the introduction of very light jets (VLJ). Examples of modified airliner aircraft include the Boeing Business Jet (BBJ) and Airbus ACJ. VLJs are a new entrant into the business jet fleet and are a new category of aircraft; examples include: Eclipse 500, Diamond D-Jet, Embraer Phenom 100, Epic Jet, Spectrum 33, HondaJet, and Cessna Mustang. These are small, four to eight-seat jets that cost substantially less than typical business jet aircraft. VLJs represent a significant departure from the cost of previously available business jet aircraft.

The FAA expects and forecasts 440 of these jets to enter the active fleet over the next three years and increase to a rate of 216 yearly through 2030, totaling 4,875 aircraft for the planning period. Proponents of the VLJs, which have a range of 1,000 miles or more and are capable of operating at an airport with less than 5,000 feet of runway length, expect them to spawn a new generation of air taxis and charters that would carry travelers to small airports, usually within 20 minutes of their homes or destinations, at coach fare prices. Unfortunately, as of this writing, due to unforeseen circumstances in the global economy and a downturn in the national economy, it is likely there will be a readjustment in the projected number of VLJs to come into the marketplace, and some manufacturers of these aircraft and users will potentially cease to operate. This is already the case

with Eclipse, known to some as the frontrunner of the VLJ movement, Adam Aircraft, producer of the A700 VLJ, and DayJet, an on-demand charter service slated to utilize the VLJ fleet for its operations.

In February 2008, Adam Aircraft, designer and maker of the A700 VLJ, filed for bankruptcy and has been absorbed by AAI Acquisition, Inc. to provide additional backing and financing. Work is progressing to achieve certification projected sometime in 2010. The Eclipse 500, which attained FAA certification in 2007 and was originally targeted to have a purchase price of approximately $875,000, has now reached a cost of $2.1 million. Due to this differential in cost, the company is using existing down payments to provide the necessary delivery of aircraft contracted for the lesser amount. Unfortunately, Eclipse Aviation filed for Chapter 11 bankruptcy which has since been converted Chapter 7; thus, the much touted light jet is no longer available. Lastly, DayJet, the on-demand charter service ceased operations in September 2008. DayJet's shutdown is a direct consequence of the company's inability to arrange critical financing. DayJet was to operate the Eclipse 500 aircraft for its services but is now in talks with a European fractional provider, OurPlane, to purchase its entire fleet of 28 aircraft.

Figure 2-4
VLJ Aircraft
Kerrville/Kerr County Airport - Louis Schreiner Field

Source: GAMA Statistical Databook, 2009

While there is still optimism about the future of the VLJ, due to the volatility and uncertainty in the market place, the projected number of aircraft deliveries in the short-term should likely be re-evaluated. **Figure 2-4,** *VLJ Aircraft* depicts examples of VLJs and their general design.

Non-Business Use of General Aviation

Non-business use of general aviation primarily involves personal and pleasure flying. This segment of general aviation continues to be impacted more than other segments by changing economic and social conditions. Constraints on personal and pleasure flying relate directly to the high operating costs of existing aircraft and the high purchase price associated with new general aviation aircraft.

These constraints are amplified by lifestyle changes. Competing leisure-time activities caused a dilution of general aviation activity, particularly when compared to the increasing costs associated with general aviation flying. In addition, other lifestyle changes related to personal expectations may have a negative impact on the potential for significant growth in the personal and pleasure flying segment. **Table 2-2,** *Average Aircraft Age by Type, 2009* on page 2.8 shows the average age of the United States registered general aviation aircraft fleet, as presented in GAMA's *2009 Statistical Databook.* As can be seen, the average age of the general aviation fleet for both single- and multi-engine aircraft is 39 years. The newest or youngest element of the fleet can be attributed to turbine type aircraft, which follows along historic trends as being the type of choice due to reliability and associated costs.

Table 2-2 Average Aircraft Age By Type, 2009 Kerrville/Kerr County Airport - Louis Schreiner Field			
Aircraft Type	Engine Type	Seats	Average Age in Years
Single-Engine	Piston	1-3	48
		4	38
		5-7	34
		8+	49
	Turbo-prop	All	16
	Jet	All	44
Multi-Engine	Piston	1-3	49
		4	36
		5-7	39
		8+	42
	Turbo-prop	All	28
	Jet	All	17
All Aircraft			39

Source: GAMA, 2009 Statistical Databook

Based on the information collected by GAMA in the table above, the average age of single-engine piston aircraft ranged between 34 and 49 years old. As a general rule, most Americans want to own the most recently developed products; however, as shown in the previous table, some consumers may be swayed from purchasing a used aircraft based on a desire for convenience, and more importantly, reliability.

Compounding the average age of aircraft is the rising cost of fuel, parts, and all things aviation. The sharp increase of aviation fuel over the course of the last several months has hampered the ability of the leisure and weekend-pleasure flyer. At the time of this writing, 100LL is selling for approximately $4.66 a gallon and Jet-A is selling for $4.62 a gallon. Due to these prices, it is becoming more and more difficult to maintain and operate an aircraft. Not only is the cost of fuel volatile and rising, the ability to obtain 100LL in the next couple of years will decrease significantly. Based on findings and trends, current refineries that produce 100LL will decrease from an approximate level of 15 to roughly four over the course of the next several years. This decrease in refining capacity will not only increase the price, it will also become difficult to procure. While there is no panacea for these minor setbacks, they do provide a dilemma and obstacles for pilots to overcome in both the near- and long-term.

However, the recent growth in sport aviation, exemplified by smaller light-weight aircraft, is changing the concept of recreational flying. Sport aircraft typically take less upfront capital investment and operating costs. It is likely that this relatively new segment of general aviation has supplanted or, perhaps more likely, been substituted for the Cessna and Piper aircraft of earlier generations.

When combined, these changes have contributed to the slow-down in general aviation activity associated with personal, pleasure, and recreational flying. It would appear that this segment of the market has now achieved a leveling point. It is expected that personal and recreational flying will see limited growth in the future. This is reflected in the gradual growth predicted by most of the organizations involved in general aviation. The advancing age of the general aviation fleet does present a potential business opportunity within the personal and recreational flying segment in the future. The high average age of the general aviation fleet suggests there could be a substantial market for new general aviation aircraft if the manufacturers can bring new aircraft to market at reasonable prices. Aircraft replacement will become more of a necessity in the future. The question is whether viable replacement aircraft alternatives will be available.

FAA Aerospace Forecasts

Annually, the FAA publishes aerospace forecasts that summarize existing conditions and attempt to predict trends in aviation activity components. Each published forecast provides an analysis of previous aerospace forecasts and updates them in reference to the year's trends in aviation and economic activity. Many factors are considered in the FAA's development of aerospace forecasts. Some of the most important considerations are United States and international economic forecasts and anticipated trends in fuel costs. In general, the FAA's aerospace forecasts provide one of the most detailed evaluations of historic and forecast aviation trends. They provide the general framework for examining future levels of aviation activity for the nation, specific states and regions, and airports. Items monitored and forecast by the FAA on an annual basis include:

- Active pilots
- Active aircraft fleet
- Active hours flown

Historic and projected activity in each of these categories will be examined in the following sections. Data presented is based on the most recent available data, contained in *FAA Aerospace Forecasts, Fiscal years 2010-2030.*

Active Pilots

Active pilots are defined by the FAA as individuals who hold both a pilot certificate and a valid medical certificate. Table 2-3 summarizes historic and projected U.S. active pilots by certificate type.

Table 2-3
Historic and Projected U.S. Active Pilots by Certificate
Kerrville/Kerr County Airport - Louis Schreiner Field

Certificate Type	2000	2003	2005	2009[1]	2030[1]	% Annual Growth[2]
Student	93,064	87,296	87,213	72,280	86,050	0.8%
Recreational	340	310	278	234	235	0.0%
Sport Pilot[3]	N/A	N/A	N/A	3,248	14,100	7.2%
Private	251,561	241,045	228,619	211,619	219,050	0.2%
Commercial	121,858	123,990	120,614	125,738	139,100	0.5%
Airline Transport	141,596	143,504	141,992	144,600	162,900	0.6%
Rotorcraft	7,775	7,916	9,518	15,298	21,380	1.6%
Glider	9,387	20,950	21,369	21,268	21,960	0.2%
Instrument Rated[3]	311,944	315,413	311,500	323,495	375,900	0.5%
Total Pilots	**625,581**	**625,011**	**609,737**	**594,285**	**664,775**	**0.5%**

Source: FAA Aerospace Forecasts, Fiscal Years 2010-2030
[1]2009 and 2030 figures have been estimated and forecast by the FAA respectively
[2]Growth rate pertains to years 2009-2030
[3]Instrument rated pilots are not inclusive of overall total

As shown in **Table 2-2,** the FAA projects steady growth in the active pilot population through 2030. Total active pilots are projected to increase from approximately 594,285 in 2009 to approximately 664,775 by 2030, which represents an annual growth rate of approximately 0.5 percent. Through 2030, the following pilot types are projected to experience the greatest annual growth percentage: sport pilots (7.2 percent), rotorcraft pilots (1.6 percent), and student pilots (0.8 percent). During the timeframe from 2000 through 2009, the number of active private pilots declined approximately 0.6 percent annually. In the initial forecast years, this trend is expected to continue; however, in the out years, active private pilots are expected to rebound. It is important to recognize that instrument-rated pilots will continue to be a growing segment within the active pilot population through 2030 as a result of the increasing sophistication of today's aircraft and their avionics suites.

Table 2-4
Historic and Projected Active Aircraft
Kerrville/Kerr County Airport - Louis Schreiner Field

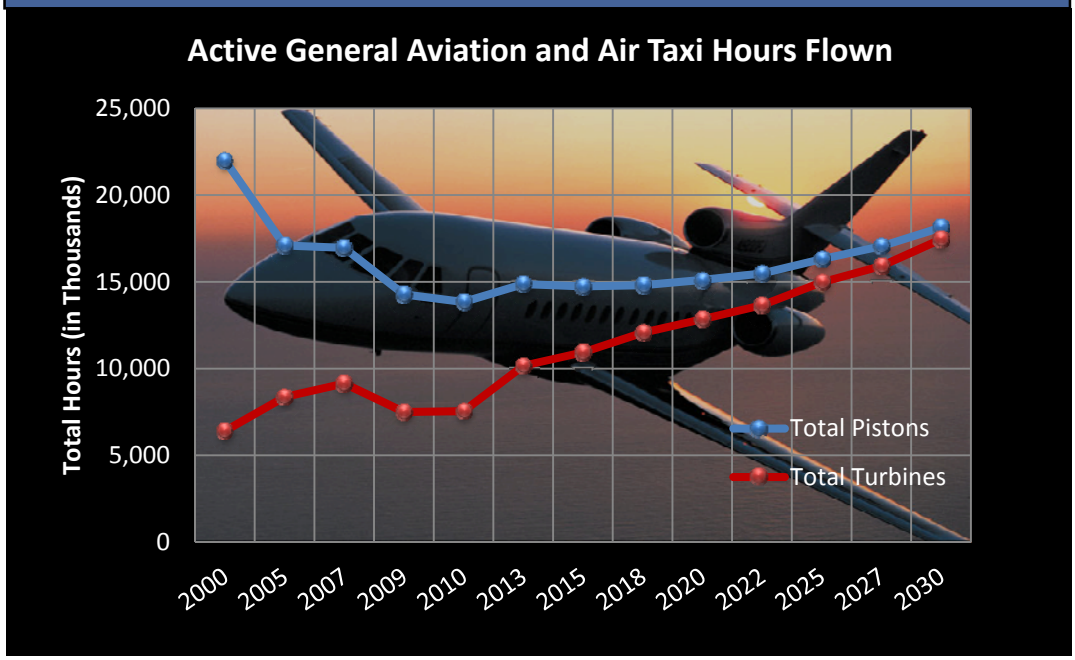
Aircraft Type	2000	2003	2005	2009[1]	2030[1]	% Annual Growth[2]
Single-engine Piston	149,422	143,265	148,101	144,745	150,646	0.2%
Multi-engine Piston	21,091	17,491	19,412	17,351	14,597	-0.8%
Turbo-prop	5,762	7,689	7,942	9,010	12,023	1.4%
Turbo-jet	7,001	7,997	9,823	11,418	27,035	4.2%
Rotorcraft	7,150	6,526	8,728	10,206	18,195	2.8%
Experimental	20,407	20,550	23,627	23,435	34,350	1.8%
Sport	N/A	N/A	N/A	7,311	16,311	3.9%
Other	6,700	6,088	6,459	5,673	5,565	-0.1%
Total Aircraft	**217,533**	**209,606**	**224,262**	**229,149**	**278,723**	**0.9%**

Source: FAA Aerospace Forecasts, Fiscal Years 2009-2025
[1]2009 and 2030 figures have been estimated and forecast by the FAA respectively
[2]Growth rate pertains to years 2009-2030

Active General Aviation Aircraft and Air Taxi Fleet

The FAA tracks the number of active general aviation aircraft in the United States fleet annually. An active aircraft is one that is currently registered and has flown at least one hour during the year. **Table 2-4** summarizes recent active general aviation aircraft trends along with FAA projections of active aircraft, by aircraft type.

Figure 2-5
Active General Aviation and Air Taxi Hours Flown
Kerrville/Kerr County Airport - Louis Schreiner Field



Source: FAA Aerospace Forecasts, Fiscal Years 2010-2030

As shown in Table 2-4 on page 2.9, total active aircraft are expected to increase at 0.9 percent annually. Jet and sport aircraft will experience the largest growth, while surprisingly rotorcraft is expected to experience more growth than turbo-props. Since 2003, the trend for active aircraft is witnessing an upturn when compared to the downturn between 2000 and 2003, which was a result of an economic downturn and attrition of older piston aircraft. However, the outlook for new aircraft in all categories is a positive sign that this important and necessary component of commerce and recreation is adapting and will continue to play an important role in society.

One of the most important trends identified by the FAA in these forecasts is the relatively strong growth anticipated in active general aviation jet aircraft. This trend illustrates a movement in the general aviation community toward higher-performing, more demanding aircraft. Growth in general aviation business jet aircraft is projected to significantly outpace growth in all other segments of the general aviation aircraft fleet through the forecast period. This will be influenced by the introduction of the very light jet category of aircraft and their relative affordability over existing platforms in the marketplace as well as the strong growth of the sport aircraft fleet.

Active Hours Flown

The FAA also uses hours flown as another measure to project general aviation activity. Hours flown in general aviation aircraft since 2000 have fluctuated for both piston and turbine aircraft. As turbine-type aircraft utilization was increasing, piston aircraft utilization was decreasing until 2007 when both segments declined until 2010. While both piston and turbine-type aircraft are expected to steadily increase for the next several years, turbine growth is expected to increase at a faster rate as evidenced by a 4.1 percent average annual growth versus a 1.1 percent average annual growth for pistons. **Figure 2-5,** *Active General Aviation and Air Taxi Hours Flown* depicts general aviation hours flown from 2000 through 2009 as well as projected hours to be flown through 2030.

As presented by the FAA, the annual growth in hours flown over the forecast period is approximately 2.5 percent. Compared to the projected average annual growth rate of the general aviation active fleet, approximately 0.9 percent, the projected increase indicates an anticipation of greater aircraft utilization. Hours flown by general aviation aircraft are estimated to reach approximately 38.8 million by 2030, compared to an estimated 22.9 million in 2010.

Summary of National General Aviation Trends

General aviation activity is cyclical in nature, which has been demonstrated by the historic data presented. Regardless of the rebounding of general aviation activity due to GARA during the mid and late-1990s, the terrorist attacks of 2001, the war on terror, and the economic downturn in our economy

have depressed general aviation activity over recent years. A slow to moderate recovery has begun with increasing aircraft deliveries and hours flown as well as the introduction of new innovative aircraft into the general aviation fleet. FAA projections of general aviation activity, including active pilots, active aircraft, and hours flown, all show promising growth through the forecast horizon of 2030. Following stalled growth, most components of general aviation activity are projected to rebound and surpass previous activity levels. An important national trend that has the potential to impact general aviation in Kerr County is the growing proportion of jet aircraft in the active general aviation fleet and the growing sophistication of both active pilots and aircraft. The introduction of the VLJs into the active general aviation fleet could prove to be a positive catalyst for growth in the entire market. The ability of Kerrville and the Kerr County region to accommodate the growing activity by general aviation and specifically business jet aircraft will be an important consideration.

Terminal Area Forecast

The Terminal Area Forecast (TAF) is a detailed FAA forecast-planning database that the FAA produces each year covering airports in the NPIAS. The TAF is prepared to assist the FAA in meeting its planning, budgeting, and staffing requirements. The TAF forecasts are made at the individual airport level and are based in part on the national FAA Aviation Forecast. The TAF contains historical and forecast data for enplanements, airport operations, instrument operations, and based aircraft. The data cover the 264 FAA and 239 contract-towered airports, 228 terminal radar approach control facilities, and 2,873 non-FAA airports as of 2009. Data in the TAF are presented on a U.S. Governmental fiscal year basis. The TAF assumes an unconstrained demand for aviation services.

As its primary input, the TAF uses the FAA Aerospace Forecasts from the specific year. Aviation activity forecasts for FAA-towered and federal contract-towered airports are developed using historical relationships between airport passenger demand and/or activity measures and local and national factors that influence aviation activity. Each estimate is examined for its reasonableness and consistency by comparisons with historical trends of airport activity. If forecasts deviate from their expected trend, the FAA uses other statistical techniques to reforecast the series. Other methods may include use of regression analysis and the use of growth rates developed separately from the TAF. The TAF may incorporate estimates prepared by local authorities and/or recent FAA-approved airport master plan forecasts, when FAA staff concludes that the methods used to develop these forecasts are acceptable.

The TAF summary report for each airport includes the following basic elements as appropriate:

- Passenger enplanements – air carrier, commuter, total
- Itinerant aircraft operations – air carrier, air taxi, general aviation, military, total
- Local aircraft operations – general aviation, military, total
- Total operations – itinerant plus local

- Total instrument operations
- Based general aviation aircraft

Coincidentally, the TAF report for Kerrville/Kerr County Airport - Louis Schreiner Field reflects an approximate growth rate of 2.6 percent for operations, which happens to be the same growth rate projected in the FAA Aerospace Forecasts (2.5 percent). Typically, these two forecasts are drastically different when compared to one another.

General Aviation Demand Forecasts

Forecast Methodologies

Development of aviation forecasts involves analytical and judgmental assumptions to realize the highest level of forecast confidence. The general aviation demand forecasts are developed in accordance with national trends and in context with the inventory findings, including local population and per capita income trends. The forecasts developed here begin with baseline information from 2009 and with 2015 as the first forecast year. National general aviation trends and forecasts, used to provide a baseline of growth rates, are provided by the *FAA Aerospace Forecasts, Fiscal Years 2010-2030.* These forecasts are unconstrained, indicating facilities will be developed as the need arises. The initial forecasts have been developed for all the general aviation activity (based aircraft, operations, fleet mix, and instrument approaches) at the Kerrville/Kerr County Airport – Louis Schreiner Field. The various forecast techniques used to develop a "preferred" set of general aviation forecasts for Kerrville/Kerr County Airport - Louis Schreiner Field are as follows:

Trend Analysis

Trend analysis is the simplest and most familiar form of forecasting and is also one of the most widely used. Historical data is collected and used to forecast an estimate of the aviation demand element into future years. An assumption of this forecast method is that historical levels for aviation demands will continue and influence similar linear progressions on the future demand levels. Though this assumption seems broad in its application, it can serve as a reliable benchmark against other forecast methods.

Regression Analysis

The forecasts of aviation demand, the dependent variable, are projected on the basis of one or more external indicators, the independent variables. Historical values for both the dependent and independent variables are analyzed to determine their relationships. Once defined, this relationship is used to project the dependent variable with a forecast or projection of the independent variable. In aviation forecasting, an example of the dependent variable includes based aircraft. Population or median household income levels are commonly used independent variables that aid in the projection of aviation growth.

Market Analysis

These aviation demand forecasts are developed based on a causal model technique in which independent variables statistically relate the relationship(s) between historical events and aviation demands. This forecast method typically uses an easily identifiable independent variable such as population, which has a high correlation on the indirect cause-and-effect relationship with certain segments of the general aviation industry. The market share often employs a static and dynamic variable relationship between community factors and general aviation trends that aids in predicting aviation growth based on forecast community indicators such as population.

Local Area Based Aircraft Forecast Factors/Assumptions

Based on information obtained in the inventory analysis and surveys, the following factors and assumptions have been incorporated into the general aviation forecasts of based aircraft and annual operations for Kerrville/ Kerr County Airport - Louis Schreiner Field:

- An "unconstrained" forecast of aviation demand assumes greater aircraft utilization resulting from airfield and terminal area improvements and/or development that would accommodate this increase in activity.
- Future operational levels are attributable to business needs, flight training and recreational interests. Future airport facilities will need to accommodate a broad array of general aviation aircraft and remain flexible to accommodate larger business-type aircraft.
- The growing popularity of fractional ownership of corporate jets by business owners, the design of more efficient single-engine aircraft, and the introduction of light sport aircraft and very light jets will all have a positive influence on the forecasts at Kerrville/Kerr County Airport - Louis Schreiner Field.
- The forecast of based aircraft and operational levels is tied to the potential for the airport to attract major employment to the area that may be aviation-related.

Forecast of Based Aircraft

The number of general aviation aircraft that can be expected to base at an airport facility is dependent on several factors, such as available facilities, airport operator services, airport proximity and access, etc. General aviation operators are particularly sensitive to both the quality and location of their basing facilities, with proximity of home and work often identified as the primary consideration in the selection of an aircraft-basing location. According to airport personnel, existing hangars are at capacity and consists of 166 aircraft (143 single-engine, five multi-engine, six turbo-props), three single-engine, and three multi-engine (six business jets), and six helicopters. Demand for aircraft hangar storage is strong as shown by the existing waiting list of 32 individuals.

Determination of the number and type of aircraft anticipated to be based at an airport is a vital component in developing the plan for the airport. Depending on the potential market and forecast, the airport will tailor the plan in response to anticipated demand. **Table 2-5** provides a summary of the forecasts for based aircraft anticipated at the airport over the 20-year planning period. The preferred forecast postulates an average annual growth rate of 2.0 percent, which is the average growth rate for both piston and turbine aircraft as reflected in the FAA Aerospace Forecasts, 2010-2030. In addition, the forecast is slightly increased due to the location of the airport in the county, the growth of northwest Bexar County, and little competition from surrounding airports with similar amenities.

Table 2-5
Summary of Based Aircraft Forecasts, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	FAA TAF	Linear Trend	Preferred
2009[1]	172	166	166
2015	198	208	187
2020	222	248	206
2025	247	289	228
2030	274	329	252

Source: Garver, FAA TAF – Terminal Area Forecasts
[1] Actual/Baseline - Airport Personnel

The mix of based aircraft for incremental periods throughout the planning period is illustrated in the following table, **Table 2-6,** General Aviation Based Aircraft Fleet Mix, 2009-2030. With an existing high percentage of single-engine aircraft based on the field, the percentage of turbine aircraft, particularly turbo-prop, are expected to increase as a part of the total based aircraft population. This is in line with overall trends in general aviation with aircraft being used more and more for business purposes.

Table 2-6
General Aviation Based Aircraft Fleet Mix, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Aircraft Type	2009[1]	2015	2020	2025	2030
Single-engine	143	159	176	193	208
Multi-engine	5	5	5	6	6
Turbo-prop[2]	6	8	9	11	15
Turbo-jet	6	8	9	11	15
Helicopter	6	7	7	7	8
Total	**166**	**187**	**206**	**228**	**252**

Source: Garver
[1] Actual/Baseline
[2] Includes three single-engine aircraft

Aircraft Operations Forecast

In developing the general aviation projections, several existing general aviation forecasts were reviewed. As presented in **Table 2-7,** *Summary of Aircraft Operations Forecasts, 2009-2030,* this assessment includes the FAA's Terminal Area Forecasts, which reflects a 2.6 percent average annual increase; the FAA Aerospace Forecast Fiscal Years, 2010-2030, which utilizes a 2.5 percent average annual increase for all sectors of general aviation; the *FAA Aerospace Forecast 2010-2030* for both piston and turbine aircraft, which equates to 4.1 percent; and a combination of the FAA Aerospace Forecasts 2010-2030 and the Kerr County growth rate for an average annual growth rate of 3.8 percent. Typically, operation levels correlate directly with population. The preferred operations forecast chosen for the airport is based on the combination growth rate of 3.3 percent provided by the *FAA Aerospace Forecasts 2010-2030* and Kerr County growth expectations. The standalone TAF and FAA Aerospace Forecasts, 2010-2030 are thought to be too similar and at the lower end of the projections while the average piston/turbine forecast appears to be the most optimistic of the forecasts.

Table 2-7
Summary of Aircraft Operations Forecasts, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	FAA TAF	FAA Growth Rate	FAA Piston/Turbine Average	Preferred
2009[1]	61,195	60,000	60,000	60,000
2015	70,274	69,582	76,358	72,910
2020	78,862	78,725	93,349	72,910
2025	88,499	89,070	114,120	100,860
2030	99,311	100,775	137,369	118,640

Source: Garver, FAA TAF – FAA APO Terminal Area Forecasts
[1] Actual/Baseline

Aircraft Fleet Mix Forecast

Table 2-8, *Summary of Operations by Aircraft Type, 2009-2030* on the next page displays the aircraft fleet mix operations forecast for the airport for each phase throughout the 20-year planning period. The operations forecast of aircraft mix is used to determine future airfield design, structural and material needs, and the configuration of terminal area facilities.

Military aircraft currently account for approximately 600 operations at the airport. Experience shows that most operations conducted by military aircraft are performed as unscheduled touch-and-go's for training purposes with the exception of those airports that have fueling agreements with the Department of Defense, allowing aircraft to make full stops and re-fuel. Based on the fact that the airport is within close proximity to major military installations in the area and due to a lack of definitive information showing a consistent operating schedule, this element of the forecast will remain constant throughout the planning period.

Total operations can be further broken down into categories and design groups. This additional breakdown helps to better define the types of aircraft that will operate at the airport in the future. It also allows for better planning of future facilities and airside needs for the airport and the ability to better justify such facilities when the market demands such construction. **Table 2-9,** *Fleet Mix Operations by Design Group, 2009-2030* displays this breakdown for the 20-year planning effort.

Local and Itinerant Operations

According to FAA Order 7210.3U, *Facility Operation and Administration, February 16, 2006,* a local operation is any operation performed by an aircraft that "remains in the local traffic pattern, performs a simulated instrument approach, or operates to or from the airport and a practice area within a 20-mile radius of the field or tower". An itinerant operation is any operation that is not considered local. According to airport personnel, 30 percent of the operations conducted at the airport are local and 70 percent are itinerant. It is expected this percentage will fluctuate slightly. It is assumed that the airport will accommodate more training operations over the planning period, increasing the local portion to 35 percent and the itinerant portion to 65 percent. **Table 2-10,** *Summary of Local and Itinerant Operations, 2009-2030* on page 2.16 provides a summary of this information.

Table 2-8
Summary of Operations by Aircraft Type, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Operations by Type	2009[1]	2015	2020	2025	2030
General Aviation	60,600	72.900	85,800	102,920	118,640
Single-Engine	24,000	28,800	33,440	38,830	45,090
Multi-Engine	9,000	10,570	12,110	13,600	15,420
Turbo-Prop	9,000	11,300	13,720	16,640	20,170
Turbo-Jet	15,000	18,590	22,300	26,730	32,030
Helicopter	3,000	3,650	4,200	5,100	5,930
Military	600	600	600	600	600
Total	**60,600**	**73,500**	**86,400**	**103,500**	**119,240**

Source: Garver
[1] Actual/Baseline

Table 2-9
Fleet Mix Operations by Design Group, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Aircraft Approach Category	2009[1]	2015	2020	2025	2030
Category A (Less than 91 knots)	39,600	45,400	53,200	61,750	70,640
Category B (92-120 knots)	15,000	19,400	22,210	27,700	31,600
Category C (121-140 knots)	1,500	2,800	3,800	5,800	7,800
Category D (141-166 knots)	900	1,700	2,300	2,550	2,800
Airplane Design Group					
Group 1 (Less than 49')	48,300	55,400	64,000	76,800	89,500
Group II (49' to 78')	8,700	13,900	17,600	21,000	23,240
Helicopter	3,000	3,600	4,200	5,100	5,900
Military	600	600	600	600	600
Total	**60,600**	**73,500**	**86,400**	**103,500**	**119,240**

Source: Garver
[1] Actual/Baseline
Aircraft Approach Category is based on 1.3 times the stall speed of the aircraft at the maximum certified landing weight in the landing configuration. Representative of the anticipated operations for each aircraft approach category and airplane design group.

Peak Period Forecasts

An additional element in assessing airport use and determining various capacity and demand considerations is to ascertain peak-period activities. Due to a lack of accurate air traffic records or other reliable sources of information, FAA statistics and assumptions from airports with similar activity and operational characteristics have been applied, which include 10 percent of annual operations occurring in the peak month, a 31-day peak month, and peak-hour operations that occur on the average day of the peak month approximately 15 percent of the time. **Table 2-11,** *Summary of Peak-Period Operations, 2009-2030* provides the peak-period forecasts for the 20-year planning period.

Annual Instrument Approach Forecast

Table 2-12 on the next page, *Annual Instrument Approach Forecasts,* 2009-2030, summarizes the forecast of annual civilian instrument approaches at the Kerrville/Kerr County Airport - Louis Schreiner Field throughout the planning period. The forecast of annual instrument approaches (AIAs) provides further guidance in determining requirements for the type, extent, and timing of future navigational (NAVAID) equipment. These figures are strictly for IFR instrument meteorological conditions (IMC),

which according to weather data occurs 6.8 percent of the time during the 10-year data profile. IMC conditions exist whenever the cloud ceiling is at or below 1,000 feet and/or visibility is lower than 3 miles. If instrument approaches are calculated for marginal visual flight rules (MVFR) conditions, the monthly potential instrument approaches to Kerrville/Kerr County Airport - Louis Schreiner Field would nearly double. MVFR weather conditions occur whenever the cloud ceiling is lower than 3,000 feet and/or the visibility is less than 5 miles.

Table 2-10
Summary of Local and Itinerant Operations, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	2009[1]	2015	2020	2025	2030
Local Operations	18,180	22,970	28,100	33,500	41,740
Itinerant Operations	42,420	50,530	58,300	70,000	77,500
Total	**60,600**	**73,500**	**86,400**	**103,500**	**119,240**

Source: Garver
[1] Actual/Baseline

Table 2-11
Summary of Peak-Period Operations, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	Annual	Peak Month	Avg. Day of Peak Month	Percent of Busy Day Ops in Peak Hour	Peak Hour
2009[1]	60,600	6,060	195	15%	29
2015	73,500	7,351	237	15%	36
2020	86,400	8,636	279	15%	42
2025	103,500	10,146	327	15%	49
2030	119,240	11,924	385	15%	58

Source: Garver. Methodology from FAA AC 150/5070-6B, Airport Master Plans and FAA AC 150/5060-5, Airport Capacity and Delay
[1] Actual/Baseline

Table 2-12
Annual Instrument Approach Forecasts, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Category	2009[1]	2015	2020	2025	2030
Itinerant Operations					
Operations	42,420	50,540	58,295	69,214	77,503
% IFR Rated Pilots	52.9%	53.4%	53.5%	53.4%	53.6%
Estimated Instrument Approach Operations	1,526	1,835	2,121	2,441	2,830
Local Operations					
Operations	18,180	22,970	28,065	32,246	41,737
% IFR Rated Pilots	52.9%	53.4%	53.5%	53.4%	53.6%
Estimated Instrument Approach Operations	654	834	1,021	1,244	1,524
Total Annual Instrument Approaches	**2,180**	**2,669**	**3,142**	**3,685**	**4,354**

Source: Garver
[1] Actual/Baseline

Critical Aircraft

The "critical" aircraft at the airport is the largest aircraft conducting at least 500 itinerant operations per year. Determining the critical aircraft is important for assessing airport design and layout and the structural and equipment needs for both the airfield and terminal area. It is evaluated with respect to size, speed, and weight. These aircraft range in size from small to medium and consist of Beech King Air's to various Cessna/Falcon business jet platforms to everything in between. Based on these type and group of aircraft utilizing the airport, the existing "critical" aircraft at the Kerrville/Kerr County Airport - Louis Schreiner Field is in the Airport Reference Code (ARC) C-II category. This category primarily includes aircraft that typically weigh in excess of 12,500 pounds with some weighing as much as 60,000 pounds. At certain times of the year, these aircraft may be hindered from operating at the airfield at their maximum takeoff weight when temperatures exceed 95° F, and the destination is greater than 500 nautical miles from the airport.

Based jet aircraft at the airport include a Cessna Citation X, Cessna Citation 550, Cessna Citation III, Cessna Citation I, Beechcraft Hawker 850, and an Eclipse VLJ. In addition to these based aircraft, the airport accommodates aircraft on a frequent basis from Bombardier Challenger 300, 601, and 603 and Gulfstream IV/V aircraft. Most of these aircraft affiliated with either NetJets or other fractional ownership companies. Based on this information, the most demanding aircraft currently using the Kerrville/Kerr County Airport - Louis Schreiner Field fall within the ARC C-II design category. According to airport management, this type of representative category of aircraft uses the airport on a regular basis and is expected to remain steady operationally during each of the planning phases.

Source: Garver, Aviation Database

Forecast Summary

The various forecast elements are displayed in **Table 2-13,** *Aviation Forecast Summary, 2009-2030.* The forecasts, combined with the inventory data, will be used to identify and develop the facility requirements and the need for improved general aviation facilities to serve the Kerrville/Kerr County Airport - Louis Schreiner Field. The next chapter, Facility Requirements, identifies the types and extent of facilities needed to adequately accommodate the demand levels identified in this chapter.

Table 2-13
Aviation Forecast Summary, 2009-2030
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	2009[1]	2015	2020	2025	2030
Based Aircraft By Type					
Single-Engine	143	159	176	193	208
Multi-Engine	5	5	5	6	6
Turbo-Prop	6	8	9	11	15
Turbo-Jet	6	8	9	11	15
Helicopter	6	7	7	7	8
Total Based Aircraft	**166**	**187**	**206**	**228**	**252**
Operations					
General Aviation	**60,600**	**72.910**	**85,760**	**100,860**	**118,640**
Single-Engine	24,000	28,800	33,440	38,830	45,090
Multi-Engine	9,000	10,570	12,010	13,620	15,420
Turbo-Prop	9,000	11,300	13,720	16,640	20,170
Turbo-Jet	15,000	18,590	22,300	26,730	32,030
Helicopter	3,000	3,650	4,290	5,040	5,930
Military	**600**	**600**	**600**	**600**	**600**
Local Operations	18,180	22,970	28,065	32,246	41,737
Itinerant Operations	42,420	50,540	58,295	69,214	77,503
Total	**60,600**	**73,510**	**86,360**	**101,460**	**119,240**

Source: Garver
[1] Actual/Baseline

Chapter Three: Airport Facility Requirements

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LOUIS SCHREINER FIELD

Chapter 3: Airport Facility Requirements

Airfield facility components include runways, taxiways, NAVAIDs, airfield marking/ signage, and lighting, while terminal area components are comprised of hangars, terminal building, aircraft parking apron, fuel dispensing units, automobile parking, and airport access requirements.

Introduction

This chapter identifies the long-range requirements used to determine the facilities needed to meet the forecast demand as planned in accordance with FAA airport design standards and airspace criteria. Identification of a needed facility does not necessarily constitute a "requirement" in terms of design standards, but an "option" for facility improvements to accommodate future aviation activity. However, market demand will ultimately drive the requirements for construction and development at the airport.

Airfield facility components include runways, taxiways, NAVAIDs, airfield marking/ signage, and lighting, while terminal area components are comprised of hangars, terminal building, aircraft parking apron, fuel dispensing units, automobile parking, and airport access requirements.

Airport Reference Code (ARC) Classification

As previously mentioned in the Inventory Chapter, the Airport Reference Code (ARC) for an airport, as described in FAA advisory circular AC 150/5300-13, Airport Design, is a coding system to help identify and determine the appropriate design criteria for each individual airport. This ARC correlates the design and layout of an airport to the operational and physical characteristics of the critical / design aircraft. The ARC directly influences pertinent safety criteria such as runway length, runway width, runway/taxiway separation distances, building setbacks and safety area dimensions. The ARC has two (2) components.

The first component, depicted by a letter (e.g., A, B, C, D, or E), is the aircraft approach category and relates to aircraft approach speed based on operational characteristics. The second component, depicted by a Roman numeral (e.g., I, II, III, IV, V, or VI), is the aircraft design group and relates to aircraft wingspan or tail height. For example, a Beechcraft King Air 200, with an approach speed of 103 knots and wingspan of 54.5 feet would have an ARC of B-II, while a larger corporate jet such as the Gulfstream IV (G-IV) exhibiting an approach speed of 145 knots and wingspan of 77.8 feet, would have an ARC of D-II. **Table 3-1,** *Airport Reference Code,* illustrates the components comprising the ARC.

Table 3-1
Airport Reference Code
Kerrville/Kerr County Airport - Louis Schreiner Field

Aircraft Approach Category (knots)	
Category	**Speed**
A	< 91
B	91 - < 121
C	121 - <141
D	141 - < 166
E	> 166

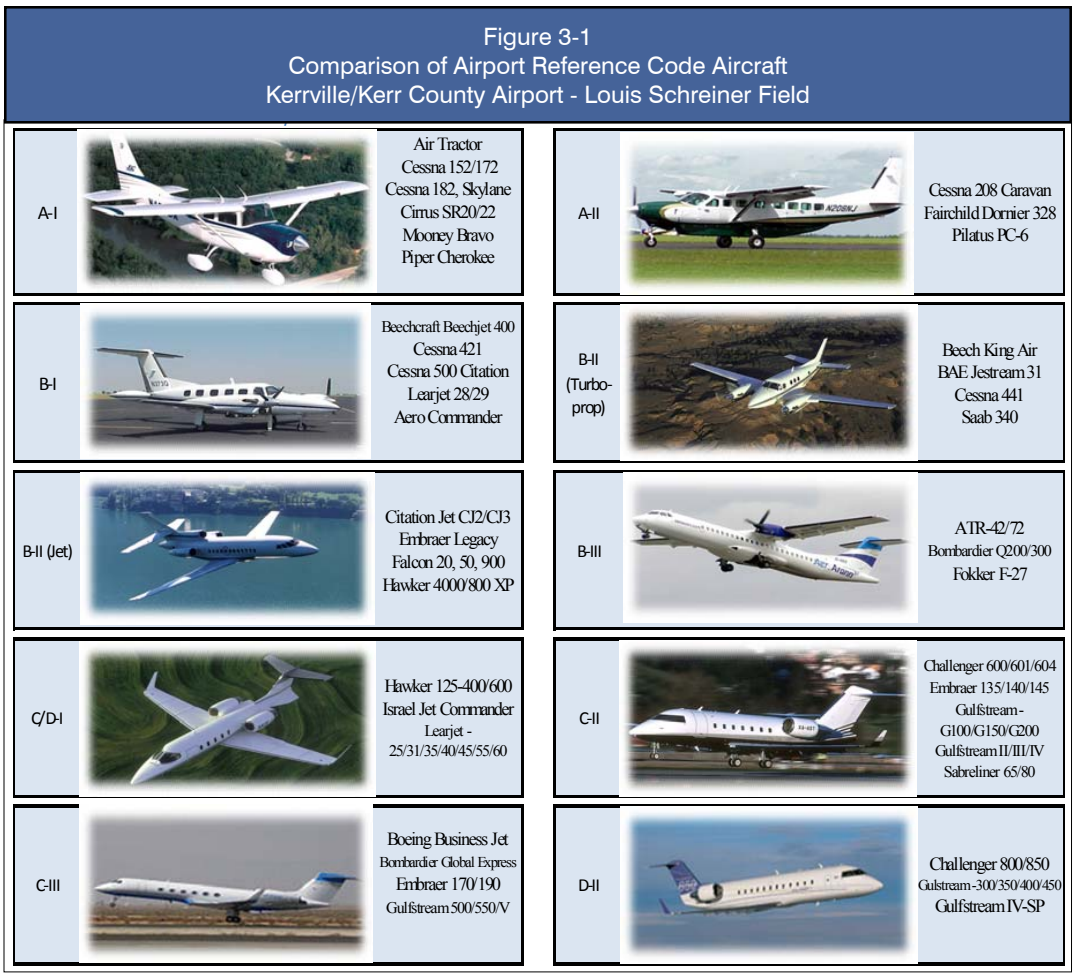
Airplane Design Group[1]		
Group	**Tail Height (feet)**	**Wingspan (feet)**
I	< 20	< 49
II	20 - <30	49 - < 79
III	30 - <45	79 - <118
IV	45 - <60	118 - <171
V	60 - <66	171 - <214
VI	66 - <80	214 - <262

Source: FAA Advisory Circular 150/5300-13 Change 17, Airport Design.

[1] Where an airplane is in two categories, the most demanding category takes precidence.

As is the case with Kerrville/ Kerr County Airport – Louis Schreiner Field, when two or more runways are operational and built to accommodate a specific class of aircraft, the most restrictive reference code is applied to the airport as a whole. Presently, Runway 3/21 is classified as B-I, small aircraft only and Runway 12/30 is classified as C-II; thus, the airport is an ARC C-II facility. Currently, TXDOT, Aviation Division classifies the airport as a Business Corporate airport with a current and future ARC of C-II, which is consistent with the information provided on the latest approved Airport Layout Plan (ALP) completed in 2003. A review of the existing airport configuration and setbacks/safety areas confirms that ARC C-II is the current designation for the airport. A breakdown and comparison of ARC's and similar type aircraft can be seen in the following illustration, **Figure 3-1,** *Comparison of Airport Reference Code Aircraft.*

Figure 3-1
Comparison of Airport Reference Code Aircraft
Kerrville/Kerr County Airport - Louis Schreiner Field



Runway Length Requirements

FAA AC150/5325-4B, *Runway Length Requirements,* provides guidance to help determine the most appropriate recommended runway lengths for an airport, which is predicated upon the category of aircraft using the airport. By design, the primary runway typically has the longest runway, the most favorable wind conditions, the greatest pavement strength, and the lowest straight-in instrument approach minimums.

Runway 12/30 meets the length requirements for 75 percent of the large general aviation fleet (12,500 pounds to 60,000 pounds) at 60 percent useful load; however, it is deficient for 75% of the this fleet at 90% useful load by 1,340' and 100% of the fleet at both 60% and 90% useful loads by 390' and 3,550' respectively. Any future runway lengthening to accommodate the larger categories of aircraft will require justification and approval through TXDOT before any funding assistance is granted.

A significant factor to consider when analyzing the generalized runway length requirements is that the actual length necessary for a runway is a function of elevation, temperature, and stage length. As temperatures change, the runway length requirements change accordingly. Thus, if a runway is designed to accommodate 75% of the fleet at 60% useful load, this does not prevent larger aircraft at certain times and during specific conditions from utilizing the runway. However, the amount of time such operations can safely occur is restricted.

These design runway lengths do not absolve the pilot from calculating the specific runway length needed to conduct a safe take-off or landing for the specific aircraft being operated during current weather conditions.

As can be seen, Runway 03/21, 3,592' x 60', provides a satisfactory length and width for up to 75% of the small aircraft fleet with less than 10 seats but is 118' deficient in accommodating 95% of the fleet, 768' deficient in accommodating 100% of the fleet, and 1,078' deficient in accommodating the small aircraft fleet with 10 seats or more.

Table 3-2
Runway Length Requirements - Runway 12/30
Kerrville/Kerr County Airport - Louis Schreiner Field

Aircraft Category	Length (Dry Pavement)	Length (Wet Pavement)	Deficiency
Small aircraft with less than 10 seats			
75% of small aircraft fleet	3,110'	3,110'	0'
95% of small aircraft fleet	3,710'	3,710'	0'
100% of small aircraft fleet	4,360'	4,360'	0'
Small aircraft with 10 or more seats	4,670'	4,670'	0'
Aircraft between 12,500 and 60,000 pounds			
75% of fleet at 60% useful load	5,180'	5,500'	0'
75% of fleet at 90% useful load	7,340'	7,340'	1,340'
100% of fleet at 60% useful load	6,390'	6,390'	390'
100% of fleet at 90% useful load	9,550'	9,550'	3,550'
Aircraft more than 60,000 pounds[1]	5,500'	5,500'	0'

Source: AC 150/5325-4B, Runway Length Requirements for Airport Design, Figures 3-1 and 3-2
Generalized length only. Actual lengths should be calculated based on the specific aircraft's operational nomographs. Useful load refers to all usable fuel, passengers, and cargo.
Calculations based on 1,002' airport elevation, mean maximum daily temperature of 91˚ and maximum difference in runway end elevation of 10.7'.
Figures are increased 10 feet for each foot of elevation difference between high and low points of runway centerline.
[1] By regulation, the length for turbo-jet powered airplanes is increased 15% up to 5,500', whichever is less for 60% useful loads and 15% up to 7,000', whichever is less for 90% useful loads.

Airfield Capacity Analysis

The FAA's standard method for determining airport capacity and delay for long-range planning purposes can be found in Advisory Circular (AC) 150/5060-5, Airport Capacity and Delay. For this portion of the analysis, generalized airfield capacity was calculated in terms of: 1) hourly capacity of runways and 2) annual service volume (ASV). This approach utilizes the projections of annual operations by the proposed fleet mix as projected in the Forecast Chapter while considering a variety of other factors that are described below.

Table 3-3
Runway Length Requirements - Runway 3/21
Kerrville/Kerr County Airport - Louis Schreiner Field

Aircraft Category	Length (Dry Pavement)	Length (Wet Pavement)	Deficiency
Small aircraft with less than 10 seats			
75% of small aircraft fleet	3,110'	3,110'	0'
95% of small aircraft fleet	3,710'	3,710'	118'
100% of small aircraft fleet	4,360'	4,360'	768'
Small aircraft with 10 or more seats	4,670'	4,670'	1,078'

Source: AC 150/5325-4B, Runway Length Requirements for Airport Design, Figures 3-1 and 3-2.
Generalized length only. Actual lengths should be calculated based on the specific aircraft's operational nomographs. Useful load refers to all usable fuel, passengers, and cargo.
Calculations based on 1,002'airport elevation, mean maximum daily temperature of 91˚ and maximum difference in runway end elevation of 10.7'.
Figures are increased 10 feet for each foot of elevation difference between high and low points of runway centerline.
[1] By regulation, the length for turbo-jet powered airplanes is increased 15% up to 5,500', whichever is less for 60% useful loads and 15% up to 7,000', whichever is less for 90% useful loads.

As previously mentioned in the Inventory Chapter, the primary runway, Runway 12/30, has a northwest/southeast alignment, while the crosswind runway, Runway 3/21, exhibits a northeast/ southwest alignment. The runways do not intersect and are canted approximately 90˚ from one another.

Airfield Characteristics

In addition to the aviation activity forecasts, a number of the airport's characteristics and operational conditions are required in order to properly conduct the FAA capacity analysis. These elements affecting airfield capacity include:

- Runway Configuration,
- Aircraft Mix Index,
- Taxiway Configuration,
- Operational Characteristics, and
- Meteorological Conditions.

When analyzed collectively, the above elements provide the basis for establishing the generalized operational capacity of an airport as expressed by Annual Service Volume. The following sections evaluate each of these characteristics with respect to Kerrville/Kerr County Airport – Louis Schreiner Field.

Runway Configuration

The runway configuration is one of the primary factors that determine airfield capacity. The capacity of a two or more runway system is substantially higher than an airport with a single runway. If runways intersect, the capacity is generally not as great as in a parallel runway layout because operations on the second runway are not possible until the aircraft on the first runway has cleared the intersection point.

Aircraft Mix Index

The operational fleet at an airport influences an airfield's capacity based upon differing aircraft requirements. Various operational separations are set by the FAA for a number of safety reasons. An airfield's capacity is the time needed for the aircraft to clear the runway either on arrival or departure. As aircraft size and weight increases, so does the time needed for it to slow to a safe taxing speed or to achieve the needed speed for takeoff. Thus, a larger aircraft generally requires more runway occupancy time than a smaller aircraft. As additional larger aircraft enter an airport's operating fleet, the lower the capacity will likely be for that airport.

There are four categories of aircraft used for capacity determinations under the FAA criteria. These classifications are based upon the maximum certificated takeoff weight, the number of engines, and wake turbulence classifications. The aircraft indexes and characteristics are shown in the following table, **Table 3-4,** *Aircraft Classifications,* and the following figure, **Figure 3-1,** *Cross Section of Aircraft Classifications*.

Table 3-4
Aircraft Classifications
Kerrville/Kerr County Airport - Louis Schreiner Field

Aircraft Class	Maximum Certificated Takeoff Weight (lbs)	Number of Engines	Wake Turbulence Classification[1]
A and B	Under 12,500	Single-/Multi-	Small
C	12,500 - 300,000	Multi-	Large
D	Over 300,000	Multi	Heavy

Source: FAA Advisory Circular 150/5360-5, Change 2, Airport Capacity and Delay.

[1] Wake turbulence classifications as defined by the FAA, Small – Aircraft of 41,000 lbs. maximum certificated takeoff; Large – Aircraft more than 41,000 lbs. certificated takeoff weight, up to 255,000 lbs: Heavy – Aircraft capable of takeoff weights of more than 255,000 lbs whether or not they are operating at this weight during any particular phase of flight.

These classifications are used to determine the mix index, which is required to calculate the theoretical capacity of an airfield. The mix index is defined at the percent of Class C aircraft plus three (3) times the percent of Class D aircraft, reflected as a percentage (C+3D). The percent of A and B class aircraft do not count towards the calculation of mix index due to the quick dissipation of turbulence produced by this aircraft category. Using the FAA formula, the aircraft mix for the Kerrville/Kerr County Airport will be 20 by the end of the planning effort.

Taxiway Configuration

The distance an aircraft has to travel to an exit taxiway after landing also sets limits on the airfield capacity. As mentioned earlier, larger aircraft require more distance to slow to a safe speed before exiting the runway. Thus, they require greater runway occupancy times. If taxiways are placed at the approximate location where the aircraft would reach safe taxiing speed, the aircraft can exit and clear the runway for another user. However, if the taxiway is spaced either too close or too far from the touchdown zone, the aircraft will likely spend more time on the runway than if the taxiway had been in the optimal location. The optimal location for exit taxiways is in a range from 2,000 feet to 4,000 feet from the landing threshold with each exit separated by at least 750 feet.

Based on the FAA criteria, the exit factor within the formula is maximized when a runway has four exit taxiways within the optimal range. As previously mentioned, both runways have full-length parallel taxiways. Three exit/connector taxiways are associated with Runway 3/21 and there are seven exit/connector taxiways associated with Runway 12/30. However, when construction of the new parallel for Runway 12/30 is complete, there will only be four exit/connector taxiways.

Airfield Operational Characteristics

Operational characteristics that can affect an airfield's overall capacity include the percent of aircraft arrivals and the percent of touch-and-go operations.

Percent of Aircraft Arrivals

The percent of aircraft arrivals is the ratio of landing operations to the total operations for the airport. This percent is considered due to the fact that aircraft approaching an airport for landing require more runway occupancy time than an aircraft departing the airfield. The FAA methodology used provides for computing airfield capacity with a 40 percent, 50 percent, or 60 percent of arrivals. For a general aviation airport such as Kerrville/Kerr County Airport, the percent of arrivals is not typically a significant factor and for purposes of calculations, the 50 percent of arrivals factor was used.

Percent of Touch-and-Go Operations

The percent of touch-and-go operations plays a critical role in determination of airport capacity. Touch-and-go operations are typically associated with flight training activity. As mentioned earlier, the level of touch-and-go operations is approximately 30 percent of the total operations. While it is expected that touch-and-go operations will slightly increase over the next 20-year period, a majority of the operations are expected to be conducted by itinerant aircraft.

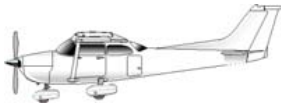
Meteorological Conditions

Aircraft operating parameters are dependent upon the weather conditions, such as cloud ceiling height and visibility range. As weather conditions deteriorate, pilots must rely on instruments to define their position both vertically and horizontally. Capacity is lowered during such conditions because the FAA requires aircraft separation increases for safety. Additionally, some airports may have limitations with regards to their instrument approach capability which also impacts capacity during inclement weather. The FAA defines three (3) general weather categories, based upon the cloud ceiling heights and visibility.

- Visual Flight Rules (VFR): Cloud ceiling is greater than 1,000' above ground level (AGL) and the visibility is at least three statute miles;
- Instrument Flight Rules (IFR): Cloud ceiling is at least 500' AGL but less than 1,000' AGL and/or the visibility is at least one statute mile but less than three (3) statute miles; and

Figure 3-2
Cross Section of Aircraft Classifications
Kerrville/Kerr County Airport - Louis Schreiner Field

Class A and B – 12,500 lbs. or less (Single-/Multi-Engine)



Cessna 172 (Skyhawk)

Beechcraft A36 (Bonanza)

Beechcraft 58TC (Baron)

Cessna 421C (Golden Eagle)

Cessna Citation II

Beechcraft King Air B300

Class C – Large aircraft, 12,500 lbs. to 300,000 lbs.

Gulfstream V

Embraer 120 (Brasilia)

Saab 340

MD-80

Boeing 737

Boeing 757

Class D – Heavy aircraft, More than 300,000 lbs.

Airbus A340-200

MD-11

Boeing 777-200

Boeing 747-400

Source: Dr. Antonio Trani, Department of Civil Engineering, Virginia Tech University.

- Poor Visibility and Ceiling (PVC): Cloud ceiling is less than 500' AGL and/or the visibility is less than one statute mile.

As stated earlier, the airport observes VFR conditions approximately 92.5% of the time, IFR conditions approximately 6.8% of the time, and PVC conditions approximately 0.7% of the time.

Table 3-5
Hourly Capacity
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	VFR Operations	IFR Operations	Weighted Hourly Capacity
2009[1]	98	59	67
2020	97	59	66
2030	96	59	64

Source: FAA Advisory Circular 150/5360-5, 150/5360-5, Change 2, Airport Capacity and Delay.
[1] Baseline

Table 3-6
Annual Service Volume (ASV)
Kerrville/Kerr County Airport - Louis Schreiner Field

Year	Annual Operations	Design Hour Operations	Annual Service Volume (ASV)	FAA Maximum Annual Service Volume (ASV)	Capacity Level
2009[1]	60,600	29	139,889	230,000	60%
2015	73,510	36	140,466	230,000	61%
2020	86,360	42	137,649	230,000	59%
2025	101,460	49	138,614	230,000	60%
2030	119,240	58	142,309	230,000	62%

Source: FAA Advisory Circular 150/5360-5, 150/5360-5, Change 2, Airport Capacity and Delay.
[1] Baseline

Hourly Capacity of Runways

Hourly capacity of a runway measures the maximum number of aircraft operations that can be accommodated by an airport's runway configuration in one hour. This capacity is calculated by analyzing the appropriate series of graphs and tables for VFR and IFR conditions within FAA (AC) 150/5060-5. From these figures, the hourly capacity is calculated by multiplying the hourly capacity base, the touch-and-go factor, and the exit factor together. The equation for this formula is:

Hourly Capacity = C* x T x E

Where: C* = hourly capacity base
T = touch-and-go factor
E = exit factor

The airport's calculated hourly capacity can be seen in the following table, **Table 3-5,** *Hourly Capacity.*

Annual Service Volume

Under the FAA methodology, the most important value that must be computed to evaluate the capacity at an airport is the annual service volume (ASV). ASV represents a measure of the approximate number of total operations that an airport can support annually. Using the FAA's methodology to estimate ASV, the ratio of annual operations to average daily operations, during the peak month, must first be calculated along with the ratio of average daily operations to average peak hour operations, during the peak month. These values are then multiplied together resulting in a product to be multiplied by the weighted hourly capacity. The equation used to calculate ASV is:

Annual Service Volume = Cw x D x H

Where: Cw = weighted hourly capacity
D = ratio of annual operations to average daily operations during the peak month
H = ratio of average daily operations to average peak hour operations during the peak month

The airport's ASV, as calculated based on the method above, can be seen **Table 3-6,** *Annual Service Volume (ASV).*

Road. In an effort to retain the current usable runway length, it is recommended the airport implement declared distances, which will be discussed in more depth in the following chapter as a remedy for the deficiency in safety area. The following figure, **Figure 3-3,** graphically illustrates the existing deficiency.

The RSA for Runway 3/21 meets all the required design criteria and is contained within airport property.

Airfield Design Standards

Compliance with airport design standards is required to maintain a minimum level of operational safety. The major airport design elements, as follows, are established from FAA Advisory Circular 150/5300-13, Change 17, *Airport Design and Federal Aviation Regulations* (FAR) Part 77, *Objects Affecting Navigable Airspace,* and should conform with FAA airport design criteria without modification to standards.

Runway Safety Area (RSA)

The RSA is a two-dimensional area surrounding and extending beyond the runway and taxiway centerlines. This safety area is provided to reduce the risk of damage to airplanes in the event of undershoot, overshoot, or excursion from the runway. In addition, it must be cleared and free of objects except those required for air navigation and graded to transverse and longitudinal standards to prevent water accumulation, as consistent with local drainage requirements. Under dry conditions, the RSA must support emergency equipment and aircraft without causing structural damage or injury to the occupants. The airport must own the entire RSA in "fee simple" title. Based on FAA design standards, the RSA should extend beyond the end of the runway for 1,000 feet for C-II runways. Currently, the RSA length beyond the Runway 12 end is deficient 700 feet due to the position of the localizer (currently on non-frangible mounted posts) 300 feet off the end of pavement, State Highway 27, the airport perimeter fence, and localizer shack, while the Runway 30 end meets standards, as a result of the relocation of the Airport Entrance

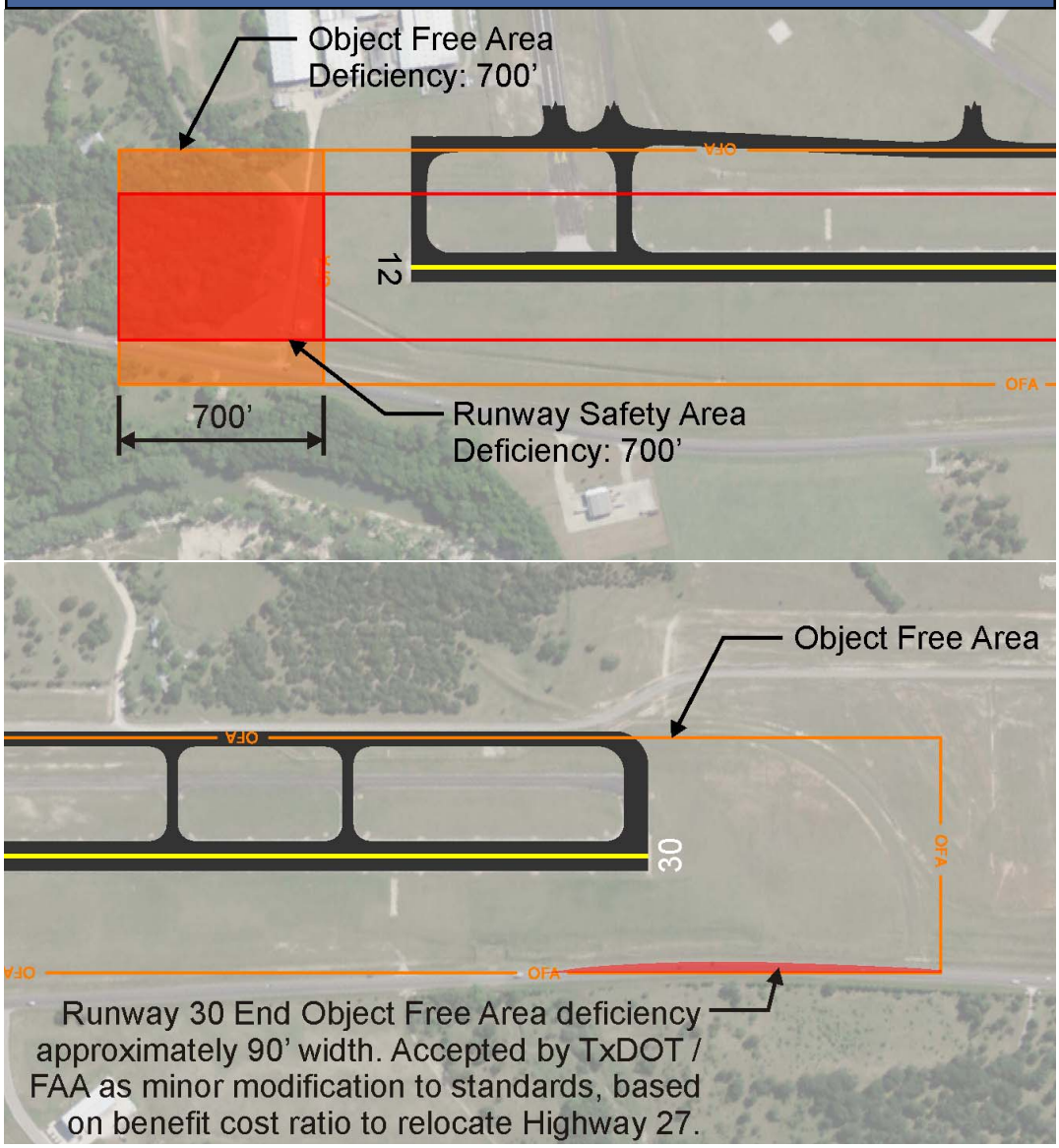
Object Free Area (OFA)

The OFA is a two-dimensional area surrounding runways, taxiways and taxilanes. It must remain clear of objects except those used for air navigation or aircraft ground maneuvering purposes, and requires clearing of above-ground objects protruding higher than the runway edge elevation at an adjacent point within the OFA. An object is considered any ground structure, navigational aid, people, equipment, terrain or parked aircraft. The airport must own the entire OFA in "fee simple" title. Currently, with ARC C-II standards for Runway 12/30, the airport has a 90 foot deficiency in accommodating the full width of the 800' requirement and a 700 foot deficiency in accommodating the required 1,000 foot length beyond the runway end. The 90 foot width deficiency is a result of the location of State Highway 27. Because this highway is fixed by function and would incur high costs to relocate, the OFA width will be shown as a non-standard condition. Discussions with TXDOT have confirmed that the Aviation Division is aware the OFA is non-standard and will remain so for the foreseeable future.

Because the OFA length beyond the runway end is the same distance as the RSA – 1,000 feet – the existing OFA length beyond the Runway 12 end is deficient by 700 feet due to the position of the localizer. Similar to the RSA, the proposed remedy is implementation of declared distances which is shown in the following figure, **Figure 3-3**.

The OFA for Runway 3/21 meets all the design criteria and is contained within the confines of airport property.

Figure 3-3
RSA/OFA Deficiencies
Kerrville/Kerr County Airport - Louis Schreiner Field



Obstacle Free Zone (OFZ)

The OFZ is airspace above a surface centered on the runway centerline, and precludes taxiing and parked airplanes and object penetrations except for frangible post mounted NAVAIDs expressly located in the OFZ by function. Due to the facilities required, only the Runway OFZ is applicable. The length of the OFZ is fixed at 200 feet beyond the associated runway end, but the width is dependent upon the reference code and visibility minimums the runway exhibits. The OFZ's at the airport are in compliance for the group of aircraft operating at the field and the specific design length and width for each runway.

Building Restriction Line (BRL)

The BRL represents the boundary that separates the airside and landside facilities and identifies suitable building area locations based on airspace and visibility criteria. The BRL, recommended to provide a 35.0-foot minimum clearance, is established with reference to the FAR Part 77 primary and transitional surfaces, as well as the airfield safety areas. Based on the activity at the field, instrument approach types, and runway ARC designation, the BRL should be at 495' from the runway centerline to provide the prescribed 35' clearance for Runway 12/30 and 370' to provide the prescribed 35' of clearance for Runway 3/21. As such, the lower the height of the building, the less distance there is between the runway centerline and placement of existing or proposed facilities. Thus, a 25' building height would only require a separation distance of 425' for Runway 12/30 and 300' for Runway 3/21.

If a precision approach is considered for Runway 12/30 the BRL increases to 745 feet. This will need to be considered for future development along the primary runway at the airport.

Runway Approach Surface

The approach surface is a three-dimensional trapezoidal FAR Part 77 imaginary surface extending beyond each runway end and has a defined slope requiring clearance over structures and objects beyond the runway threshold. The purpose of the approach surface is to provide proper clearance for the safe approach and landing of aircraft. The existing approach surface dimensions associated with Runway 12/30 is 500' x 10,000' x 3,500' and for Runway 3/21 is 250' x 5,000' x 1,250'. Any obstructions to this surface will be depicted in the Airport Layout Plan (ALP).

While FAR Part 77 provides the basic framework to identify existing obstructions within the vicinity of the airport, the FAA recently published new airspace criteria for vertically or non-vertically guided approaches to airports. This new criteria provides guidelines and specifications for listing obstructions in support of the new Airports Geographic Information System (A-GIS) initiative and can be found in Advisory Circular 150/5300-18B. Because of the infancy of this new program, it is still uncertain what affect it will have on airports and how it will be applied in a cost-effective manner.

Runway Visibility Zone (RVZ)

The RVZ is established at airports with multiple runways and is used to establish an acceptable line-of-sight that permits mutually visible points along the runway centerline of each runway, based on the distances between runway ends, taxiway locations and the nearest runway intersection. By design standards, the area within the RVZ should be owned by the airport in "fee simple." The airport sponsor should not allow building construction within the RVZ and should restrict or minimize crop/vegetation heights based on elevation differences, so they will not interfere with the runway line-of-sight requirements.

Runway Line of Sight

An acceptable runway profile permits any two points, generally each runway end, five (5) feet above the runway centerline to be mutually visible for the entire runway length. The sight distance along a runway from an intersecting taxiway needs to be sufficient to allow a taxiing aircraft to enter safely or cross the runway, in addition to seeing vehicles, wildlife and other hazardous objects. However, if the runway offers a full-length parallel taxiway, an unobstructed line of sight will exist from any point five feet above the runway centerline to any other point five feet above the runway centerline for one-half the runway length. There are no line-of-sight requirements for taxiways. As the airport is equipped with full-length parallel taxiways for both runways, there are no line of sight deficiencies.

As can be seen in the **Table 3-7** on the next page, *Airport Design Standards,* the airport meets or exceeds the design criteria for both runways with the exception of the Safety Area and Object Free Area for Runway 12/30. In the future, if any lowering of the instrument approach minimums occurs, new criteria may impose deficiencies in design standards.

Table 3-7 Airport Design Standards Kerrville/Kerr County Airport - Louis Schreiner Field				
Item	Runway 3/21	FAA Design Standard (B-I, NPI, 1-mile vis.min.)	Runway 12/30	FAA Design Standard (C-II, Not Lower than ¾-mile vis. Min.)
Runway Design				
Width	60'	60'	100'	100'
RSA Width	120'	120'	500'	500'
RSA Length beyond R/W end	240'/240'	240'/240'	1,000'/**300'**	1,000'/1,000'
OFA Width	250'	400'	**710'**	800'
OFA Length beyond R/W end	240'/240'	240'/240'	1,000'/**300'**	1,000'/1,000'
Obstacle Free Zone Width	250'	250'	400'	400'
Obstacle Free Zone Length	200'	200'	200'	200'
Runway Setbacks - Runway Centerline to:				
Parallel Taxiway Centerline	200'	240'	400'	300'
Holdline	125'	200'	250'	250'
Aircraft Parking Area	200' +	200'	500' +	400'
Taxiway Design				
Width	35'	25'	50'	35'
Safety Area Width	49'	49'	79'	79'
Object Free Area Width	89'	89'	131'	131'

Source: AC 150/5300-13, Change 17, *Airport Design*.
Bold type indicates design deficiency. ROFA width is deficient due to the location of State Highway 27 and airport perimeter fencing and RSA/ROFA length beyond Runway 12 end is deficient due to position of existing localizer.

Runway Protection Zone (RPZ)

The RPZ is a two-dimensional trapezoid area beginning 200 feet beyond the paved runway end, and extends along the runway centerline. The purpose of the RPZ is to enhance the protection of people and property on the ground, and to prevent obstructions potentially hazardous to aircraft. RPZ dimensions are determined by the type of aircraft expected to operate at an airport (small or large) and the type of approach planned for the runway ends (visual, precision, or non-precision). The recommended visibility minimums for the runway ends are determined with respect to published instrument approach procedures, the ultimate runway ARC, airfield design standards, instrument meteorological conditions, wind conditions, and physical constraints (approach slope clearance) beyond the extended runway centerline. The FAA recommends that airports own the entire RPZ in "fee simple" title and that the RPZ be clear of any non-aeronautical structure or object that would interfere with the arrival and departure of aircraft. However, if "fee simple" interest is unachievable, the next option is controlling the heights of objects through an avigation easement. While some automobile parking is allowable within the RPZ, provided they are outside the central portion, other land uses such as residences, places of public gathering (churches, schools, hospital, office buildings, shopping centers, and other uses with similar concentrations of persons typify places of public assembly), and fuel facilities are not permitted within the RPZ. **Table 3-8,** Runway Protection Zone Dimensions, delineates the RPZ requirements. The current Runway 12/30 RPZ dimensions are 500' x 1,700' x 1,010' and for Runway 3/21 are 250' x 1,000' x 450' as defined in the following table.

Table 3-8 Runway Protection Zone Dimensions Kerrville/Kerr County Airport - Louis Schreiner Field					
Approach Visibility Minimums	Facilities to Serve	Length	Inner Width	Outer Width	Acres
Visual and Not Lower than 1-mile	Small Aircraft Exclusively	1,000'	250'	450'	8.035
	Aircraft Approach Categories A & B	1,000'	500'	700'	13.770
	Aircraft Approach Categories C & D	1,700'	500'	1,010'	29.465
Not Lower Than ¾-Mile	All Aircraft	1,700'	1,000'	1,510'	48.978
Lower Than ¾-Mile	All Aircraft	2,500'	1,000'	1,750'	78.914

Source: FAA Advisory Circular 150-5300-13 Change 17, Airport Design.

Airfield Lighting and Marking Requirements

Airport lighting is used to help maximize the utility of an airport during day, night and adverse weather conditions. FAA Order 7021.2C, *Airport Planning Standard Number One - Terminal Air Navigation Facilities and Air Traffic Control Services* specify minimum activity levels to qualify for visual and electronic navigational aids and equipment. A discussion of the recommended lighting systems for the airport follows.

Runway Lighting/Pavement Marking

Pilot-controlled medium intensity runway lighting (MIRL) is recommended as the standard lighting system to define the lateral and longitudinal limits of the runway system. If a precision approach is considered at the airport then high intensity runway lights (HIRL) along with an approach lighting system are recommended. Runway pavement markings should follow requirements as prescribed in FAA Advisory Circular 150/5340-1J, *Standards for Airport Markings*. Currently, both runways are lighted with MIRL and are marked accordingly based on existing approach categories – visual for Runway 3/21 and non-precision for Runway 12/30.

Taxiway Lighting/ Pavement Marking (MITL) Medium intensity taxiway lights (MITL) are the recommended lighting system for all taxiway sections and turning radii. MITL's can also be pilot controlled and wired to the same remote system as the runway lights. However, new technology in taxiway lighting is proving to be beneficial in the form of LED lights. While these lights do have a higher up-front cost, the solar powered capacity and the lack of need for wiring eventually pays for itself over the long run. These lights also illuminate twice as long as regular lighting. Taxiway edge reflectors can be used as a less expensive lighting alternative. In addition, all paved taxiways should be painted with standard taxiway markings as prescribed in FAA Advisory Circular 150/5340-1J, *Standards for Airport Markings.* With the reconstruction of the parallel taxiway serving Runway 12/30, MITLs are installed along the length and at each connecting taxiway. The potential to include future lighting improvements will be reviewed in the Capital Improvements Chapter.

Approach Lighting System (ALS)

Depending on the type of approach a particular runway is served by, certain ALSs are required to meet the requirements of aiding pilots in the identification of the airport environment during instrument meteorological conditions. There are several types of ALS that consist of a series medium/high intensity approach lighting bars at specific intervals from the runway end along with runway alignment or lead-in lights. Currently, the airport does not have or require an ALS due to the 1-mile and greater visibility minimums associated with the instrument approach procedures to each runway end.

Visual Guidance Indicators (Precision Approach Path Indicators – PAPI)

This lighting system emits a sequence of colored light beams providing continuous visual descent guidance information along the desired final approach descent path (normally at 3 degrees for 3 nautical miles during daytime, and up to 5 nautical miles at night) to the runway touchdown point. The system normally consists of two (PAPI-2) or four (PAPI-4) lamp housing units installed 600 to 800 feet from the runway threshold and offset 50 feet to the left of the runway edge. As previously mentioned, a PAPI-4 system is currently installed on the left side of each runway end for Runway 12/30 and a PAPI-2 system is currently installed on the left side of each runway end for Runway 3/21.

Airport Signs

Standard airport signs provide runway and taxiway location, direction, and mandatory instructions for aircraft movement on the ground. A system of standard signs is recommended to indicate runway, taxiway and aircraft parking destinations. FAA Advisory Circular 150/5345-44G, *Specifications for Taxiway and Runway Signs* and FAA Advisory Circular 150/5340-18D, *Standards for Airport Sign Systems,* should be followed for proper implementation of airport signs.

Wind Cone/Segmented Circle/Airport Beacon

A segmented circle with a lighted wind cone, only required at airports with published non-standard traffic patterns, is recommended as the standard wind indicator and airport traffic pattern delineator. The airport rotating beacon is used for visual airport identification during nighttime hours and inclement weather conditions. As mentioned in the previous chapter, both these visual aid cues are in good working order.

Main Parking Apron Lighting

It is essential for safety and security that the main apron/ramp area is provided with adequate lighting to illuminate the main aircraft parking, fueling and hangar taxilane areas. Lighting seems to be adequate; however, if additional lighting is required at some point in the future, numerous economical light fixtures are available that offer adequate lighting.

Navigation Systems and Weather Aids

Airport navigation aids (NAVAIDs) are installed on or near an airport to increase the airport's reliability during night and inclement weather conditions and to provide electronic guidance and visual references for executing an instrument approach to the airport or runway.

FAA Order 7021.2C, *Airport Planning Standard Number One - Terminal Air Navigation Facilities*

and Air Traffic Control Services, specifies minimum activity levels to qualify for instrument approach equipment and approach procedures. As forecasted in the previous chapter, approximately 4,354 operations, or 3.5 percent of operations, will be conducted under instrument conditions by the end of the 20-year planning period. The following describes the status of existing and new NAVAIDs used at general aviation airports.

Instrument Land System (ILS)

An ILS system is composed of two primary land-based components, the localizer and glideslope. The ILS system enables an appropriately equipped and piloted aircraft to be flown to a runway end with visibility as low as ½-mile and cloud ceilings at or near 200 feet above ground level. The localizer provides lateral (horizontal) alignment guidance while the glideslope provides descent (vertical) guidance. Often functioning with these two components are marker beacons, which provide for identification of interim points on the approach, and an approach lighting system that provides for rapid identification of the runway environment during inclement weather conditions. Due to the cost of these components and advanced and reliable capabilities of satellite based navigation, ILS's are no longer the preferred instrumentation.

Distance Measuring Equipment (DME)

DME provides a continuous readout of the distance remaining to the touchdown point at an airport or the equipment when not located with an airport.

Very High Frequency Onmi-Directional Radio Range (VOR/VORTAC)

The VOR/VORTAC system emits a very high frequency radio signal utilized for both enroute navigation and non-precision approaches. It provides the instrument rated pilot with 360 degrees of azimuth information oriented to magnetic north. Due to the recent development of more precise navigational systems it is planned to be phased-out by the FAA (no additional enroute units installed after 1995/ deactivation by 2010). Instrument approaches to the airport use the *Center Point VORTAC,* located 7.5 NM southwest of the field.

Non-Directional Beacon (NDB)

The NDB emits a low to medium radio frequency equally in all directions whereby a pilot with the proper equipment in the aircraft can "home" on the signal or track to the station. Although the NDB is a low-cost navigational aid, it is, including the compass locator, being phased-out by the FAA (no longer eligible for AIP and F&E funds) due to the development of new and more precise navigational systems. The NDB associated with the airport is the *Shein* NDB located 5 NM southeast of the field.

Global Positioning System (GPS)

GPS is a highly accurate worldwide satellite navigational system that is unaffected by weather and provides point-to-point navigation by encoding transmissions from multiple satellites and ground-based data-link stations using an airborne receiver. GPS is presently FAA-certified for en-route and non-precision instrument approach navigation with precision instrument approaches based on GPS are being developed for commercial airports and coming on-line in the near future. The current program provides for GPS stand-alone and overlay approaches (GPS overlay approaches published for runways with existing VOR/DME, RNAV and NDB approaches). Recently, the selective availability

segment of the channel was decommissioned, thereby enhancing the accuracy of the GPS signal. The Wide Area Augmentation System (WAAS) is under final development and testing stages and when installed at or near an airport will provide a signal correction which will enable GPS precision approaches. A straight-in area navigation instrument approach is available to both runway ends utilizing GPS signals and on-aircraft receivers to guide aircraft to a safe landing at the Kerrville/Kerr County Airport.

Automated Weather Observing System (AWOS)/Automated Surface Observation System (ASOS)

Automated weather systems consist of various types of sensors, a processor, a computer-generated voice subsystem, and a transmitter to broadcast minute-by-minute weather data from a fixed location directly to the pilot. The information is transmitted over the voice portion of a local NAVAID (VOR or DME), or a discrete VHF radio frequency. The transmission is broadcast in 20-30 second messages in standard format, and can be received within 25-nautical miles of the automated weather site. AWOS/ASOS are significant for non-towered airports with instrument procedures to relay accurate and invaluable weather information to pilots. At airports with instrument procedures, an AWOS/ASOS weather report eliminates the remote altimeter setting penalty, thereby permitting lower minimum descent altitudes (lower approach minimums). These systems should be sited within 500 to 1,000 feet of the primary runway centerline. FAA Order 6560.20B, *Siting Criteria for Automated Weather Observing Systems,* assists in the site planning for AWOS/ASOS systems. According to all pertinent airport related information (Airport Facilities Directory, AirNav.com, FAA Form 5010), as well as a windshield survey, the airport is equipped with an AWOS-3 that meets all of the parameters of FAA Order 6560.20B.

Landside Facilities

Terminal Area Requirements

The key terminal area requirements are developed in consideration of the following general landside design concepts:

- Future terminal area development for general aviation airports serving utility and larger than utility aircraft should be centralized.
- Planned development should allow for incremental linear expansion of facilities and services in a modular fashion along an established flightline. Major design considerations involve minimizing earthwork/grading, avoiding flood-prone areas and integrating existing paved areas to reduce pavement (taxilane) costs;
- Future terminal expansion should allow sufficient maneuverability and accessibility for appropriate types (mix) of general aviation aircraft within secured access areas;
- Future terminal area development should enhance safety, visibility, and be aesthetically pleasing.

Terminal Building

The terminal building serves both a functional and social capacity central to the operation, promotion and visible identity of any airport. The terminal building at Kerrville/Kerr County Airport – Louis Shreiner Field was designed and constructed during 2003 – 2004. It currently houses airport management, FBO service desk/space, and public use space in the form of reception/lounge area, pilot planning room, pilot lounge, restrooms and other space. Future terminal building considerations are in line with the forecast of operations specifically identified by itinerant users in the business travel category. Terminal building expansion needs are shown in **Table 3-9** on page 3.18. Expansion of terminal building type space can be accomplished through expansion of the existing terminal building, adding a small GA terminal structure on the west-side of the field to correspond with hangar expansion, or expansion/development of FBO specific space that can meet this future capacity need.

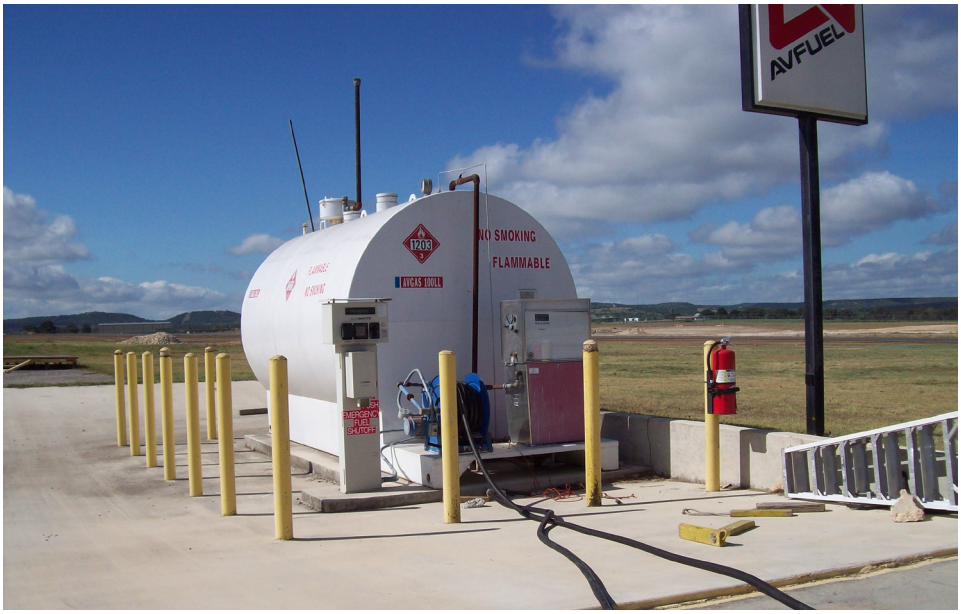
Aircraft Storage (Hangars)

Future hangar areas should achieve a balance between maintaining an unobstructed expansion area, minimizing pavement development and allowing convenient access. For planning purposes, hangars should accommodate at least 95 percent of all based general aviation aircraft. Typically, single-engine aircraft demand 1,000 to 1,200 square feet, twin-propeller aircraft require 1,200 to 3,000 square feet and business turboprop/jet aircraft require approximately 3,000 square feet.

General hangar design considerations include the following:

- Construction of aircraft hangars beyond an established building restriction line (BRL) surrounding the runway and taxiway areas. Moreover, they must be built beyond the runway obstacle free zone (OFZ), runway and taxiway object free area (OFA), the runway visibility zone (RVZ) and remain clear of the FAR Part 77 Surfaces (Transitional, Approach and Primary) and Threshold Siting Surfaces.
- Maintaining the minimum recommended clearance between T-hangars - 75 feet for one-way traffic, and 125 feet for two-way traffic. Taxilanes supporting T-hangars should be no less than 25 feet wide. Individual paved approaches to each hangar stall are typically less costly, but not preferred to paving the entire T-hangar access/ramp area.
- Construction of additional hangar space to accommodate 95 percent of the based aircraft forecasts.
- Interior and exterior lighting and electrical connections on new hangar construction. Block-style straight-unit T-hangars occupy more space, but are generally preferred over nested T-hangars and can be extended more easily. Enclosed hangar storage with bi-fold doors is recommended.
- Adequate drainage with minimal slope differential between the hangar door and taxilane. A hard-surfaced hangar floor is recommended, with less than one percent downward slope to the taxilane/ramp.
- Segregate hangar development based on the hangar type and function. From a planning standpoint, hangars should be centralized in terms of auto access, and located along the established flight line to minimize costs associated with access, drainage, utilities and auto parking expansion.

Aircraft Storage (Based Aircraft/ Itinerant Aircraft Apron)



Paved aircraft parking and tie-down areas should be provided for approximately 40 percent of the peak/design day itinerant aircraft, plus approximately 25 percent of the based aircraft. FAA airport planning criteria recommends 360 square yards (3,240 square feet) per itinerant aircraft space and approximately 400 square yards (3,600 square feet) per based aircraft. Other site specific apron planning and design considerations include:

- Maintaining the apron area beyond all airfield safety areas per airport design requirements (RSA, OFA, RPZ, OFZ and RVZ).
- Preserving the minimum runway centerline to aircraft parking apron separation of 400 feet for ARC C-II with approach visibility minimums not lower than 1-mile.
- Planning for sufficient aircraft taxiing and maneuvering space, for entering and exiting the aircraft parking apron without risk of structural damage, and to allow two-way passing of aircraft leading to the connecting taxiway. It is preferable for the main aircraft apron to be located near the mid-section of the primary runway with sufficient space to allow for a continuation of building and hangar expansion adjacent to the terminal area flight line.

Fuel Storage Requirements

Fuel storage requirements are based on the forecast of annual operations, aircraft utilization, average fuel consumption rates, and the forecast mix of general aviation aircraft. On average, the typical single-engine airplane consumes 12.0 gallons of fuel per hour and flies approximately 100 nautical miles (1.0 to 1.5 hours) per flight. Turbine aircraft generally will fly greater distances averaging 300 nautical miles and approximately 1.5 – 2.0 hours. Market conditions will determine the ultimate need for fuel tanks and their size. The following guidelines should be implemented when planning future airport fuel facilities:

- Aircraft fueling facilities should remain open continually (24-hour access), remain visible and be within close proximity to the terminal building or FBO to enhance security and convenience.
- Fuel storage capacity should be sufficient for average peak-hour month activity, which normally occurs during the summer months
- Fueling systems should permit adequate wing-tip clearance to other structures, designated aircraft parking areas (tie-downs), maneuvering areas and object free areas (OFA) associated with taxilane and taxiway centerlines.
- The FAA recommends locating the fuel facilities beyond the runway safety areas (RSA) and the building restriction line (BRL). All fuel storage tanks should be equipped with monitors to meet current State and Federal environmental regulations, and be sited in accordance with local fire codes.
- A dedicated fuel truck is typically used for Jet-A due to the liability associated with towing and maneuvering these expensive aircraft up to and in the vicinity of fueling facilities.
- Maintaining adequate truck transport access to the fuel storage tanks for fuel delivery.
- Capable of storing at least a month's supply of fuel to minimize delivery charges.

Auto Parking, Circulation, and Access Requirements

Automobile parking requirements are calculated using 1.4 spaces per design hour passenger, which is typical for non-towered general aviation airports. Based aircraft owners commonly park in their individual hangars while flying. Maintaining a dedicated public auto parking lot in close proximity to the terminal building to provide convenient access for pilots and passengers is essential. Per conversations with airport personnel, the existing terminal parking area is constrained and needs to be expanded to accommodate the additional future and current traffic needs. Potential areas for expansion of auto parking will be reviewed and taken into consideration in the Alternatives Chapter of this report.

Summary of Airport Terminal Area Facility Requirements

Table 3.9, *Summary – Aviation Facility Requirements,* summarizes terminal area facility requirements to accommodate the general aviation activity projected for the Airport for each of the three phases spanning the 20-year planning period. As the numbers below indicate, the airport's existing apron facilities are adequate for the existing operations level. However, these facilities will need to be expanded to accommodate the forecasted itinerant traffic. The existing apron will need to be expanded from the current size of 33,880 square yards to 46,000 square yards by the end of the planning period to accommodate the forecasts developed in the previous chapter.

Table 3-9
Summary – Aviation Terminal Facility Requirements
Kerrville/Kerr County Airport - Louis Schreiner Field

Facility	Existing 2009	Phase[1] (0-5 Years)	Phase 2 (6-10 Years)	Phase3 (11-20 Years)
Based Aircraft	166	187	206	252
Annual Operations	60,600	73,504	86,354	119,247
Terminal Building[2]				
Public Use Space	3,400 ft²	4,100 ft²	4,900 ft²	6,700 ft²
Lease Use Space	1,600 ft²	1,900 ft²	2,200 ft²	3,000' ft²
Total Building Space	5,000 ft²	6,000 ft²	7,100 ft²	9,700 ft²
Paved Auto Parking	12,500 ft²	28,500 ft²	33,500 ft²	46,300 ft²
Auto Parking Spaces	34	73	85	118
Aircraft Parking Apron[1]				
Based Apron	33,880 yds²	4,200 yds²	7,000 yds²	14,200 yds²
Itinerant Apron	33,880 yds²	36,100 yds²	41,600 yds²	85,100 yds²
T-Hangars	10,500 yd²	12,600 yd²	14,500 yd²	16,500 yd²
Executive/Corporate[3]	16,700 yd²	3,900 yd²	6,700 yd²	7,800 yd²
Fuel Storage				
Storage Volume (100LL)	15,000 gallons	249,800 gallons	288,500 gallons	384,700 gallons
Storage Volume (Jet-A)	12,000 gallons	1,316,400 gallons	2,135,500 gallons	6,313,000 gallons
Total Storage Volume	27,000 gallons	1,566,200 gallons	2,424,000 gallons	6,697,700 gallons

Source: FAA Advisory Circular 150/5300-13 Change 17, Airport Design.

[1] The existing aircraft parking apron does not differentiate between based and itinerant areas. Calculations are for single-and twin-engine aircraft weighing 12,500 pounds or less.

[2] Public and Lease space does not necessarily need to be provided with the terminal facility. It can be accommodated in facilities such as FBO hangars, T-hangars, other individual hangars, etc. Currently, Kerrville Aviation has approximately 2,250 sq. feet of designated 'office' space available and approximately 600 sq. feet of 'common space' available for use. When hangars are constructed, it is beneficial to ensure additional space is included as part of the airport's overall planning needs.

[3] This type of hangar typically accommodates more than one aircraft.

Chapter Four:
Airport Alternatives Analysis

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LOUIS SCHREINER FIELD

Chapter 4: Airport Alternatives Analysis

The alternatives evaluation is an iterative process that seeks to marry the needs identified by the forecast of demand, facility requirements to meet this demand, and the desires of the airport sponsor.

Introduction

This chapter describes the airfield and terminal area alternatives for the facility design criteria identified and recommended in the *Facility Requirements* chapter. The focus of this section is to evaluate the merits and deficiencies of alternatives, and provide the technical basis necessary for determining a preferred or recommended airport development plan and property management direction.

While the assessment of alternatives is based on technical judgment, the most favorable airport improvement option should be compatible with Regional Planning policies. Additionally, it should be consistent with social, economic, political and environmental goals. In order to determine the best possible course of action, the alternatives incorporate the following factors in the development and evaluation of potential design options:

- Compliance with FAA airport and airspace guidelines and standards;
- Adherence with the short- and long-range goals and objectives of the Airport Board as well as both the City of Kerrville and Kerr County;
- Compatibility with existing and proposed on and off-airport land uses; and,
- Minimization of potential environmental impacts.

Critical to the success of the airport is an effective use of all the properties at the field. The need to expand aircraft storage hangars is evident; however, the airport has property beyond its needs for terminal facilities or aeronautical purposes. This additional property is capable of providing additional revenue sources in the way of aviation compatible or industrial related type activities. Alternatives will be laid out to most effectively use the available property towards achieving the most income from the future development of the field and maximizing the business use potential for the community.

Airside Alternatives/ Recommendations

Airside facilities are those that are used for supporting the active movement and circulation of aircraft and include runways, taxiways, and approach facilities and equipment. Landside facilities pertain to the aircraft apron areas, hangar development areas, terminal area development, and any business park/industrial development areas.

Because all airport functions relate to and revolve around the runway/taxiway layout, airside development is typically evaluated before landside development. Specific considerations include runway length, runway width, and approach protection criteria needed to support the forecast use of the field through the planning period. Following a review of these airside development alternatives, a review of landside development will also be presented. As part of this process, it is important to establish a set of goals which provide the framework to predicate any future development at the airport. These goals include:

- ✈ Provide a safe, efficient operating environment;
- ✈ Providing an effective direction for future development at the airport.
- ✈ Enhancing the self-sustaining capability of the airport by ensuring the highest and best use of available airport property to maximize airport revenue;
- ✈ Plan and develop the airport in line with the future needs and requirements of the Airport Board, Kerrville, and Kerr County; and
- ✈ Encourage protection of the established investment by minimizing potential land use conflicts.

Runway, Taxiway, and Instrument Approach Capabilities

Runway Capacity and Orientation

- ✈ The airport's runway system, consisting of the primary runway (Runway 12/30) and the crosswind runway (Runway 3/21), provides adequate capacity to accommodate the forecast number of aircraft operations without excessive delay.
- ✈ The orientation of the airport's runways provides adequate crosswind coverage for the entire fleet of aircraft forecast and expected to utilize the airport.

Recommendation: The existing runway configuration provides adequate operational capacity and wind coverage; thus, no new runways are proposed for development.

Runway Length

The existing runway lengths at the airport are adequate for accommodating the existing demand. As shown in the previous Facility Requirements Chapter, Runway 3/21, with a length of 3,592', provides an adequate length for 75 percent of the small aircraft fleet, the runway's intended use and Runway 12/30, with a length of 6,000', has adequate length for accommodating aircraft less than 60,000 pounds for 75 percent of the national fleet at 60 percent useful load. Conversations with airport personnel state the runway lengths are sufficient for the types of aircraft currently operating and expected to operate at the field and pursuit of any type of runway extension is not a desire for the long-term desires of the Airport Board, City, or County. Additionally, adequate runway lengths are confirmed by the results of the airport survey which gave the airport's existing runway lengths a 'very good' rating by aircraft operators.

Recommendation: Retain the existing runway lengths of 6,000' for the primary (Runway 12/30) and 3,592' for the crosswind (Runway 3/21) runways.

Dimensional Criteria

The primary concerns with regard to the runway system dimensional criteria relate to FAA specified safety area, object free area, and taxiway setbacks. Each runway has its own set of circumstances relating to these criteria. Currently, the safety area and taxiway setbacks are within the correct design parameters for each runway. However, as previously shown, the airport is deficient in meeting the proper set back requirement for the object free area associated with Runway 12/30. Due to the location of the existing localizer, security perimeter fence, and State Highway 27, the means to achieve the full safety area recommended by the FAA is hindered. As shown on the most recently approved ALD for the airport, this non-standard condition will remain intact. As concurred and substantiated by both the FAA and Aviation Division from the existing approved ALP on file, State Highway 27 is

considered an obstruction with a cost and feasibility to relocate unachievable, outweighing any improved safety benefits.

With respect to the displaced threshold associated with Runway 12, it appears that it is in its current location to correct for the deficiency of having a full-length RSA beyond the end of the runway. Since the last ALD, new design criteria has been instituted which allows for the possibility to regain additional runway length. However, an analysis of obstruction data needs to determine that the current displacement is in its proper location or if the airport can regain some needed length on the runway. Further determination of this potential will be updated upon receiving the obstruction data from TXDOT. In the meantime, the following illustration shows the new potential runway lengths if the airport can recapture length with moving the displaced threshold to meet the current design standards.

Recommendation: While this deficiency has not precluded the ability to safely operate at the airport, it is still important for the airport to work with the local decision makers, the FAA, and TXDOT to discuss the potential for a solution and funding sources to remedy the situation.

Instrument Approach Capabilities

Existing instrument approaches at the airport include an RNAV/GPS to Runway 12 and an RNAV/GPS, LOC, and NDB to Runway 30. The coinciding visibility and ceilings minimums for these approaches were referenced and shown in T**able 1-5** of the Inventory Chapter.

While most airports desire the best and most accommodating approach to each runway end, this desire does not come without additional increased restrictions or potential compatibility issues. Based on conversations with the Airport Board and airport management, it is not the desire of the airport to pursue increased approach capabilities but to maintain and keep intact the existing approaches and respective visibility and ceiling minimums with which the airport is served today.

Recommendation: Since the airport owns an avigation easement associated with the Runway 12 RPZ, no further action is required unless this runway changes status to accommodate approaches less than ¾-mile visibility minimums. However, there is an approximate 1.5 acre area associated with the Runway 30 RPZ that is beyond airport property that will need to have an avigation easement placed upon it. Avigation easements give the airport the ability to control the height of objects within an area and the right for aircraft to fly over and operate in said area.

Taxiway System

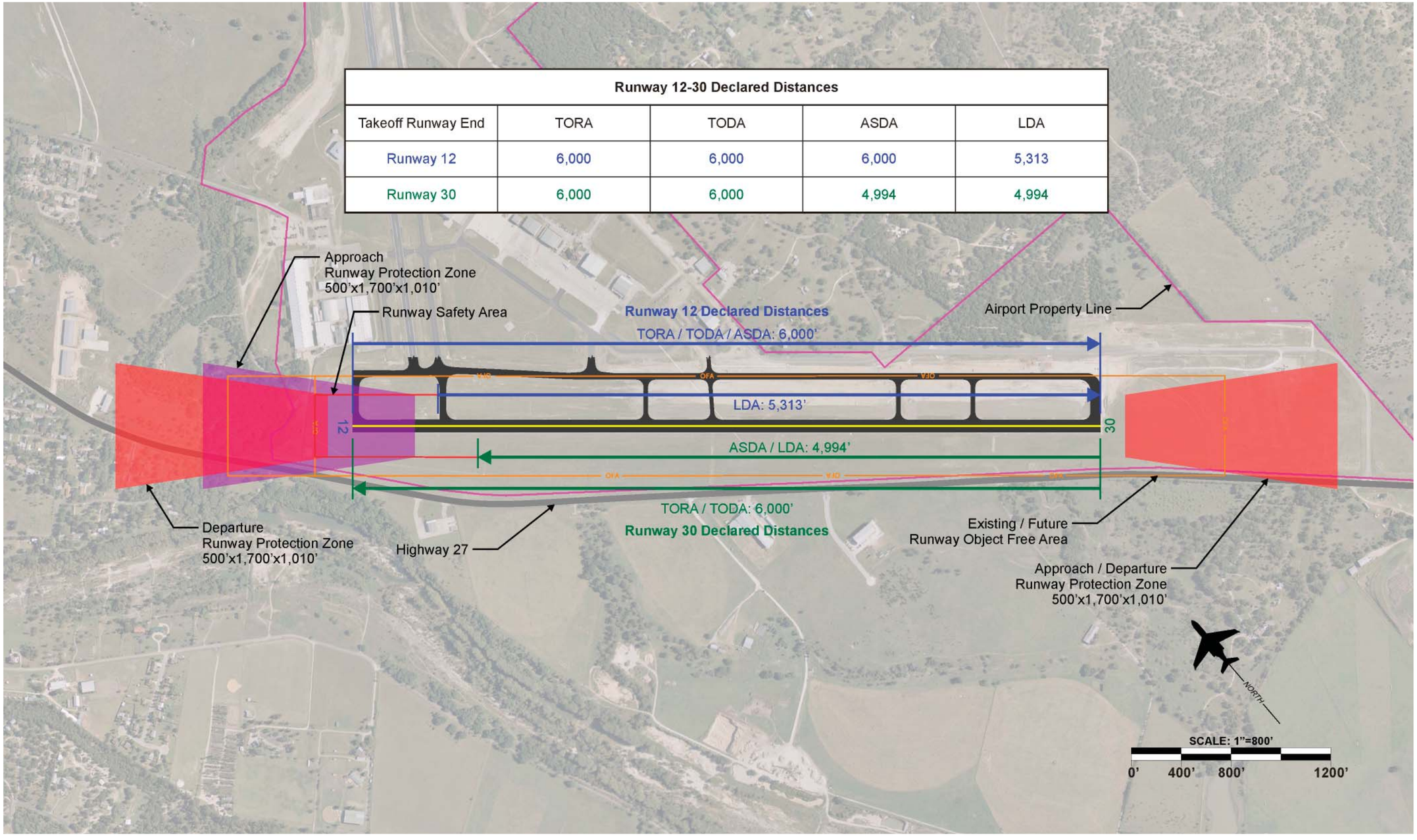
The existing taxiway system at the airport provides efficient routing for taxiing aircraft between the runway system and various landside use areas on the airport. Currently, the parallel taxiway associated with Runway 12/30 is being reconstructed and relocated with 400 feet between runway and taxiway centerlines. This new taxiway will meet FAA design criteria for a C-II airport, as well as, offer several connecting points to assist in the expedition exiting of the runway upon landing by all categories of aircraft operating at the field. Additionally, the full-length parallel taxiway east of Runway 3/21 provides good access to and from the runway and landside facilities. There are no lights associated or designation signs associated with either taxiway.

Based on the potential to develop the west side of Runway 3/21, a likely scenario would be to construct, at a minimum, a partial west-side parallel taxiway. This new access point would eliminate the necessity to cross the runway and increase the likelihood of aircraft incursions.

Recommendation: Programming for a partial-parallel taxiway to the west of Runway 3/21, programming of MITL's for each primary taxiway, at a minimum, reflectors for the connectors, and devising names and integrating designation signs for each taxiway and connector.

The following figure, **Figure 4-1** graphically illustrates the recommended airside changes associated with Runway 12/30 at the airport.

Figure 4-1, Recommended Airside Development



Landside Alternatives/ Recommendations

With the framework of the Airport's ultimate airside development identified, concepts involving the placement of landside facilities can now be analyzed. The overall objective of the landside development at the airport is the provision of facilities, which are conveniently located and accessible to the community and which accommodate the specific requirements of airport users.

Aviation Use Facility Development Areas

Concepts for the development of aviation use areas at the airport include considerations for various types of general aviation and corporate aircraft storage facilities and aircraft maintenance facilities. While there is ample room at the airport for development of these types of facilities on both east and west sides of the airport, the existing terrain poses a challenge due to significant slopes exhibited in optimum development locations. As such, Voelkel Land Surveying, Inc. was hired as a sub-consultant to perform a ground survey to identify and ascertain the optimum location for development based on contour flow and locations.

According to airport design criteria set by the FAA, the maximum amount of slope allowable for taxiways at airports exhibiting an ARC C-II classification is 1.5 percent. Based on this requirement, some vacant areas become too cost prohibitive for development and the construction of aircraft facilities. Additionally, it becomes important to ensure that development be done in a logical, sequenced fashion within the proximity of existing utilities to minimize construction costs as much as possible.

The primary development focus on the east side of the airport is situated north of Airport Terminal Road and east of the existing terminal and Kerrville Aviation hangar development area; however, the entire east side of the airport will be shown with alternatives and designated as **East, Southeast,** and **Northeast** options. The focus for the west side encompasses the undeveloped area north of the Mooney Airplane Corporation leased property. The following figures graphically illustrate the different options for alternatives on both the east and west sides of the airport.

East Side Landside Development Area Alternatives

The east side development area entails approximately 9 acres of available area within which to construct various aircraft storage facilities. This area is conducive and most suited for FBO/maintenance/avionics type uses and, as such, reflects various size hangar options to accommodate Design Group B-II and C-II aircraft. Ample parking in various locations is provided via the Airport Entrance Road and the Airport Terminal Road. Due to the location of the existing airport beacon, it is recommended this structure be relocated to a more suitable location on the field that does not conflict with future potential development areas. Additionally, the existing road providing access to the air ambulance administration building and parking lot from the north will be closed to allow for an extended taxiway to this newly developed area.

Based on the proposed layout, two (2) alternatives **Figures 4-2** and **4-3** provide the following characteristics and graphical representations:

<u>Eastside Alternative 1:</u>

- Estimated Total Hangar Space: 97,050 square feet
- Estimated Apron: 6,495 square yards
- Estimated Taxilane: 1,133 linear feet
- Estimated Auto Parking: 72 spaces

<u>Eastside Alternative 2:</u>

- Estimated Total Hangar Space: 91,875 square feet
- Estimated Apron: 7,023 square yards
- Estimated Taxilane: 754 linear feet
- Estimated Auto Parking: 32 spaces

Figure 4-2, Eastside Alternative 1

Figure 4-3, Eastside Alternative 2

Southeast Side Landside Development Area Alternatives

The southeast side development area encompasses approximately 11 acres of available area for construction. Similar to the east side, this area is conducive for FBO and larger type facilities and becomes more level, topographically, the further south you move. This area is situated in an area south of the Airport Terminal entrance road and the existing Dugosh corporate hangar. As can be seen, two of the alternatives provide aircraft access to this area with a new taxiway constructed between the most southern Kerrville Aviation Hangar and the Kennedy Hangar, while the third option provides access from both the existing parking apron and connector taxiway from the relocated Taxiway 'A'. Ample parking is also provided for all alternatives. The following three (3) figures – **Figure 4-4**, **Figure 4-5,** and **Figure 4-6** – depict the southeast side options in graphic format.

Southeast Side Alternative 1:

- Estimated Total Box Hangar Space: 50,000 square feet (5 hangars)
- Estimated Apron: 5,333 square yards
- Estimated Taxiway: 310 linear feet
- Estimated Auto Access Road: 600 linear feet
- Estimated Auto Parking Spaces: 48

Southeast Side Alternative 2:

- Estimated Total Box Hangar Space: 144,250 square feet (15 hangars)
- Estimated Apron: 15,100 square yards
- Estimated Taxilane: 425 linear feet
- Estimated Auto Access Road: 550 linear feet
- Estimated Auto Parking Spaces 55

Southeast Side Alternative 3**:**

- Estimated Total Box Hangar Space: 162,500 square feet (13 hangars)
- Estimated Apron: 12,631 square yards
- Estimated Taxiway: 1,050 linear feet
- Estimated Auto Access Road: 750 linear feet
- Estimated Auto Parking Spaces: 40

Figure 4-4, Southeast Side Alternative 1

Figure 4-5, Southeast Side Alternative 2

Figure 4-6, Southeast Side Alternative 3

Northeast Side Landside Development Area Alternatives

The northeast side development area encompasses approximately 16 acres and is located north of the terminus of Airport Loop Road. Based on the existing facilities already in place, this area is conducive for various types and sizes of aircraft storage facilities ranging from T-hangars to medium and large type box hangars. Aircraft access to this area is provided from the proposed new taxiway shown on the East Side alternatives in the previous **Figures 4-2** and **4-3.** The three (3) northeast side alternatives can be seen in the following figures, **Figure 4-7, Figure 4-8,** and **Figure 4-9.**

Northeast Side Alternative 1:

- Estimated Total T-Hangar Space: 20,800 square feet
- Estimated Total Box Hangar Space: 126,200 square feet
- Estimated Apron: 21,900 square yards
- Estimated Taxilane: 450 linear feet
- Estimated Auto Access Road: 1,150 linear feet
- Estimated Auto Parking Spaces: 72

Northeast Side Alternative 2:

- Estimated Total Box Hangar Space: 112,200 square feet
- Estimated Apron: 8,420 square yards
- Estimated Taxilane: 1,000 linear feet
- Estimated Auto Access Road: 1,350 linear feet
- Estimated Auto Parking Spaces: 100

Northeast Side Alternative 3:

- Estimated Total T-Hangar Space: 20,800 square feet
- Estimated Total Box Hangar Space: 125,200 square feet
- Estimated Apron: 16,900 square yards
- Estimated Taxilane: 940 linear feet
- Estimated Auto Access Road: 1,650 linear feet
- Estimated Auto Parking Spaces: 42

Figure 4-7, Northeast Side Alternative 1

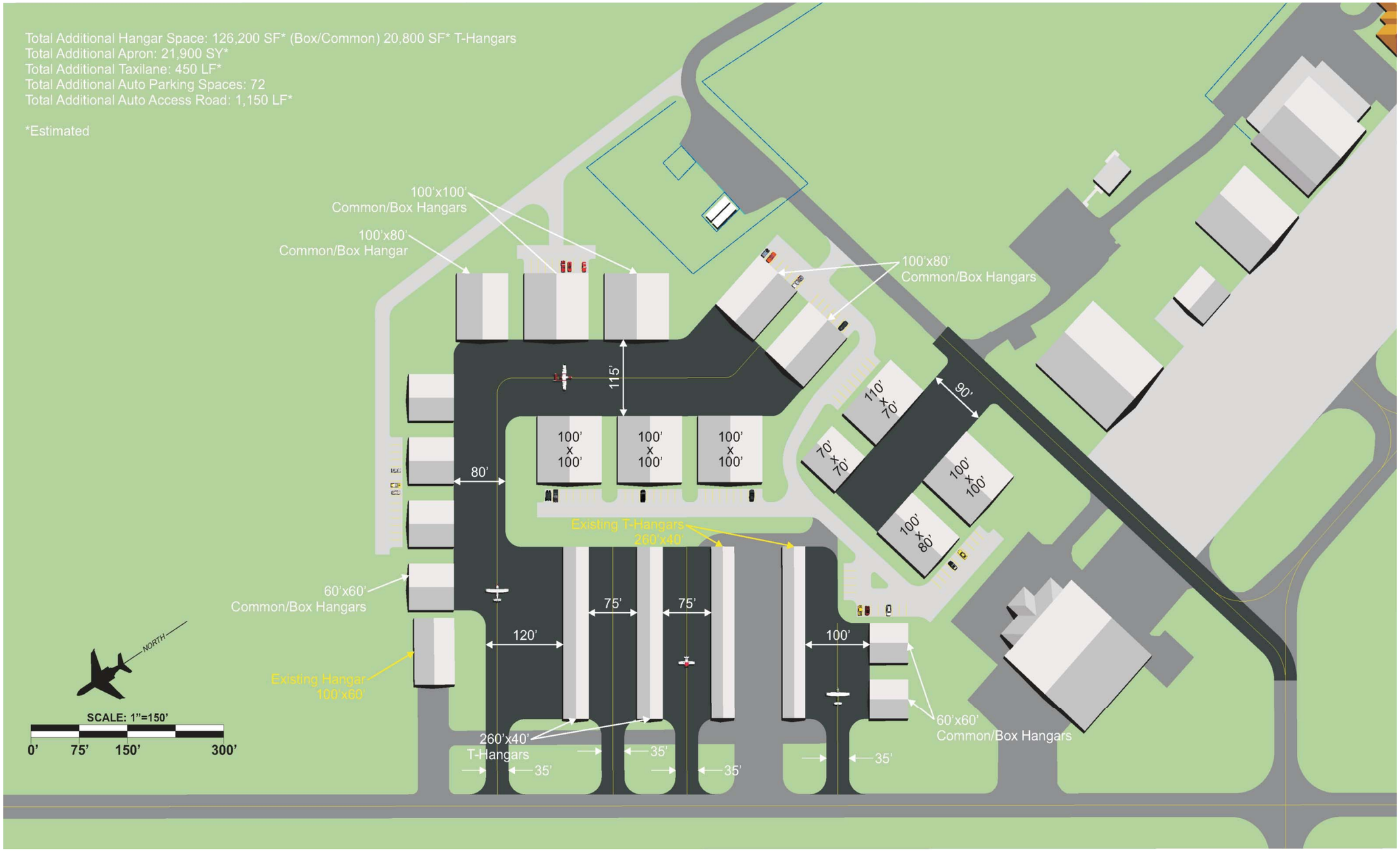


Figure 4-8, Northeast Side Alternative 2

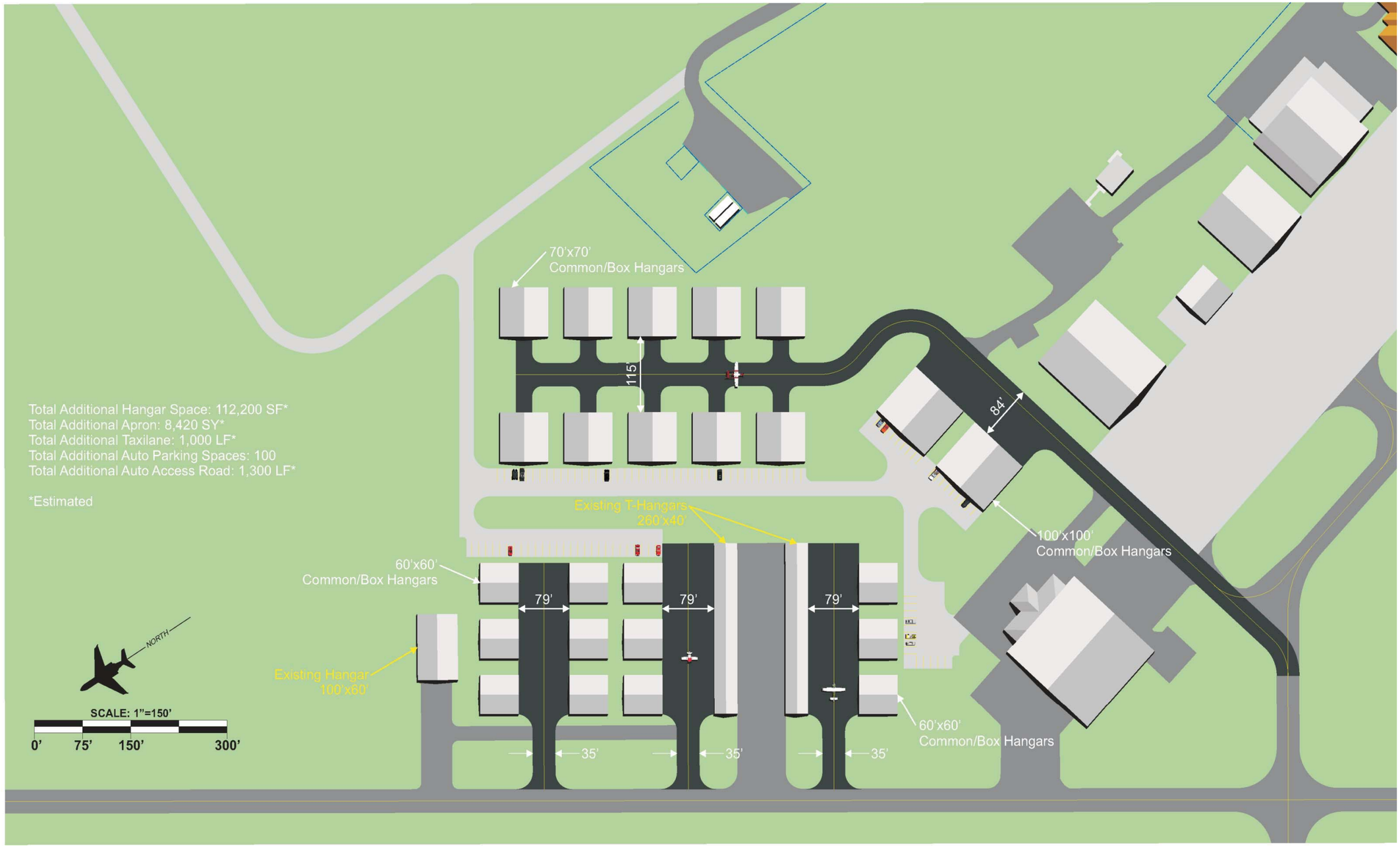
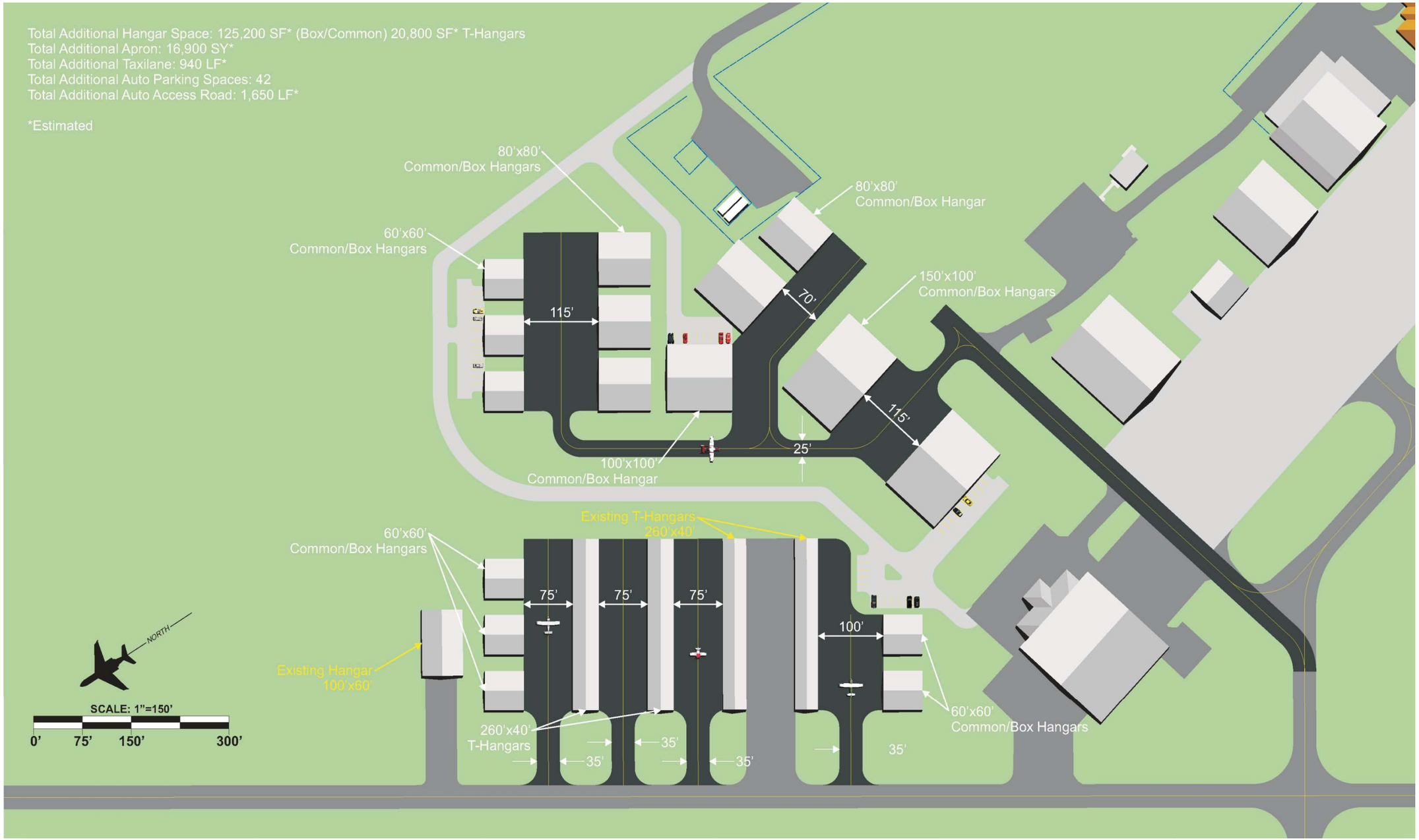


Figure 4-9, Northeast Side Alternative 3



West Side Landside Development Alternatives

The west side development area consists of approximately 23 acres of ground and with auto access via Al Mooney Road. Development options assume the airport will procure the existing Mooney paint hangar and will raze this structure for development opportunities. Additionally, the first three (3) alternatives – Figures 4-10, 4-11 and 4-12– are based on Runway 3/21 continuing to accommodate visual only approaches while Figure 4-13 assumes this same runway will accommodate 1-mile GPS approaches at some point in the future. Because of this new approach, the Building Restriction Line (BRL) for a 25' high building increases from 300' from the runway centerline to 425' from the runway centerline. This increase limits the amount of potential developable area for future facilities.

Similar to the east side, steep topography issues, which parallel the existing fence line, are exhibited on the west side in certain locations and have been avoided to limit the amount of cost involved for construction. In addition to the proposed hangar layout, access and navigation points to/from the runway and the east side of the airport are also shown. The four (4) alternatives are graphically represented in the next pages.

Westside Alternative 1:

- Estimated Total T-Hangar Space: 106,500 square feet
- Estimated Total Box Hangar Space: 61,200 square feet
- Estimated Apron: 9,027 square yards
- Estimated Taxiway: 2,252 linear feet
- Estimated Taxilanes: 4,950 linear feet

Westside Alternative 2:

- Estimated Total T-Hangar Space: 45,000 square feet
- Estimated Total Box Hangar Space: 138,600 square feet
- Estimated Apron: 8,188 square yards
- Estimated Taxiway: 2,201 linear feet
- Estimated Taxilanes: 3,011 linear feet
- Estimated Total T-Hangar Space: 47,200 square feet
- Estimated Total Box Hangar Space: 105,900 square feet
- Estimated Apron: 981 square yards
- Estimated Taxiway: 2,164 linear feet
- Estimated Taxilanes: 3,008 linear feet

Westside Alternative 4:

- Estimated Total T-Hangar Space: 95,000 square feet
- Estimated Taxiway: 986 linear feet
- Estimated Taxilanes: 4,506 linear feet

Figure 4-10, West Side Alternatives 1

Figure 4-11, West SIde Alternatives 2

Figure 4-12, West SIde Alternatives 3

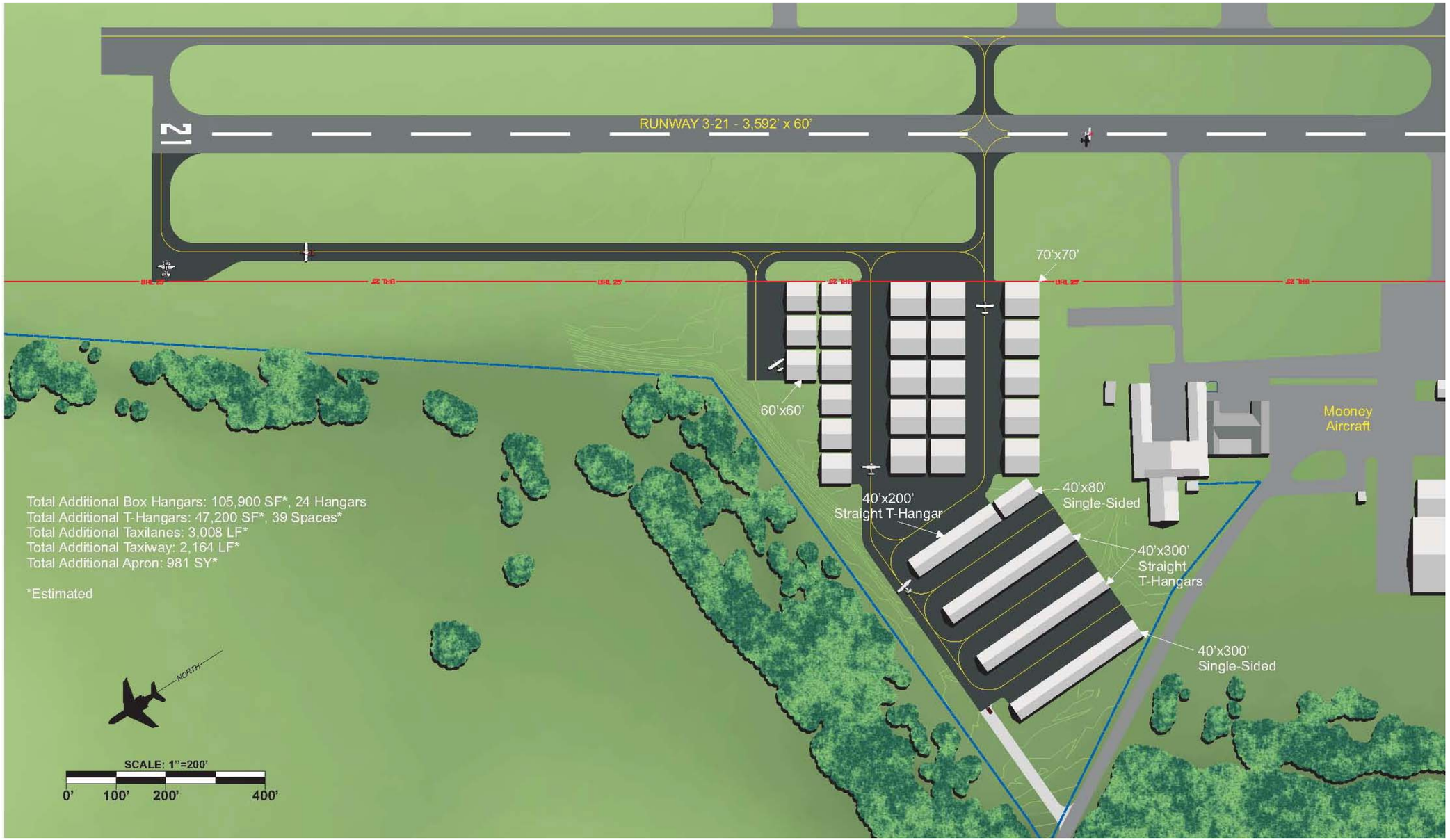
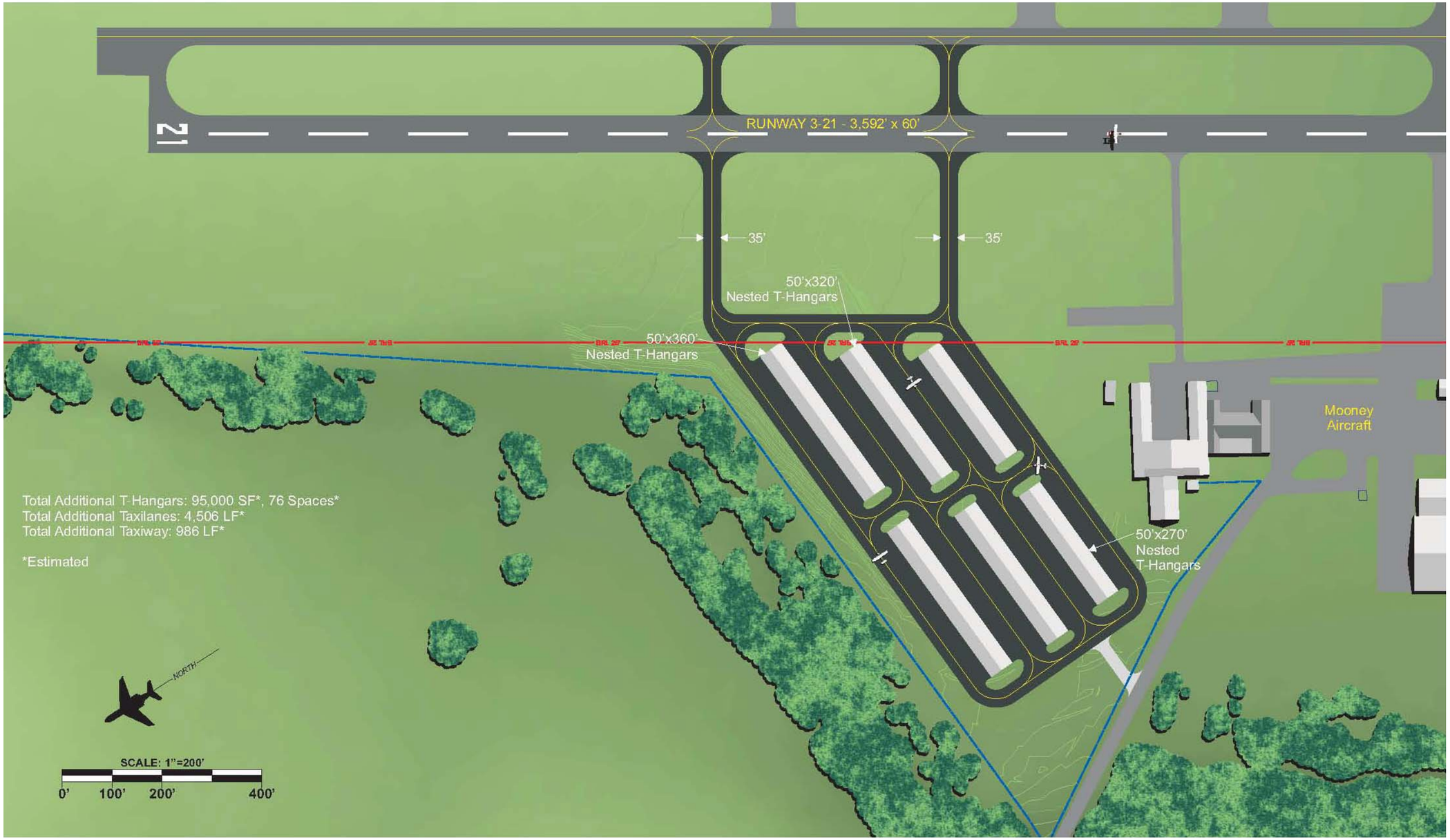


Figure 4-13, West SIde Alternatives 4



Recommended Development Plan

The preferred option for each 'side' alternative combine to form what is referred to as the recommended development plan. The recommended development plan, which provides the 20-year footprint for the airport for both airside and landside requirements,, is a compilation of the final alternative for each geographic quadrant (east, southeast, northeast, and west) which has been revised based on discussions, solicitation, and comments from the Airport Board and airport personnel.

The final preferred options for the east and west side development areas can be seen in the following figures, **Figures 4-14** and **4-15.** The Recommended Development Plan plays an integral part in not only providing the necessary information to produce the Airport Layout Drawing set it also provides the framework for completing the 20-year Capital Improvement Plan, which in turn, allows the airport to become eligible for Airport Improvement Program Grants from the FAA and TXDOT.

Figure 4-14, East Side Preferred Alternative

Figure 4-15, West Side Preferred Alternative

Chapter Five:
Phased Development Plan

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Chapter 5: Phased Development Plan

Funding from local, state and federal programs are employed to arrive at the ultimate footprint for the airport reflected in the phased development plan.

Funding Sources and Options

Funding for general aviation airports is typically available from federal, state, and local sources. At the Kerrville/Kerr County Airport, a combination of these funding sources, in addition to private financing, will be required during the short and long term planning periods to implement the proposed airport development program. The Kerrville/Kerr County Airport is currently recognized in the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS) and was included in the most recent Texas Airport System Plan Update (2010) – which qualifies it for State and federal airport funding.

Federal Aviation Administration Airport Funding Program

In Texas, federal airport entitlement, discretionary, and improvement program grants for general aviation and reliever airports are administered through the Texas Department of Transportation (TxDOT), Aviation Division as part of the FAA's State Block Grant Program. The Airport Improvement Program (AIP) provides federal planning and development grants to public-use airports included in the NPIAS. The Federal Airport and Airways Trust Fund is the source of all AIP funds. These funds are collected through aviation user-generated taxes (airline passenger tax, aircraft parts and fuel), and appropriated by Congress for eligible airport construction and improvement projects. The current system of federal airport funds is distributed by formula and discretion in accordance with provisions contained in the Airport and Airway Improvement Act of 1982, as amended. FAA Order 5100.38C, Airport Improvement Program (AIP) Handbook, provides guidance and describes polices and administrative procedures for funding AIP projects.

The funding mechanism for the AIP requires authorization from Congress. Due to the expiration of the previous appropriation and the inability to pass a new one, as of this writing, AIP funding has been operating under a continuing resolution, currently working on its seventeenth short-term extension since September 2007. However, it appears there has been progress towards passage of a new two (2) year $34.5 billion bill. Once through the reauthorization process AIP funds still remain susceptible to changes in annual appropriations process resulting from other legislative initiatives and final authorization by the President. Under AIP, the national priority system is used to distribute state-apportionment improvement funds in accordance with FAA provisions (population and land size). As a Block Grant State since 1993, the TxDOT, Aviation Division channels the distribution of AIP funding to general aviation and reliever airports within the State of Texas in accordance with the degree of need. The TxDOT, Aviation Division also assumes administrative responsibilities related to the distribution of AIP funds, with letters of interest, grant assurances, planning reviews, and other regulatory requirements relating to airport projects conducted under State control. The AIP funds for

eligible airport development projects would be funded at 90 percent federal and 10 percent local.

As a part of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR 21), general aviation airports listed in the NPIAS were authorized to receive non-primary airport entitlement (NPE) funds. Since the Kerrville/Kerr County Airport is listed in the 2009-2013 NPIAS, the Airport qualifies for this funding source. The Airport could receive NPE funds equal to one fifth of the five-year cost estimate for airport improvements as listed in the NPIAS, to a maximum of $150,000 per year.

FAA Facilities and Equipment (F & E) Funding Program

Within the FAA's Airways Facilities Division, money is available through the Facilities and Equipment Fund (F&E) to purchase and/or install NAVAIDS, PAPI's, approach lighting systems, and other air safety related technical equipment, which includes Air Traffic Control Towers (ATCT). Each F&E development project is evaluated independently through a cost/benefit analysis to determine funding eligibility and priority ranking.

State of Texas Funding and Programming

In addition to the FAA's AIP, TxDOT, Aviation Division also administers State funded programs for airport planning, maintenance, and construction projects. The funding is derived from a portion of the motor vehicle title and registration fees as part of the State Highway Fund (Fund #6). Each fiscal-year's airport program funding level is appropriated by the State's general appropriations bill as part of the TxDOT budget. The most recent Texas AIP was funded at approximately $15.4 million. The state-local cost sharing for this program is set at 90 percent state and 10 percent local except for terminal building projects, routine maintenance projects, and small capital improvement program items, which are provided under a 50-50 funding basis.

The TxDOT, Aviation Division provides airport maintenance grant assistance under the Routine Airport Maintenance Program (RAMP), intended to match local funds on a 50 percent basis for "lower-cost" airfield and terminal area improvement projects. Airfield items (runway crack seal, patching, herbicide, etc.) tend to carry a higher priority than terminal area items (entrance road paving, fencing, lighting, etc.), with determination of eligibility of specific items made by TxDOT. The State of Texas will match up to $50,000 for a total of $100,000 annually per airport, with the local sponsor responsible for costs in excess of this annual amount. Under RAMP, local governments are permitted to issue their own contracts for the scope of services by means of a standard one-page application form submitted to TxDOT. If the TxDOT District Office (San Antonio) is unable to assist in the requested service, the local government may be approved to contract-out for services; however, the local contract will require TxDOT approval for scope and cost. In-kind force accounts are not acceptable for matching funds on RAMP projects. TxDOT typically issues multiple RAMP contracts for goods and services in combination with like projects at other nearby airports.

In addition to RAMP, other grant programs and their eligibility requirements offered by the State include:

- Automated Weather Observation System (AWOS)
  - 75/25 cost share;
  - RAMP funds could be used for future maintenance agreements.
- Terminal Building Program
  - 50/50 cost share for design and construction up to $1,000,000 (furniture/appliances/ fixtures are not included and 100% local funding);
  - 50/50 cost share for parking and entry road construction up to $100,000;
  - 90/10 cost share for aircraft parking apron;
  - Airport must be publicly owned or leased for 20-years;
  - Airport must have an airport manager or designated individual on site on a regular basis;
  - Airport must have aviation fuel available for sale to the flying public.
- Hangar Program
  - 80/20 cost share for locations without pavement, 75/25 cost share for locations with pavement existing;
  - Airside needs must first be met;
  - Justification for additional hangar space is required;
  - Approved ALP designating location must be on file;
  - Hangar lease and rate structure must be in place;
  - Adoption of airport minimum standards is required.
- Fuel Facility Development
  - 75/25 cost share;
  - Installation of new above ground systems at airports that currently do not have fuel, which are controlled and owned by the airport sponsor;
  - Airside needs must first be met;
  - Fuel rate and flowage fee standards are required to be in place;
  - Approved ALP designating location must be on file; and,
  - Adoption of airport minimum standards is required.
  - Evidence of compliance with environmental regulations, which includes a Storm Water Pollution Prevention Plan and Spill Prevention Control and Countermeasure Plan both of which are eligible for funding assistance under RAMP.

Local Airport Funding

The local funding requirement for eligible federal or state-funded capital improvement projects normally totals ten percent of the project development cost. However, non-eligible airport projects (such as hangars, commercial-use development, fuel facilities, etc.) typically require 100 percent local dollars, and can become a significant aspect of the total airport development costs. The AIP funding for general aviation airport improvements, even with the multiple federal and state programs, will place greater emphasis on the need for routine pavement maintenance and a continued financial commitment from the local airport sponsor in the future.

Private (Third Party) Airport Financing

The Kerrville/Kerr County Airport has received little or no private sector money to facilitate airfield development. The existing terminal area and a majority of its associated hangars are all on airport property and have been developed completely through the use of private funds with the exception

of the most recently built T-hangars, constructed in 2000, which were constructed with funds from both the City and County. General aviation airports serving both business and personal aircraft often rely heavily on private sector financing for non-eligible improvement projects. These types of projects, which serve an individual need, have a business-related public benefit, or are beyond the financial resources of the City or the TxDOT, Aviation Division. Private financing can range from a single monetary up-front payment for new hangar development to total financing of new airport structures and facilities to routine maintenance.

Bank loans are considered short-term financing and are typically used at general aviation airports for hangar development and less capital-intensive terminal area improvements. Build-and-lease-back agreements can be used for hangar development either as a pledge to support bond issues or against mortgages on facilities constructed for a particular tenant. Ground lease rates are nominal to reflect outstanding debt risk to the investor. The major disadvantages to ground leases are higher interest rates, and the non-assignable or restricted leasehold, which remains conditionally unsecured by the financing institution.

Probable Project Costs

The phased development plan is the formulation of an orderly series of improvements intended to yield a safe, efficient and attractive public facility in a timely and economic manner. A list of capital improvement projects has been assembled from the facility requirements documentation earlier. This project list, along with the Capital Improvement Program, is continuously updated by airport management and the FAA/TxDOT. Each project is associated with a priority and phase broken down by year. Phase I encompasses the first five years (0-5 years), Phase II the following five years (6-10 years), and Phase III includes the remaining 10 years (11-20 years).

Opinions of probable costs for individual projects are based on unconstrained funding and have been prepared for improvements that have been identified as necessary during the twenty-year time frame. Since these probable costs are based on current year dollars, they are intended to be used for planning purposes only and should not be used or construed as construction cost estimates. Formalized opinions of probable costs will be developed as a part of each project's scoping process during the design and engineering. It is important to note that market demand not occurrence within a specific time frame will be the driver for when facilities are constructed.

The following guidelines have been followed in the formulation of the development plan for the Kerrville/ Kerr County Airport:

- Overall, the development plan has been structured to provide the flexibility to meet short and long-range goals. Therefore, individual projects should not be considered as a single improvement, but as part of a series of projects that arrive at the ultimate development concept;
- The development plan does not represent an obligation of local funds, nor does it require a funding commitment without justification of demand levels by the City of Kerrville, Kerr County, State of Texas, or the Federal Aviation Administration;
- The expressed desire, intent, and ability of the City/County to achieve airport land use compatibility, coupled with favorable community and business support of the Airport, remains an important funding consideration.

Table 5-1
Phase One (0-5 Years) Development Costs
Kerrville/Kerr County Airport - Louis Schreiner Field

	Project Type	Local Funding	State/Federal Funding	Total Cost
A1	Implement declared distance and install markings to R/W 12-30	$2,250	$20,250	$22,500
A2	Construct two (2) box hangars (100'x60') and apron access (north of existing T-hangars)	$570,220	$271,980	$842,200
A3	Construct partial parallel T/W west side of R/W 3-21, including two connectors (2,900 x 35)	$29,711	$267,399	$297,110
A4	Construct three T-hangars (290'x50', 230'x50', 130x50') and apron access in west-side development area	$895,197	$744,273	$1,639,470
A5	Construct west-side auto entrance road, access, and parking	$12,219	$109,971	$122,190
A6	Construct access T/W to new east side development area (700' x 35')	$14,347	$129,123	$143,470
A7	Construct two corporate/FBO hangars (100'x100'/100'x80') and apron access	$855,085	$405,765	$1,260,850
A8	T/W Signage Plan and Sign Installation	$64,400	$579,600	$644,000
A9	Expand parking in terminal area and new east-side development area	$17,935	$161,415	$179,350
A10	Acquire RPZ easement for Approach RPZ for Runway 12 (approximately 25.0 acres)	$37,550	$337,950	$375,500
A11	Acquire R/W 30 not lower than ¾-mile RPZ easement (approximately 11.5 acres)	$17,250	$155,250	$172,500
A12	Relocate beacon and tower	$9,350	$84,150	$93,500
A14	Facilitate removal of Mooney Airplane Company paint hangar for west-side development	$20,000	$20,000	$40,000
A15	Expand aircraft parking apron to south (6,750 sq. yds)	$21,350	$192,150	$213,500
A16	Construct box hangar (100'x150') at southeast end of main apron	$935,000	$0	$935,000
A17	Construct west-side auto access road and parking, south and east of aircraft parking apron	$22,473	$202,257	$224,730
	Phase I Total	**$3,524,337**	**$3,681,533**	**$7,205,870**

Source: Costs reflect current 2011 dollars and should be used for planning purposes only. Engineering/Design and Construction costs are inclusive.

Table 5-2 Phase Two (6-10 Years)Development Costs Kerrville/Kerr County Airport - Louis Schreiner Field				
	Project Type	Local Funding	State/Federal Funding	Total Cost
B1	Rehab and overlay R/W 12-30 (6,000' x 100'), Increase pavement strength to 60,000 DWG	$262,000	$2,358,000	$2,620,000
B2	Install REILS to R/W 12-30	$9,120	$82,080	$91,200
B3	Rehab aircraft parking apron (28,000 sq. yds)	$51,535	$463,815	$515,350
B4	Rehab Dugosh apron and access T/W	$32,600	$293,400	$326,000
B5	Upgrade R/W's 12-30 and 3-21 MIRL's and reevaluate and upgrade, as necessary, existing electrical vault for new LED circuits	$105,200	$946,800	$1,052,000
B6	Construct new taxilane access and one (1) box hangar (60'x60') in east-side development area	$137,300	$182,700	$320,000
B7	Construct two (2) T-hangars and associated taxilanes in west-side development area	$824,915	$899,235	$1,724,150
B8	Rehab aircraft parking apron parallel taxiway (3,100' x 35')	$21,655	$194,895	$216,550
B9	Rehab R/W 12-30 parallel T/W and connectors (7,600' x 35')	$75,865	$682,785	$758,650
B10	Rehab and overlay R/W 3-21 (3,592' x 60')	$39,440	$354,960	$394,400
B11	Rehab R/W 3-21 parallel T/W and connectors (4,500' x 35')	$31,790	$286,110	$317,900
B12	Construct taxilane and 3 box hangars (60'x60') in east-side development area	$382,950	$287,550	$670,500
B13	Construct one (1) corporate hangar (130'x90') and apron access	$398,920	$168,030	$566,950
B14	Construct auto access and parking for east-side development area	$14,840	$133,560	$148,400
B15	Install REIL's on R/W 3-21	$8,120	$73,080	$81,200
	Phase 2 Total	**$2,396,250**	**$3,407,000**	**$9,803,250**
Source: Costs reflect current 2011 dollars and should be used for planning purposes only. Engineering/Design and Construction costs are inclusive.				

To better identify the proposed projects within the phased development for the 20-year planning period, each project can be further categorized by type into the following areas: land acquisition, airfield, terminal area, other capital projects, and non-capital projects.

Land Acquisition

- Acquire RPZ Easement/Fee Simple for Approach RPZ – R/W 12
- Acquire Property for not lower than ¾-mile RPZ to R/W 30 – 11.5 acres

Airfield

- Construct partial parallel T/W west of R/W 3-21
- Construct access T/W to new east side development area (400' x 35')
- Rehab/overlay R/W 12-30; increase pavement to 60,000 DW; mark and stripe R/W
- Install REILS R/W 12-30
- Rehab/overlay R/W 3-21; mark and re-stripe R/W
- Rehab/overlay parallel T/W to R/W 3-21 (4,500' x 35')
- Rehab/overlay T/W west of aircraft parking apron (1,700' x 35')
- Extend aircraft parking apron to south (6,750 sq. yds)
- Rehab aircraft parking apron (28,000 sq. yds)
- Rehab Dugosh apron and access T/W
- Upgrade R/W's 12-30 and 3-21 MIRL's to LED
- Install REILS R/W 3-21
- Rehab aircraft parking apron parallel to T/W 'E' (3,100' x 35')
- Rehab/overlay R/W 12-30; mark and re-stripe (6,000' x 100')
- Rehab R/W 12-30 parallel T/W and connectors (7,600' x 35')

Table 5-3 Phase Three (11-20 Years)Development Costs Kerrville/Kerr County Airport - Louis Schreiner Field				
	Project Type	Local Funding	State/Federal Funding	Total Cost
C1	Rehab aircraft parking apron (28,000 sq. yds)	$44,200	$397,800	$442,000
C2	Update Airport Master Plan	$25,000	$225,000	$250,000
C3	Rehab R/W 12-30 (6,000 x 100)	$112,000	$1,008,000	$1,120,000
C4	Rehab R/W 3-21 (3,592 x 60)	$45,940	$413,460	$459,400
C5	Rehab R/W 12-30 parallel T/W and connectors (7,600 x 35)	$76,325	$686,925	$763,250
C6	Rehab parallel T/W to R/W 3-21 (4,500 x 35)	$35,660	$320,940	$356,600
C7	Install LED MITL's on R/W 12-30 parallel T/W	$89,450	$805,050	$894,500
C8	Install LED MITL's to R/W 3-21 parallel T/W)	$80,750	$726,750	$807,500
C9	Construct two (2) box hangars (80'x 60') and access apron west of existing Dugosh hangars	$333,665	$682,785	$524,150
C10	Construct three (3) box hangars (60'x 60') and access apron in east-side development area	$249,950	$143,550	$393,500
C11	Construct two (2) 10-unit T-hangar and associated pavement in west-side development area	$1,011,980	$625,320	$1,637,300
C12	Construct west-side partial parallel and runup area to R/W 21 end	$31,915	$287,235	$319,150
C13	Construct west-side entrance road and auto parking	$17,675	$159,075	$176,750
C14	Construct two (2) corporate hangars and associated aprons northwest of Dugosh hangar	$1,934,040	$576,360	$2,510,400
	Phase 3 Total	**$4,088,550**	**$6,565,950**	**$27,663,620**
	Total All Phases	**$10,009,137**	**$17,654,483**	**$27,663,620**
Source: Costs reflect current 2011 dollars and should be used for planning purposes only. Engineering/Design and Construction costs are inclusive.				

- Install LED MITL's on R/W 12-30 and R/W 3-21 parallel T/W's

Terminal Area

- Construct two (2) Box Hangars (100' x 60')
- Construct two (2) 10-unit T-Hangars
- Construct two (2) FBO/Corporate hangars (150' x 100' and 100' x 100')
- Expand terminal area parking
- Construct one (1) Box Hangar (60' x 60') in east development area
- Construct one (1) T-Hangar in west development area
- Construct two (2) Box Hangars (80' x 60')
- Construct three (3) Box Hangars (60' x 60')
- Construct one (1) 10-unit T-Hangar

Other Captial Projects

- Construct West Side entrance road, access, and parking
- Relocate Beacon and Tower
- Replace existing perimeter fence with wildlife proof 8' high fencing

Non-Captial Projects ON-CAPTIAL PROJECTS

- Implement Declared Distances
- T/W naming and signage plan
- Facilitate removal of Mooney Airplane Company paint hangar
- TxDOT completed Environmental Assessment for east and west side developments
- Update Airport Master Plan

Figure 5-1, Phased Airport Development Plan

Chapter Six:
Airport Finances & Management

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Chapter 6: Airport Finances and Management

Financing and managing an active general aviation airport is critical to its success and ability to impact the local community in a positive manner.

Introduction

The purpose of this chapter is to review the airport finances and current management structure at the airport. The finance section provides a preliminary review and analysis of an implementable strategy for airport development and maintenance. The management section outlines ownership, management and operating principles recommended for the airport as well as a brief discussion concerning land use planning. Finally, this chapter shows the transportation benefits, economic impacts, and other public benefits achieved through ownership and operation of this public entity.

Financial Plan

The purpose of the Financial Plan is to develop an implementable strategy for financially undertaking the airport's development program. It will provide a framework for the Airport Board to use as it proceeds with future development of the airport. Included in the financial plan are the identification of specific funding sources, along with projections of revenues and expenses. The overall feasibility of the plan will be measured by airport cash flow and the capability of the airport to meet its other financial requirements.

As the initial step in the financial analysis, baseline airport expenses and revenues will be projected for the airport to the year 2030. This projection only considers a baseline scenario with no revenue enhancement projects included. In a later section, a contingency plan is presented that examines the impacts of early reversion of the Mooney lease. Lastly, suggestions for revenue enhancement are presented that may improve financial performance over the long term. In order to properly frame these financial statements, this section is organized to present the following:

- Phased Capital Improvement Plan
- Baseline Forecast of Revenues and Expenses
- Contingency Planning Forecast of Revenues and Expenses
- Revenue Enhancement Actions

Phased Capital Improvement Plan

The phased capital improvement plan includes the projects to be undertaken at the airport as a result of the recommended physical improvements to the airport. These improvements constitute the baseline forecast of demand and respond to the needs based on projections of based aircraft and operations developed in Chapter 2. A second set of pro formas will consider the potential use of the Mooney leased property, should that revert to airport use prior to the expiration of the lease.

Table 6-1, *Phased Development Costs for Baseline Forecast of Demand*, presents a summary of the proposed development for the baseline scenario.

Table 6-1 Phased Development Costs for Baseline Forecast of Demand Kerrville/Kerr county Airport - Louis Schreiner Field				
Phase	**Local Share**	**Private**	**State/Federal**	**Total Cost**
0-5 Years	$1,239,337	$2,285,000	$3,681,533	$7,205,870
6-10 Years	$1,518,000	$878,250	$7,407,000	$9,803,250
11-20 Years	$1,672,550	$2,416,000	$6,565,950	$10,654,500
Totals	**$4,429,887**	**$5,579,250**	**$17,654,483**	**$27,663,620**

Source: R A Wiedemann and Associates, May 2011. Costs reflect current 2011 dollars and should be used for planning purposes only.

Table 6-2 Phased Development Costs for Contingency Plan Kerrville/Kerr county Airport - Louis Schreiner Field				
Phase	**Local Share**	**Private**	**State/Federal**	**Total Cost**
0-5 Years	$268,817	$2,285,000	$3,681,533	$6,235,350
6-10 Years	$1,518,000	$878,250	$7,407,000	$9,803,250
11-20 Years	$1,672,550	$2,416,000	$6,565,950	$10,654,500
Totals	**$3,459,367**	**$5,579,250**	**$17,654,483**	**$26,693,100**

Source: R A Wiedemann and Associates, May 2011. Costs reflect current 2011 dollars and should be used for planning purposes only.

As shown, the three planning periods reflect development items ranging from $7.2 million in the first phase (0-5 Years), $9.8 million in the intermediate phase (6-10 Years), and $10.7 million in the long term development phase (11-20 Years). In total, the unconstrained development program outlined in the Airport Master Plan is estimated to cost nearly $27.7 million, not including the effects of inflation. The local share of these costs is anticipated to total $4.4 million or an average of about $221,500 annually. When the effects of inflation are included, the local share costs increase to more than $5.3 million or $281,500 per year.

Of the $5.3 million in price-inflated local share funding, it was assumed that the development of T-hangars would require debt financing. For this analysis, terms of the debt assumed a 5 percent interest rate and 20 year financing period. A total of $2.73 million in development (price-inflated costs) was assumed to be financed in this manner.

Should the Mooney lease revert to the use of the airport, it would reduce the overall local investment in hangar facilities and infrastructure by $970,500 over the 20 year planning period, as hangars on that leased property could be used for airport revenue generation purposes **(Table 6-2).** These cost savings are offset somewhat by the loss of Mooney lease revenue. However, as market-rate rentable property for the airport, the revenue generation potential for aircraft storage is actually greater than the current Mooney lease. These differences will be highlighted in a later section of this analysis.

Baseline Forecast of Revenues and Expenses

This baseline forecast presents a status quo look at revenues and expenses, influenced primarily by historical activity and the forecast of demand included in this Airport Master Plan. It does not consider all of the potential changes at the airport that might occur should the Mooney lease revert back to the airport before its expiration. These projections also do not include any significant growth in revenues that may occur through the implementation of proactive steps that might change the master plan forecasts. **Table 1-14** of the Inventory Chapter contains a summary of the historical breakdown of revenues and expenses for the airport. Some factors of growth can be tied to forecast activity indicators while others are a function of monetary inflation. The history of non-operating revenues and expenses was not used to determine the forecast for the planning period. Rather, the Master Plan recommendations for capital improvements were used to determine future costs, while contributions from the County and City were assumed to make up any shortfalls in operating and non-operating revenues. In this regard, future comparisons of total revenues to total expenses are purposely set at a zero balance. The

contributions from the City and County toward the operation of the airport make up the net deficits over the planning period.

In order to show an accurate baseline forecast, a number of assumptions about the growth of individual line items in the budget were used:

- **Inflation Rate:** The future rate of price inflation was assumed to mirror the Consumer Price Index (CPI), and was estimated at 2.5 percent per year.
- **Lease Revenue Growth:** Lease revenues were assumed to grow by the escalation rates included in their agreements. Most of these follow the Consumer Price Index, and thus were grown at those stated rates.
- **Fuel Flowage Fees:** Fuel Flowage Fees were assumed to grow by the same rate as future aircraft operations at the airport. This Master Plan forecasts a 3.44 percent annual growth in aircraft operations through the forecast period. It is reasonable to believe that fuel sales (in gallons) will grow by the same amount. Although price inflation for fuel will likely outpace the 2.5 percent rate of the CPI assumed in this analysis, it was conservatively estimated that fuel flowage fees could increase by that growth rate (added to the growth rate of fuel gallons sold).
- **Additional Hangar Revenues:** Additional hangar rents were estimated based on the method of financing for their construction. In this regard, T-hangars were assumed to be constructed by the airport, while conventional hangars were assumed to be constructed by private enterprise on leased land. For this analysis, introductory T-hangar rates were assumed to start at $350 per month, while leased land for hangar development was estimated at $0.20/sq. ft. These lease rates were increased at the rate of the CPI.
- **Cost Escalations for Supplies and Maintenance:** Additional growth in Supplies and Maintenance costs was based upon the growth in the size of the landside infrastructure at the airport. In this regard, a good surrogate for this growth involved the number of based aircraft needing storage at the facility. This growth was estimated at 2.17 percent per year over and above the rate of inflation (CPI).
- **Other Expenses:** All other expenses were increased at the rate of the CPI.

Table 6-3A/B, *Baseline Pro Forma – Revenues*, presents the baseline projection of revenues and expenses for the airport. As shown, baseline operating revenues are anticipated to grow from approximately $301,300 in 2012 to $817,500 by the year 2030 - an average yearly increase of 5.7 percent and an overall increase of 171 percent for the period. Baseline operating expenses, on the other hand, are expected to increase from $570,300 in 2012 to $968,800 by the year 2030 – an average yearly increase of 3.0 percent and an overall increase of 70 percent for the period.

In addition to operating revenues and expenses, there are non-operating revenues and expenses. These non-operating accounts include City and County contributions to the capital costs for various physical development projects, along with making up any shortfalls in operating revenue needed to cover operating expenses. Non-operating revenues are projected to average $489,000 per year, while non-operating expenses are anticipated to average

Table 6-3A Baseline Pro Forma - Revenues Kerrville/Kerr county Airport - Louis Schreiner Field						
Operating Revenues	**2010**	**2012**	**2015**	**2020**	**2025**	**2030**
Leases	$102,317	$107,497	$115,762	$130,974	$148,186	$167,658
Fuel Flow Fees	$30,132	$32,720	$38,903	$51,914	$69,277	$92,446
Terminal Lease	$12,206	$18,655	$20,089	$22,729	$25,716	$29,095
T-Hangar Lease	$43,644	$45,853	$49,379	$55,868	$63,210	$71,516
Interest & Miscellaneous	$8,563	$8,997	$9,688	$10,961	$12,402	$14,031
Additional Hangar Rents		$87,600	$100,797	$227,354	$391,332	$442,756
Total Operating Revenues	$196,862	$301,321	$334,620	$499,801	$710,121	$817,503
Non-Operating Revenues						
Kerr County Funding	$289,568	$201,715	$215,454	$164,723	$92,885	$113,501
Kerrville Funding	$105,297	$67,238	$71,818	$54,908	$30,962	$37,834
Kerr County Project Match	$312,282	$99,010	$63,934	$138,289	$214,270	$164,192
Kerrville Project Match	$286,435	$99,010	$63,934	$138,289	$214,270	$164,192
Total Non-Operating Revenues	$993,582	$466,973	$415,139	$496,208	$552,387	$479,719
Total Revenues	**$1,190,444**	**$768,294**	**$749,758**	**$996,009**	**$1,262,508**	**$1,297,222**

Table 6-3B Baseline Pro Forma - Expenses Kerrville/Kerr county Airport - Louis Schreiner Field						
Operating Revenues	**2010**	**2012**	**2015**	**2020**	**2025**	**2030**
Personnel	$5,305	$5,961	$6,513	$7,369	$8,337	$9,433
Supplies	$10,807	$11,605	$13,344	$16,840	$21,252	$26,820
Maintenance	$72,953	$78,339	$90,077	$113,678	$143,462	$181,049
Utilities	$12,509	$13,791	$15,965	$20,376	$26,005	$33,190
Management Contract	$251,000	$263,707	$283,983	$321,301	$363,523	$411,293
Reimbursement of Employee	$126,122	$132,507	$142,695	$161,447	$182,662	$206,666
Other Services	$24,716	$25,967	$27,964	$31,639	$35,796	$40,500
Miscellaneous	$18,848	$19,802	$21,325	$24,127	$27,298	$30,885
Terminal Expenses (Separated)	$17,699	$18,595	$20,025	$22,656	$25,633	$29,002
Total Operating Expenses	$539,959	$570,274	$621,891	$719,432	$833,968	$968,837
Non-Operating Costs						
Hangar Development Costs	N/A	$130,820	$55,500	$131,100	$351,481	$241,200
Non-Hangar Local Share Costs	N/A	$67,200	$72,367	$145,477	$77,059	$87,185
Total Local Share Costs	$598,717	$198,020	$127,867	$276,577	$428,540	$328,385
Total Expenses	$1,138,676	$768,294	$749,758	$996,009	$1,262,508	$1,297,222
Net Revenues	**$51,768**					

Source: R A Wiedemann and Associates, May 2011. Costs reflect current 2011 dollars and should be used for planning purposes only.

$272,300 per year. Under the baseline scenario, the airport sponsors must contribute a total of $8.8 million over the planning period in support of the airport. These totals are reduced by $1.246 million under the contingency planning option (use of Mooney Lease hangars).

Contingency Planning forecast of Revenue and Expenses

The contingency planning option for this analysis involves the early reversion of the Mooney lease to the airport. Under this scenario, all of the existing buildings on that property would become available for potential revenue production to the airport **(Table 6-4A/B)**. Unfortunately, as described in the previous real estate documentation, there are a number of buildings that are unusable for various reasons. However, there are four buildings that could be converted to revenue production.

These four include:

- Corporate Hangar 130' by 75'
- Corporate Hangar 130' by 75'
- Corporate Hangar 80' by 75'
- Community Hangar 360' by 125'

These structures are depicted on the following page in **Figure 6-1,** *Mooney Airplane Company Building Complex.* It was estimated conservatively that four corporate aircraft would be accommodated by the three smaller buildings, while 18 smaller aircraft could use the larger building in a community-style storage operation. By keeping the aircraft population low in the larger hangar, access through the center part of the building could be maintained for aircraft moving in and out of the facility. Under a less conservative plan, the building could hold a much larger number of aircraft, but FBO crews would be required to put them in and take them out. **Table 4** presents the pro forma results from this option. Further, it may be cost effective to add the Mooney paint hangar into this list of available aircraft storage units if renovation costs are limited.

Figure 6-1
Mooney Airplane Company Building Complex: Kerrville/Kerr County Airport - Louis Schreiner Field

Hangar	Size	Description	Owner	Condition
O	200' x 390'	Manufacturing Hangar	Mooney Aircraft	Good
P	75' x 140'	Manufacturing Hangar	Mooney Aircraft	Good
Q	110' x 200'	Manufacturing Hangar	Mooney Aircraft	Good
R	150' x 750'	Manufacturing Hangar	Mooney Aircraft	Good
S	75' x 130'	Manufacturing Hangar	Mooney Aircraft	Good
T	75' x 80'	Manufacturing Hangar	Mooney Aircraft	Good
U	75' x 130'	Manufacturing Hangar	Mooney Aircraft	Good
V	140' x 140'	Manufacturing Hangar	Mooney Aircraft	Good
W	150' x 200'	Manufacturing Hangar	Mooney Aircraft	Good
X	100' x 100'	Manufacturing Hangar	Mooney Aircraft	Good

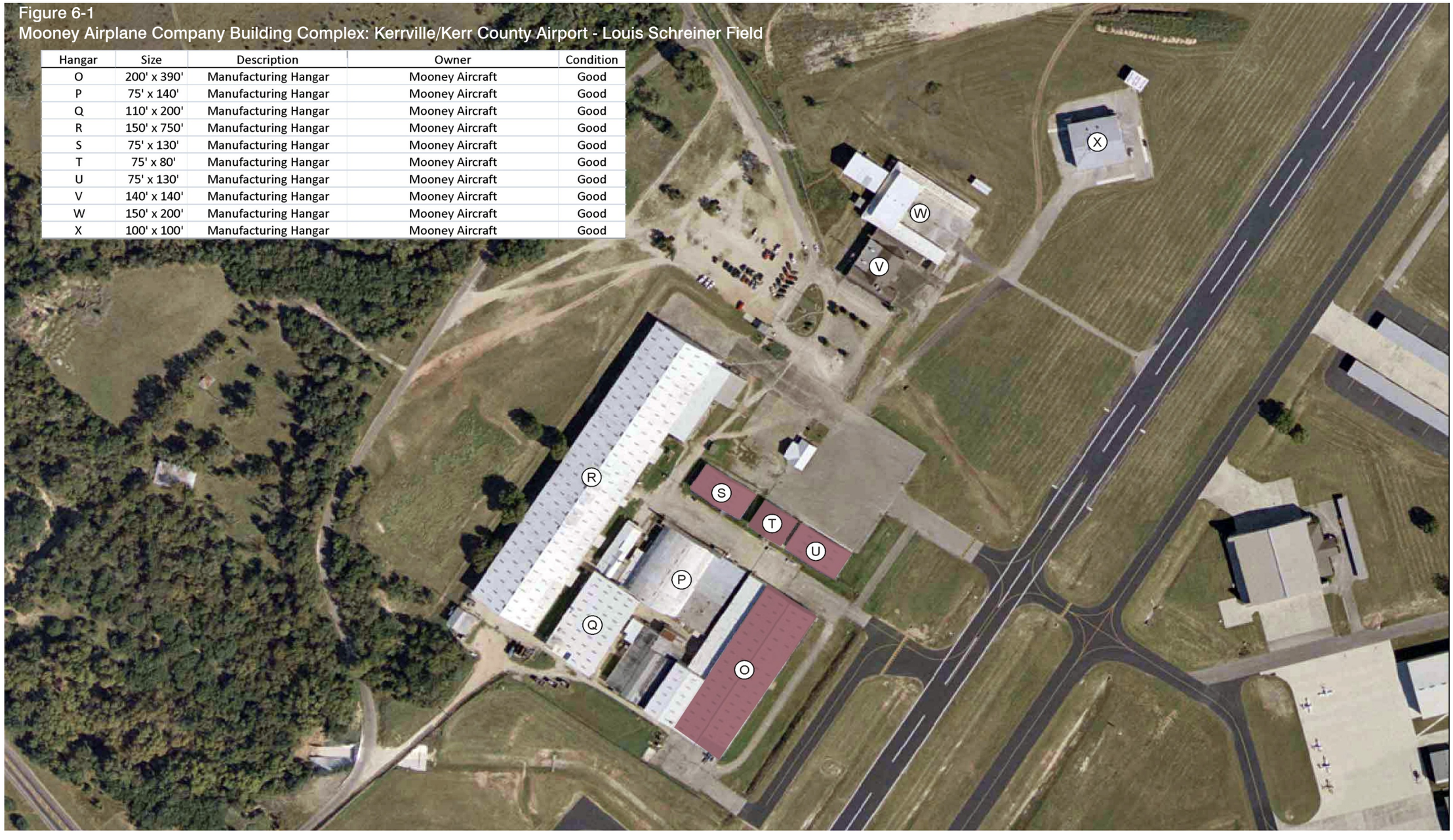

Table 6-4A Contingency Pro Forma - Revenues Kerrville/Kerr county Airport - Louis Schreiner Field						
Operating Revenues	**2010**	**2012**	**2015**	**2020**	**2025**	**2030**
Leases	$102,317	$49,705	$53,527	$60,560	$68,519	$77,523
Fuel Flow Fees	$30,132	$32,720	$38,904	$51,915	$69,277	$92,447
Terminal Lease	$12,206	$18,655	$20,089	$22,729	$25,716	$29,095
T-Hangar Lease	$43,644	$45,853	$49,379	$55,868	$63,210	$71,516
Interest & Miscellaneous	$8,563	$8,997	$9,688	$10,961	$12,402	$14,031
Additional Hangar Rents	N/A	$149,000	$166,918	$302,164	$475,972	$538,519
Total Operating Revenues	$196,862	$304,930	$338,506	$504,198	$715,096	$823,131
Non-Operating Revenues						
Kerr County Funding	$289,568	$199,008	$212,539	$161,426	$89,154	$109,280
Kerrville Funding	$105,297	$66,336	$70,846	$53,809	$29,718	$36,427
Kerr County Project Match	$312,282	$33,600	$36,184	$110,539	$186,520	$136,442
Kerrville Project Match	$286,435	$33,600	$36,184	$110,539	$186,520	$136,442
Total Non-Operating Revenues	$993,582	$332,545	$355,753	$436,312	$491,912	$418,591
Total Revenues	**$1,190,444**	**$637,474**	**$694,258**	**$940,509**	**$1,207,008**	**$1,241,722**

Table 6-4B Contingency Pro Forma - Expenses Kerrville/Kerr county Airport - Louis Schreiner Field						
Operating Revenues	**2010**	**2012**	**2015**	**2020**	**2025**	**2030**
Personnel	$5,305	$5,961	$6,513	$7,369	$8,337	$9,433
Supplies	$10,807	$11,605	$13,344	$16,840	$21,252	$26,820
Maintenance	$5,305	$5,961	$6,513	$7,369	$8,337	$9,433
Utilities	$10,807	$11,605	$13,344	$16,840	$21,252	$26,820
Management Contract	$72,953	$78,339	$90,077	$113,678	$143,462	$181,049
Reimbursement of Employee	$12,509	$13,791	$15,965	$20,376	$26,005	$33,190
Other Services	$251,000	$263,707	$283,983	$321,301	$363,523	$411,293
Miscellaneous	$126,122	$132,507	$142,695	$161,447	$182,662	$206,666
Terminal Expenses (Separated)	$24,716	$25,967	$27,964	$31,639	$35,796	$40,500
Total Operating Expenses	$18,848	$19,802	$21,325	$24,127	$27,298	$30,885
	$17,699	$18,595	$20,025	$22,656	$25,633	$29,002
Non-Operating Costs	$539,959	$570,274	$621,891	$719,432	$833,968	$968,837
Hangar Development Costs						
Non-Hangar Local Share Costs						
Total Local Share Costs	N/A	$ -	$ -	$75,600	$295,981	$185,700
	N/A	$67,200	$72,367	$145,477	$77,059	$87,185
Total Expenses	**$598,717**	**$67,200**	**$72,367**	**$221,077**	**$373,040**	**$272,885**
Net Revenues	**$1,138,676**	**$637,474**	**$694,258**	**$940,509**	**$1,207,008**	**$1,241,722**

Source: R A Wiedemann and Associates, May 2011. Costs reflect current 2011 dollars and should be used for planning purposes only.

Table 6-5, *Operating Revenue Comparison,* presents a summary and side-by-side comparison of net operating revenues for the two options. Over the entire 20 year planning period, there is only an $86,400 difference in net revenues in favor of the Contingency option. However, it should be noted that because the extra cost to the airport sponsors comes from capital investments, the operating revenues will not reveal the significant differences between options. Rather, the differences are best shown when comparing cumulative contributions of the sponsors.

Table 6-5
Operating Revenue Comparison
Kerrville/Kerr county Airport - Louis Schreiner Field

Year	Baseline Net Operating Revenues	Contingency Net Operating Revenues
2010	($343,100)	($343,100)
2012	($269,000)	($265,300)
2015	($287,300)	($283,400)
2020	($219,600)	($215,200)
2025	($123,800)	($118,900)
2030	($151,300)	($145,700)

Source: R A Wiedemann and Associates, May 2011. Costs reflect current 2011 dollars and should be used for planning purposes only.

Table 6-6
Sponsor Contributions Comparison
Kerrville/Kerr county Airport - Louis Schreiner Field

Year	Baseline Option Sponsor Contributions	Contingency Option Sponsor Contributions	Contingency Option - Net Benefit
2012	$467,000	$332,500	$134,500
2015	$415,100	$355,800	$59,300
2020	$496,200	$436,300	$59,900
2025	$552,400	$491,900	$60,500
2030	$479,700	$418,600	$61,600
20 Yr. Cumulative	$8,801,200	$7,554,800	$1,246,400

Source: R A Wiedemann and Associates, May 2011. Costs reflect current 2011 dollars and should be used for planning purposes only.

Table 6-6, *Sponsor Contributions Comparison,* presents a summary of the sponsor contributions under each option, including both operating subsidy and project matching funds. As shown, there is an immediate benefit of the Contingency option resulting from not having to fund hangar construction. As shown, the airport requires a lower subsidy under this option than the baseline projections. For the entire planning period, the subsidy for the contingency option totals $7.55 million, which is a savings of $1.246 million over the baseline case. Much of this savings involves the reduction of project matching funds that are not required through the use of the Mooney hangars.

Revenue Enhancement Actions

There are a number of actions that the airport sponsors could take that would help ensure the realization of future based aircraft and operations, along with the enhanced revenue production. This section is designed to help identify the areas of potential action for the airport sponsors. As such, it is organized to include the following discussion of topics:

- Revenue Enhancement Options
- Actions to Realize Growth

Revenue Enhancement Options

In its simplest form, an airport can only increase revenues in two ways – through increased rental or lease revenue as a landlord or from use agreements that pay the airport through various activity measures. Thus, revenue enhancement options need to focus on either increasing the landlord holdings of the airport sponsor or boosting activity at the airport. With this in mind, the following areas of revenue enhancement should be considered by the Airport Board:

- **Non-Aviation Property Development:** Airport land that is not specifically needed for aeronautical purposes can be used to generate revenue in support of airport operations. The airport consists of approximately 528 acres and has room for additional non-aviation development, as shown in the Alternatives Chapter. Additionally, there is 70 acres of land available for industrial use located at the Airport Commerce Park, located across State Highway 27 from the airport.
- **Attraction of Corporate Aviation:** The attraction of new corporate/business aviation operations to an airport can create significant revenue gains. With a runway length of 6,000 feet, the airport can accommodate most corporate jet aircraft. The addition of more business jets at the airport can improve revenues significantly, by way of fuel sales, maintenance, and hangar development and rental. Corporate aviation also creates jobs for aircraft crews, specialized maintenance professionals, and other flight department personnel.
- **Hangar Development Options:** The airport can increase its revenues through the development of additional aircraft hangars. If sufficient demand exists, the leases for hangar space and land for hangars will provide additional and long-term sources of revenue, which can be used as local matching funds for capital improvement projects. The development of hangars can proceed in a number of ways. Many airport sponsors have selected to seek development of hangars through the private sector, where cost-efficiencies can be maximized, such as avoiding the need to pay prevailing wages. At Kerrville/ Kerr County Airport – Louis Schreiner Field, it is recommended that T-hangars be funded by the airport, with conventional hangars being funded by private enterprises with a land lease, as demand warrants.

Actions to Realize Growth

There are a number of actions that the airport sponsor can take to increase activity at the airport. The first would be to develop and execute a marketing plan for the airport. A marketing plan for the airport may include the following steps:

- **Identify Potential Airport Users**
  - Registered Aircraft Owners
  - Companies with Corporate Fleets
  - Fractional Jet Ownership Companies
  - Users of Other Airports in Service Area
  - Vacation Travelers
  - Maintenance/Repair/Overhaul (M/R/O) or Specialty Aviation Service Operators (SASO)
  - Potential Governmental Users
- **Prepare Airport "Product" for Market Application**
  - Recommend Improvements to Facilities and Services that Will Appeal to the Target Market
- **Develop Marketing Approach for Segments of Demand**
- **Execute Marketing Plan**
- **Optional Marketing Tools:**
  - Short Video
  - Full Color Brochure
  - Enhanced Website

Marketing tactics for promoting Kerrville/Kerr County Airport – Louis Schreiner Field services and facilities should make full use of brand messaging, taglines, logo, and website information and could include:

- **Direct Mail:** Direct mail can be a regular part of the airport's marketing program. As new prospects are identified, or new markets targeted, direct mail pieces can be sent to these users on a quarterly, or bi-annual schedule.
- **Newsletter:** If a regular mailing is undertaken, the newsletter format is ideal to convey information and marketing materials.
- **Email Marketing:** Using a list of email addresses of target prospects to deliver content and promotional offers. This might first include major employers in Kerr County.
- **Advertising:** A number of airports advertise in industry publications, attend high visibility conferences (NBAA, MRO, AAAE, etc.), and use internet advertising to promote their facilities and services to potential users.

In addition to direct mail and email marketing, communicating the airport's brand can also be accomplished in other ways. Ideally, direct mail and email efforts would include high-quality print collateral, promotional advertising in trade publications, and increasing visibility in the region through other print or internet campaigns. However, depending upon the Airport Board's budget, another affordable means to marketing the airport can be pursued.

New media, and specifically social media, is a tool that can be used to communicate the new airport brand to pilots and users. The immediate benefit to using social media is the cost of entry, as anyone with a personal computer and internet access can begin to make progress reaching out to new and existing users. Recently, social networking tools such as Facebook, Twitter, LinkedIn, and even YouTube are fast-rising methods for communicating an airport's brand to its users. These sites offer opportunities for the airport to connect directly with users on their terms and in ways they already connect with other brands. The use of social or new media is a means to communicate directly with those who are interested in or rely on general aviation. In this way, these tools can convey the airport brand message and deliver personal attention and customer service.

Airport Management Program

Any management program at an airport should be aimed at relating the airport activities to residents and various constituents of the aviation industry, including local, regional, state, and federal agencies, local commercial interests, and airport patrons. Airport management provides valuable information and a favorable position for procuring funding from local, state, and federal sources. The climate of general aviation today increasingly emphasizes the importance of having an individual competent and capable of providing information about the benefits and opportunities of the airport to both users and non-users alike.

Typically, general aviation airports have three divisions of organization requiring staffing: administrative, maintenance, and operations. Most of these functions can be performed by one or two individuals at Business/Corporate type airports, such as the Kerrville/Kerr County Airport; however, because airport management has become increasingly complex, specialized, and time intensive due to the emergence of administrative, regulatory, financial, and legal requirements, staffing for individual functions is becoming a necessity.

Existing Airport Management Structure

The current management structure at the Kerrville/Kerr County Airport involves three levels of hierarchy, each having a specific responsibility. These include: City of Kerrville and Kerr County, the appointed Joint Airport Board, and the full-time airport management and maintenance staff. While the airport is jointly owned by the City of Kerrville and Kerr County, the five member Joint Airport Board has the decision making responsibility and authority for all airport policy considerations, as well as the compliance with all applicable federal, state, and local regulations, while the airport management staff has the day-to-day responsibility for operation, management, and maintenance of the airport. In addition to the full-time airport manager, the airport employs three (3) other individuals that assist in the day-to-day operation, which include an administrative assistant and two (2) maintenance personnel.

As previously mentioned in the Inventory chapter, 100 percent of the funding for maintenance and operation of the airport is provided by Kerr County through a contractual agreement, while still being jointly owned by the City of Kerrville. This type of agreement is unusual, in that typically, both owners of an airport have a responsibility in funding the daily operation and maintenance of the airport. Additionally, with regards to decision making and directives, both parties currently have a say, but only one party is vested with financial support. While this set up is not abnormal, it is also not common. It is imperative the City somehow become more involved financially in supporting what is proven to be an economic generator to the region and an important asset to the state and national airspace system. Any continuation of the Joint Action Agreement that will terminate on 30 September 2013 should continue to reflect not only responsible financial parties, but a possible "trigger" that provides accountability to ensure contractual obligations are being met or followed through.

As part of the grant assurance process for federal funding of projects, an airport is required to ensure they do not violate the FAA and Section 308(a) of the Federal Aviation Act of 1958, Title VI of the Civil Rights Act of 1964, and Part 21 of the Department of Transportation Regulations: "to assure to all lessees the availability of the airport property on fair and reasonable terms and without unjust discrimination." The optimum and most fair process to follow this requirement is through the implementation and adoption of Minimum Standards and/or Rules and Regulations that provide standards to maintaining aesthetics, cohesiveness, and consistency. These standards also help preclude the granting of exclusive rights to individuals or companies conducting operations or business at an airport. Currently, the Kerrville/Kerr County Airport has a set of approved and adopted rules entitled, "Airport Code" approved and adopted June 7, 2005, which has been amended three (3) times since, with the latest occurring on February 8, 2010. A full set of the most recently approved airport rules can be found an appendix to this report.

Airport Land Use Management and Planning

Management and planning for optimal use of land on and adjacent to airports has become a vital instrument for guiding urban growth and providing a healthy and aesthetically pleasing community environment. The principal factors influencing land use on and in the vicinity of an airport are the property needs for aeronautical purposes and terminal area use as well as any property needed for future aviation-related development. Property use near an airport is influenced by aircraft operations and airport-area land use development. Land use compatibility between airports and their environment is often a delicate balance with aircraft noise often the primary concern. Compatible land use planning should ensure the integrity of long-term airport operations and development plans while protecting the rights of individuals and families that live, work, or own property near an airport. Proper land use planning should allow nearby residential property owners the freedom of peaceful enjoyment of their property without suffering from noise related impacts from the airport.

The two primary land use concerns for airport operations are:

- To minimize aircraft noise impacts to the surrounding areas; and
- To protect the public by maintaining operationally safe approaches.

The two primary concerns for airport-area land uses are:

- To provide appropriate densities and land use types with respect to the characteristics of the sites and particularly, the influences of the airport; and,
- To provide reasonable opportunities for viable economic land uses while recognizing and establishing appropriate measures to balance the land use interests with airport influences.

On-airport land use is primarily defined by the property needs established by aeronautical purposes. The acquisition of property and use of existing property by the airport to ensure compatibility of adjacent land affords the maximum flexibility in developing land and protects the airport against future encroachment. The airport development plan incorporates the following land use concepts and design criteria:

- Land use is delineated by aeronautical use requirements at the airport, including safety areas identified for both the airport user and general public; and,
- Priorities have been established to maximize airport revenue in order to offset operating costs and capital investment.

Aeronautical Use: The property use on the airfield is generally defined by use and is based on the runways and their associated safety areas. Currently the airport is served by two runways with full-length parallel taxiways and connecting taxiways each of which has safety areas and object free areas that are considered aeronautical use for land use planning. These areas must be maintained clear of structures and development.

Available Property: At present the airport lies on approximately 528 acres. As was depicted on each of the development options in the Alternatives Chapter, there are several tracts of existing vacant airport property available for development of aeronautical revenue generating uses. There are no identifiable parcels that would be considered excess and proposed for sale.

Property Regulation: There are many techniques for regulating development to bring about conversion or modification of existing land uses to achieve greater compatibility between the airport and its environs, including multi-government jurisdictional authorities. Some regulating techniques may include controls such as zoning, development regulations, or building codes; other methods influence development through acquisition or taxing power. No single technique will satisfy all the requirements for implementing a compatible land use plan. Since each technique has its advantages and disadvantages, a combination of strategies should be evaluated. Regulations that control land use around airports consist of two sections which may be combined in a single ordinance: 1) zoning to achieve land use compatibility with noise and other environmental effects of the airport, and 2) Height and Hazard Zoning, which controls the locations of potential obstructions to air operations. Zoning is a measure that can be used to regulate land use, structure/object height, building size, and housing/structure density near an airport.

The purpose of airport zoning is to prevent the creation or establishment of structures or objects of natural growth that would constitute hazards or obstructions to aircraft operating in the vicinity of an airport. The definition of zones and the allowable

height of structures in relation to the airport are specified in the Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace. Although the FAA has no direct authority to enforce the regulations, it may rule that use of a runway shall be limited if structures or objects of natural growth near the airport present a hazard and are in violation of FAR Part 77. Airport zoning ordinances are enacted by local governments in the same way as (or as part of) the local zoning ordinances. It is through these authorized ordinances that the local authority maintains its enforcement power to mitigate objects that have or may become an obstruction to the established airspace at the airport. Without such an ordinance the airport sponsor is without control and subject to the development completed by private parties. As mentioned in the Inventory Chapter, the City exhibits a mechanism to control land uses in the vicinity of the airport, as well as having an adopted Height Zoning Ordinance in place.

Airport Noise Attenuation: The compatibility of existing and planned land uses in the vicinity of an airport is normally associated with the extent of noise impacts caused from aircraft operations on the airfield. The noise impact of airport operations is based on the types of aircraft using the airport and can be measured using the Integrated Noise Model, Version 7.0 (INM). The INM creates a noise exposure map showing the levels of noise generated by operations and shown in decibel levels. These noise levels are based on the metric used within INM which is the day-night average sound level (DNL). The DNL represents the total accumulation of all noise energy spread out uniformly over a 24-hour period. It should be noted that the responsibility for determining the acceptable, permissible and compatible land use remains with local authorities in response to local needs and values. Noise is currently not an issue at the airport. However, if the airport begins to experience a significant level of noise complaints, it may be prudent to complete a noise study to identify the noise footprint which may indicate the need to acquire additional properties or establish specific zoning plans to protect the airport sponsors from unwanted residential development in close proximity to the airport. The following figures show the existing and future noise contours for the airport as they relate to aircraft operations in 2010 and those forecast for 2030.

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Figure 6-2
2010 - Noise Exposure Map
Kerrville/Kerr County Airport - Louis Schreiner Field

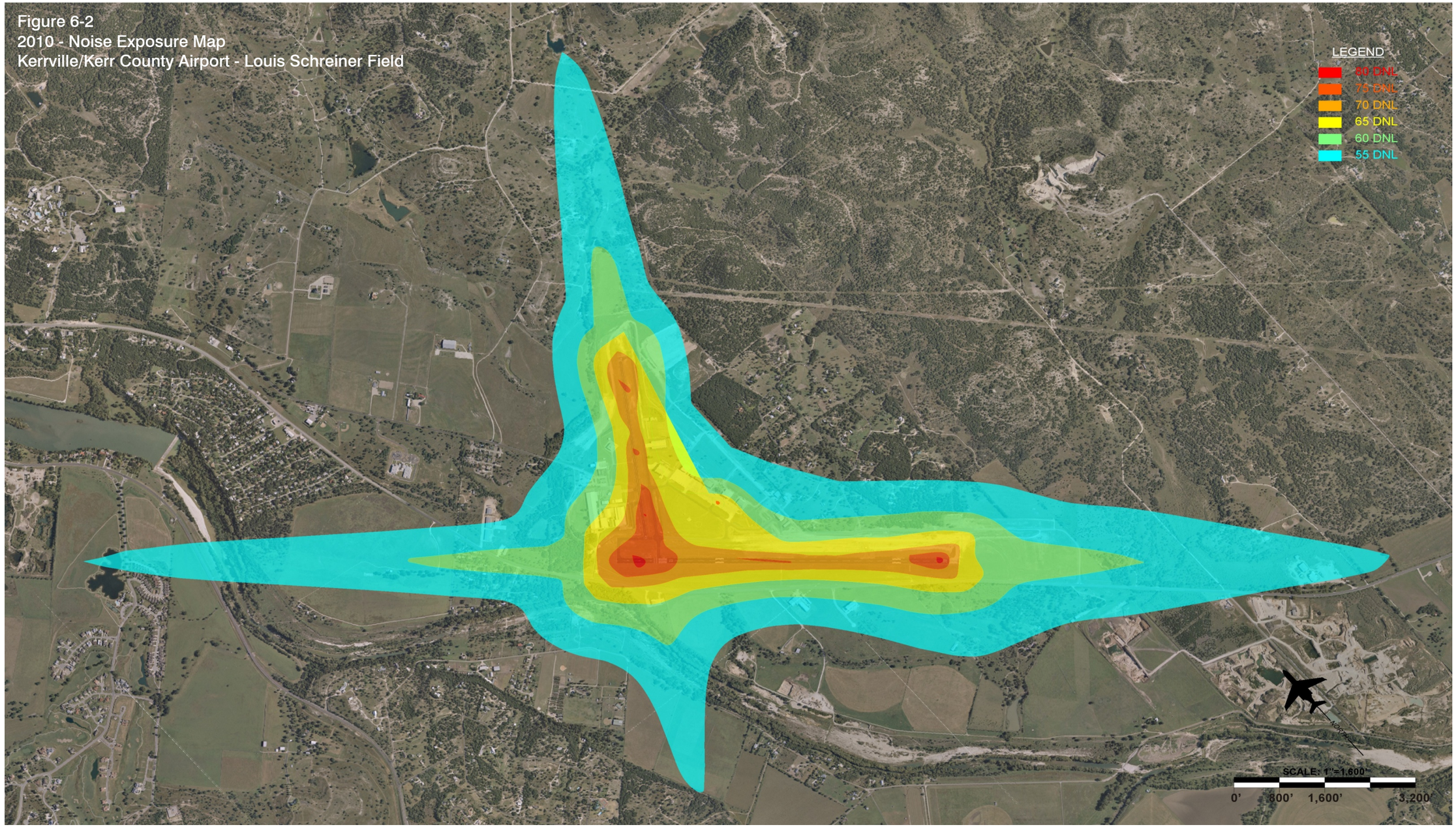
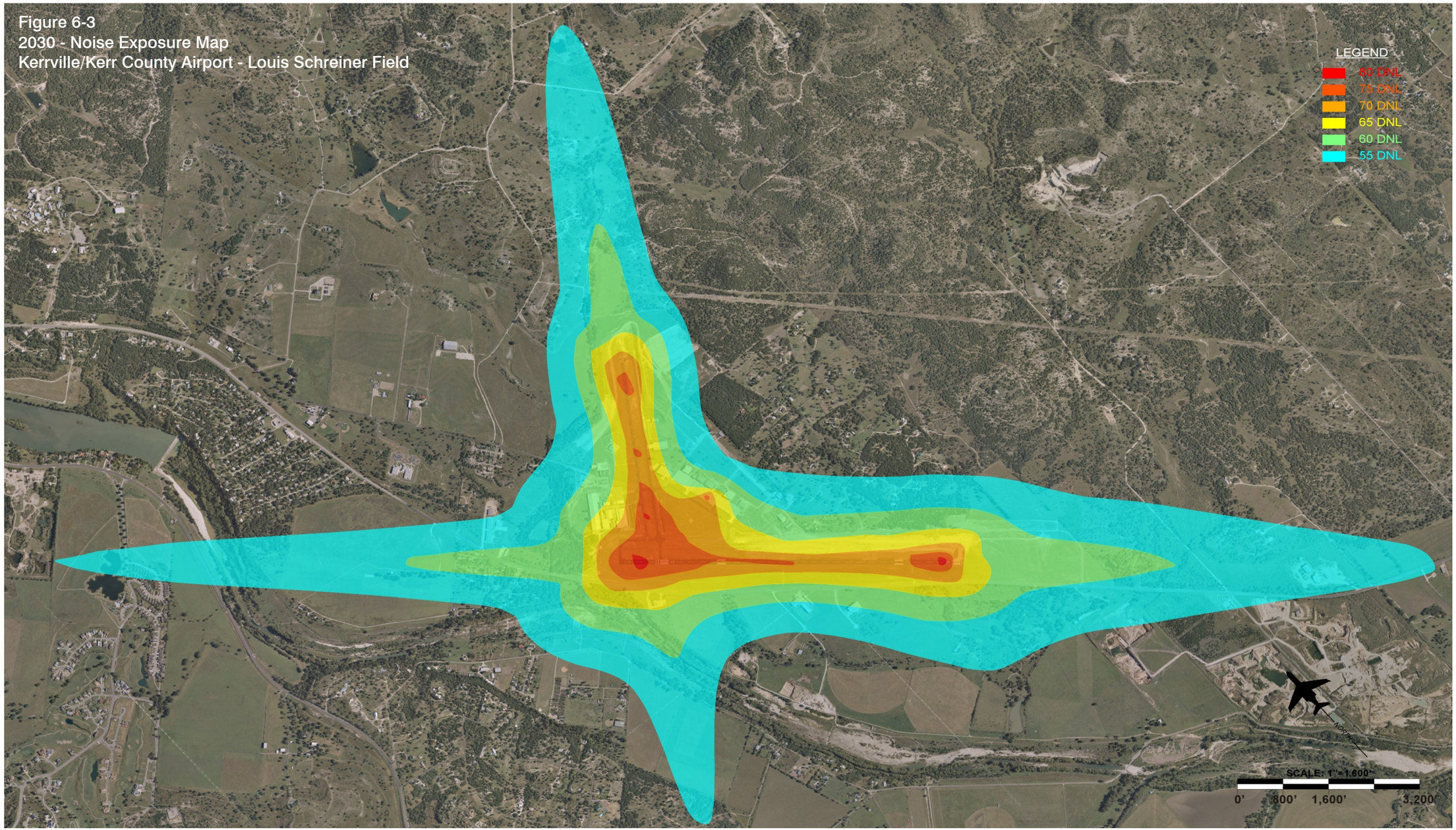


Figure 6-3
2030 - Noise Exposure Map
Kerrville/Kerr County Airport - Louis Schreiner Field



Economic Impacts and Transportation Benefits

Transportation modes and their accessibility play a key role in the development of communities. The quality and availability of alternative transportation modes which includes general aviation travel directly affect accessibility, which is one of the most vital characteristics affecting community growth and economic vitality. Aviation is an important element in the overall transportation network, with general aviation airports realizing a significant local-area economic importance and a growing impact on the overall transportation scene.

Two measureable types of data can be cited that indicate the positive impacts that an airport has on its area of influence:

- Economic Impacts; and,
- Transportation Benefits.

Transportation benefits are a measure of the improved transportation that an airport provides, which is the primary motive for a community to own and operate an airport. For many smaller or medium sized airports, the transportation benefits are often the most critical. These benefits include time saved and costs avoided by the airport users through door-to-door travel, and other advantages such as improved transportation safety, speed, and comfort.

Economic impacts are the regional economic activities such as employment and wealth that can be attributed directly and indirectly to the operation of the local airport. To make an informed decision concerning airport development alternatives, the transportation benefits and economic impacts must be examined.

Direct Transportation Benefits

The primary benefits identified in using a general aviation airport are usually the time saved and costs avoided by travelers who use it over the next best alternative, either the automobile or commercial air travel. These benefits can be quantified using studies conducted by the FAA; as specifically outlined in DOT/FAA Report (ADA 257-658), *Estimating the Regional Economic Significance of Airports.*

Table 6.7 presents the assumptions, formulas, and approach – substituting known values for Kerrville / Kerr County. Using the methodologies presented in this (ADA 257-658) report, the total transportation benefit of the Kerrville/Kerr County Airport - Louis Schreiner Field has been assessed.

Table 6.8 shows an overview of the approximate transportation benefits for various activity levels as it pertains to the area using techniques presented in Table 6.7. Information concerning airport activity, employment, usage, and economic conditions in Kerrville / Kerr County was obtained during the inventory element of the Airport Master Plan Study.

Determinations of the variables used in the calculations were derived by various sources and methods. Currently, there is no source of precise data on passenger time. The US Department of Transportation uses $55 per hour estimating the value of aircraft owners' and pilots' time for surface travel and ground delays. The Aircraft Owners and Pilots Association (AOPA) reports that the average household income of its membership is $194,000 which is equivalent to approximately $88.00 per hour. The average number of passengers per general aviation trip varies with aircraft type and is 1.5 for single-engine piston aircraft with three seats or less, 2.3 for single-engine piston aircraft with four seats or more, and 3.1 for multi-engine piston aircraft. AAA shows that automobile operating costs for a medium sized automobile driven 15,000 miles are $0.56 per mile. The average direct flight distance from the region of just over 500 miles reaches as far as Albuquerque, NM, Wichita, KS, Little Rock, AR, and New Orleans, LA.

Note: San Antonio International Airport was selected as the closest air carrier alternative airport and Gillespie County Airport was selected as the closest general aviation alternative airport due to their availability of instrument approaches and runway length.

Table 6-7 Transportation Benefits of an Airport Kerrville/Kerr county Airport - Louis Schreiner Field			
Time Saved		Reduced Ground Travel Cost	
Annual Benefit = E(FGN+Y)(b/P+c/S-a/S-d/P)		Annual Benefit = (GN+Y)(Qb-Qd)	
Annual Passengers = FGN+Y		Annual Ground Trips = GN+Y	
O-C-B Time = b/P+c/S		O-C-B Trip Costs = Qb	
O-A-B Time = d/P+a/S		O-C-A Trip Costs = Qd	
Symbol	Transportation Benefit Variables (Explanation of Terms)	United States Value	Values at Kerrville/Kerr County Airport - Louis Schreiner Field
G	Itinerant operations per based aircraft per year	300	580
N	Number of based aircraft at Airport A	Varies	16
d	Ground access distance to Airport A (miles)	Varies	5.2
E	Passenger time value ($/hour)	$50	$60
F	Number of passengers per trip for GA aircraft	2.5	1.8
P	Car Speed (mph)	60	65
Q	Car cost, including amortization ($/mile)	0.56	0.56
b	Ground access distance to alternative Airport C1/C2 (miles)	Varies	62/24
Y	Annual number of passengers in commercial service aircraft	Varies	N/A
Three additional variables are needed when use of the alternative airport substantially changes flight distances			
a	Average direct flight distance from origin Airport A to destination B	Varies	500NM
c	Average direct flight distance from origin Airport C to destination Airport B	Varies	500NM
S	GA or regional airline aircraft speed (miles per hour)	Varies	180mph

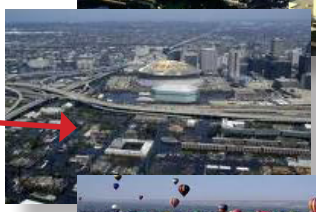
Source: Estimating the Regional Economic Significance of Airports, U.S. DOT, Department of Commerce, 1998
Notes: Use actual data where available.
N/A – not applicable.
An operation is either a take-off or landing.

Because the Kerrville / Kerr County Airport - Louis Schreiner Field does not have scheduled commercial passenger service, the transportation benefit model was developed using four final destination scenarios: 1) Little Rock, AR 2) Wichita, KS 3) New Orleans, LA and 4) Albuquerque, NM. Each of these final destinations is approximately equidistant from the City of Kerrville central business district and the Kerrville / Kerr County Airport – Louis Schreiner Field and is representative of the average distance expected for general aviation travel from the region. An added benefit of each of these destination airports is that each has commercial service which allows for the ability to analyze air travel via both general aviation and air carrier for alternate modes of travel. **Figure 6.4** depicts the transportation model used for the Kerrville / Kerr County Airport.

Figure 6-4
Transportation Benefit Variable Relationship Diagram
Kerrville/Kerr county Airport - Louis Schreiner Field

C1: Alternate Air Carrier Airport – San Antonio International Airport

C2: Alternate General Aviation Airport – Gillespie County Airport



B: Potential Destination Airports – Approximately 500 Miles Travel Distance

O: Origin Point – Kerrville Central Business District

A: Existing Airport – Kerrville/Kerr County Airport - Louis Schreiner Field

For destination purposes, the Kerrville central business district was used as the point of origin. Based on the updated forecasts developed as part of this study, the airport had approximately 42,000 itinerant operations during 2010. The forecasts indicate that these numbers will increase to 77,500 itinerant operations by the year 2030. The fleet mix forecasts indicate that the size and sophistication of the based and itinerant aircraft operating at Kerrville / Kerr County Airport-Louis Schreiner Field will moderately shift to larger more complex aircraft. More than 10,000 operations by approach category "C" and "D" aircraft are expected by 2030.

Table 6.8 identifies the approximate current and future travel times and distances, as well as the most direct transportation route to and from the alternate airport sites from the Kerrville central business district.

Table 6.9 summarizes the approximate annual transportation benefits of utilizing the Kerrville/ Kerr County Airport - Louis Schreiner Field in lieu of traveling to and from the San Antonio International Airport for commercial flights. **Table 6.10** summarizes the annual travel benefits of using the airport versus travel to and from the Gillespie County Airport when using general aviation aircraft.

Table 6-8
Approximate Transportation Benefits for Various Activity Levels (Current Dollars)
Kerrville/Kerr county Airport - Louis Schreiner Field

Alternative Airport	Location Relative to Kerrville CBD	Current Travel Time	Future Travel Time	Direct Transportation Route
San Antonio International Airport	62 Miles	1.2 Hrs.	1.6 Hrs.	1-10 Southeast to I-410 East
Gillespie County Airport	24 Miles	31 Min.	35 Min.	State HWY 16 NOrth

Source: Garver Estimates - July 2011

Table 6-9
Approximate Annual Costs to San Antonio International Airport (SAT) as the Alternative Airport
Kerrville/Kerr county Airport - Louis Schreiner Field

Year	Based Aircraft	Distance to Alternative (SAT) Airport	Annual Hours Lost in Travel Time	Value of Time Saved	Automobile Travel Cost	Total Annual Transport Costs
2010	166	62 Miles	600	$35,800	$1,268,200	$1,304,000
2015	187	62 Miles	625	$40,400	$1,428,600	$1,469,000
2020	206	62 Miles	650	$47,400	$1,573,800	$1,631,200
2025	228	62 Miles	690	$51,900	$1,741,900	$1,793,800
2030	252	62 Miles	720	$56,800	$1,925,200	$1,981,000

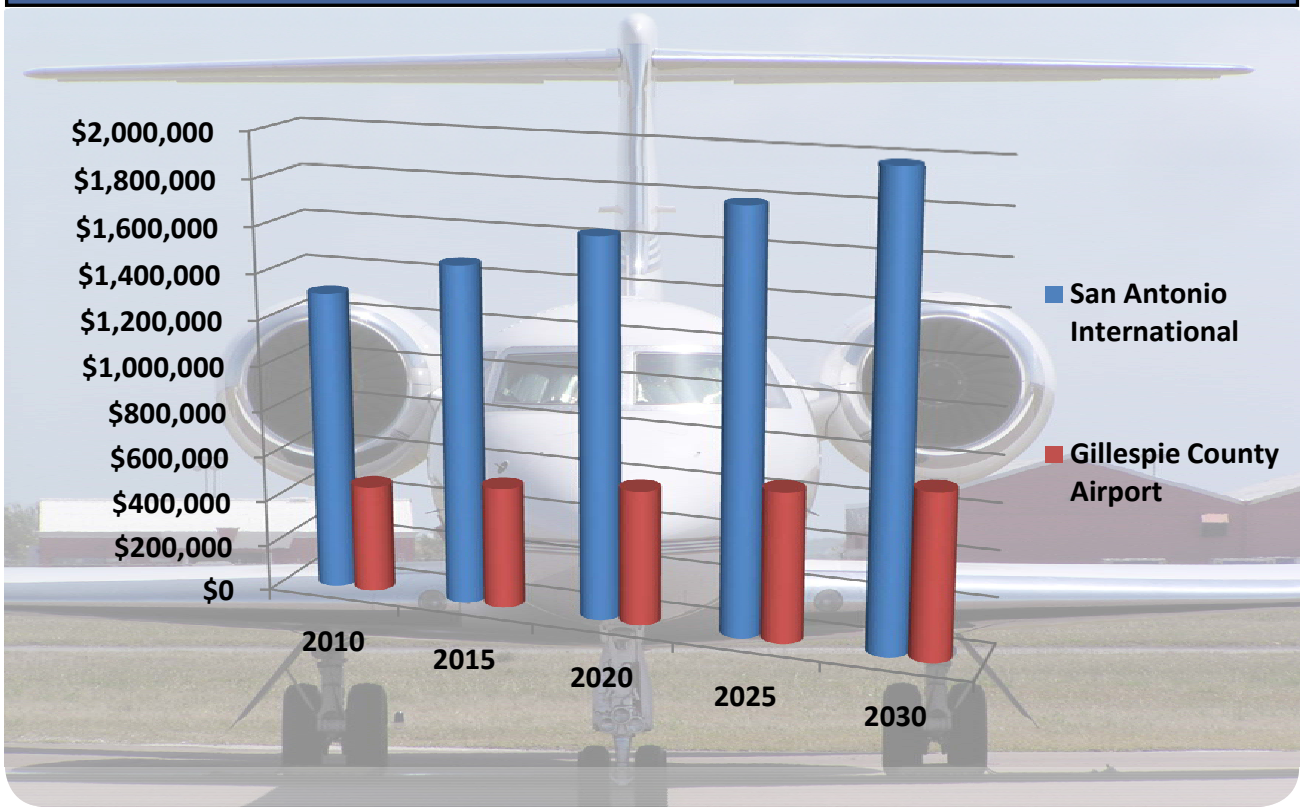
Source: Estimating the Regional Economic Significance of Airports, U.S. DOT, Department of Commerce, 1998
Notes: Transportation Model Assumptions
Time Value per Hour (2010 – 2030)
Air Carrier Airports. Personal Travel - $23.30/Business Travel - $40.10/Average - $28.60
General Aviation Airports. Personal Travel - $31.50/Business Travel - $45.00/Average - $37.20
Travel Expense per Mile – 0.55 (IRS)
Average Passengers per Trip – 2.5 Passengers (2010)/3.2 Passengers (2030)

Table 6-10
Approximate Annual Costs to Use Gillespie County Airport (T82) As the Alternative Airport
Kerrville/Kerr county Airport - Louis Schreiner Field

Year	Based Aircraft	Distance to Alternative (T82) Airport	Annual Hours Lost in Travel Time	Value of Time Saved	Automobile Travel Cost	Total Annual Transport Costs
2010	166	24 Miles	345	$20,700	$446,600	$467,300
2015	187	24 Miles	362	$23,300	$503,100	$526,400
2020	206	24 Miles	377	$27,400	$554,200	$581,600
2025	228	24 Miles	395	$30,000	$613,400	$643,400
2030	252	24 Miles	415	$32,800	$678,000	$710,800

Source: Estimating the Regional Economic Significance of Airports, U.S. DOT, Department of Commerce, 1998
Notes: Transportation Model Assumptions
Time Value per Hour (2010 – 2030)
Air Carrier Airports. Personal Travel - $23.30/Business Travel - $40.10/Average - $28.60
General Aviation Airports. Personal Travel - $31.50/Business Travel - $45.00/Average - $37.20
Travel Expense per Mile – 0.55 (IRS)
Average Passengers per Trip – 2.5 Passengers (2010)/3.2 Passengers (2030)

Figure 6-5
Approximate Annual Costs to SAT/T82 As Alternative Airports
Kerrville/Kerr county Airport - Louis Schreiner Field



In arriving at the transportation and travel time benefits, assumptions regarding associated hourly costs of recreational activity versus direct business activity cost were made with the average cost presented in the table notes utilized. In addition, the itinerant utilization rate (operations per year) at the airport were used in determining the approximate number of trips made to the alternate airports every year by current and future airport users. The numbers of based aircraft and utilization rates are products of this study.

Currently, the annual travel time cost benefit from use of the Kerrville/Kerr County Airport - Louis Schreiner Field versus use of an alternate airport site (SAT/T82) ranged from nearly $21,000 to almost $33,000 in 2010 to a range of $35,800 to nearly $57,000 by the end of the 20-year forecast period. Total average hours lost due to time commuting to and from the alternate airport site range between 345 hours per year to over 700 hours annually. The total annual transportation costs of utilizing an alternate airport range from $467,300/$1.304 million currently to over $710,800/$1.981 million per year by 2030.

From the results of this analysis, it is clear that the transportation benefits of the Kerrville/Kerr County Airport - Louis Schreiner Field, are significant and that the reliance on another existing airport in the region to provide services for the area would be highly undesirable. Savings in travel time and costs and the positive effect on the business and private airport user are substantial. The convenience and economic benefits of the local airport are major assets to Kerrville, Kerr County, and the region.

Economic Impacts

In terms of the economic impacts, people add value to the community--either directly, indirectly, or induced through the multiplier / ripple effect. Airports and firms which do business on and through airports generate economic impacts in much the same way people do--they spend money. Whether large or small, an airport serves as a base for employment, a purchaser of goods and

services, and inducement to industrial development, as well as serving as an important link in connecting the community with the national transportation system. The total economic impact for the airport is displayed for the existing conditions and each five year planning period in **Table 6.11** below.

The output numbers for this analysis was provided by IMPLAN software. Originally developed by the U.S. Forest Service, IMPLAN is known as one of the best input-output models and is built on a framework of social account methodology. The database is maintained at the county level, and includes the latest business censuses supplemented by County Business Patterns and other data derived from the Bureau of Economic Analysis. The input-output and social accounting models are derived from national data with adjustments made to reflect regional specialization, size and industrial composition. Since IMPLAN provides a comprehensive system, it is possible to trace impacts of change in one sector on other sectors in a more detailed fashion. In addition, the IMPLAN databases are composed of the following components:

- Employment;
- Industry Output;
- Value Added:
  - Employee Compensation;
  - Proprietary Income;
  - Other Property Type Income;
  - Indirect Business Taxes;
  - Institutional Demands;
  - Personal Consumption Expenditures (PCE) - three income levels;
  - Federal Government Military and Non-Military Purchases;
  - State and Local Government Education and Non-Education Purchases;
  - Commodity Credit Corporation;
  - Inventory Purchases;
  - Capital Formation;
  - Foreign Exports;
  - Federal, State and Local Government Sales; and,
  - Inventory Sales.

For this study, the IMPLAN methodology for measuring the ripple effect of spending and economic activity at ERV was used. This method is more useful than older methods in generating both the economic impacts and the tax accounting aspects of the airport activity. Desired outputs of the IMPLAN modeling include the following:

- **Direct Spending:** Includes on-airport spending on employment, operations, and capital projects. It also includes off-airport spending by air travelers for rental cars, hotels, restaurants, etc. Thus, direct spending is associated with both the providers and the users of airport services.
- **Induced Benefits (Multiplier Effect):** Impacts above the original direct spending created by the successive rounds of spending in the local economy until the original direct dollar impact has been incrementally exported from Kerr County.
- **Jobs and Income:** Quantify the income generated by aviation and the number of jobs supported by the airport.
- **Total Output in Dollars:** The combined impacts of direct and induced spending.
- **Taxes:** Tax revenue contribution of the aviation industry to local and State units of government in Texas.

Employment & Direct Capital Spending

For this analysis, information pertaining to employment and capital spending was used to input the IMPLAN model. This information included the following:

- 2010 Airport Employment - 48
- 2010 Average Annual CIP Spending - $587,000
- 2030 Estimated Airport Employment - 89
- 2030 Average Annual CIP Spending - $790,600

Off-Airport Visitor Spending

A method for determining total spending by visitors using Kerrville/Kerr County Airport – Louis Schreiner Field was developed based on a per-visitor spending estimate. Essentially, this method first estimates the number of visitors to an airport. Then, an estimated average expenditure per visitor is applied to the total number of visitors, quantifying total visitor spending. To estimate the number of visitors to ERV, it was assumed that only the actual transient pilots and

passengers would be counted. Because of its origin and destination nature, only five percent of the itinerant general aviation passengers are assumed to be actual visitors to the area. Surveys have estimated that the average occupancy of general aviation aircraft is roughly 2.5 passengers per flight.[1] Since transient (itinerant) operations can contain significant numbers of local residents (leaving and coming back to the airport), only a portion of the itinerant operations could be counted as actual visitors. The method of estimation is as follows:

- General Aviation Itinerant Arrivals = GA Itinerant Operations/2 (42,420/2 = 21,210 Itinerant Arrivals)
- Visitors = 5% times Itinerant Arrivals times 2.5 (0.05 x 21,210 x 2.5 = 2,651)

It was estimated that average spending by visitors arriving by air to Kerrville was just over $445 per trip per person.[2] It should be noted that visitors arriving by air generally spend more than those arriving by automobile. This amount includes expenditures by air visitors who spend money at local hotels, restaurants, travel agencies, and other businesses during their trips. This estimate was multiplied by the estimated number of air visitors to Kerrville/ Kerr County Airport – Louis Schreiner Field. Using this method, it was estimated that $1,126,800 was expended directly by visitors using the airport in 2010. Similarly, this method resulted in an estimated direct visitor spending in 2030 of $2,058,600. It should be noted that the 2030 estimate is given in constant 2011 dollars.

As shown in **Table 6-11**, the operation of the Kerrville/Kerr County Airport – Louis Schreiner Field currently produces roughly $5.8 million in incomes, $20.2 million in total output, and it sustains 124 jobs. By the year 2030, these numbers are anticipated to increase to $10.5 million in incomes, $36.9 million in total output, and 224 jobs.

State and Local Tax Impacts

When discussing economic impacts of aviation, many people are interested in the collective benefits to the local municipalities and the State of Texas. One measure of the collective local benefits involves

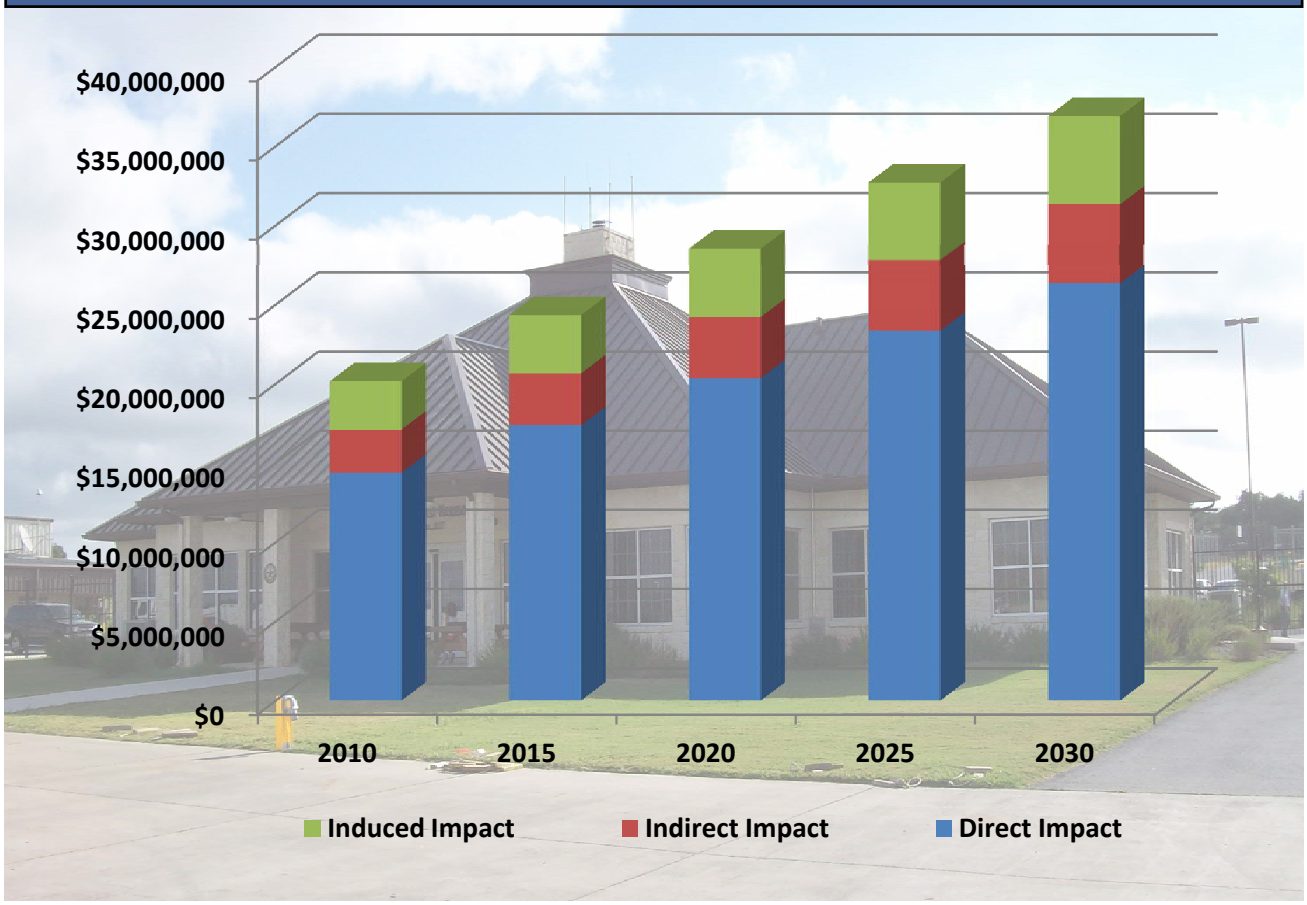
Table 6-11
Direct and Induced Impact Results
Kerrville/Kerr county Airport - Louis Schreiner Field

	2010	2015[1]	2020[1]	2025[1]	2030[1]
Direct Impacts					
Airport-related Income*	$3,821,000	$4,606,350	$5,391,700	$6,177,050	$6,962,400
On and Off-Airport Expenditures (including CIP)	$14,380,900	$17,373,391	$20,359,882	$23,349,341	$26,338,800
Airport-related Employment (Total)	72	87	101	115	129
Induced Impacts					
Induced Income Impacts	$2,035,400	$2,455,800	$2,876,200	$3,296,600	$3,717,000
Induced Direct Impacts	$5,774,400	$6,968,125	$8,161,850	$9,355,575	$10,549,300
Total Induced Employment Impacts	52	63	74	85	95
Grand Total Dollar	$20,155,300	$24,338,502	$28,521,704	$32,704,902	$36,888,100
Grand Total Income Impacts*	$5,856,500	$7,062,225	$8,267,950	$9,473,675	$10,679,400
Grand Total Employment Impacts	124	149	174	199	224

Source: Dr. Geoff Hewing, University of Illinois. Developed using IMPLAN software.
* Includes indirect incomes from visitor spending and capital development. This is a subset of the total impacts and is already included in the output number.
1 Figures for 2015, 2020, and 2025 have been interpolated between 2010 and 2030.
- IMPLAN software
- Employment multiplier = 1.73, Income multiplier = 1.53, and Output multiplier = 1.40

[1] Aircraft Owners & Pilots Association (AOPA) estimate, 2006.
[2] Source: http://www.eturbonews.com/18860/texas-visitors-generate-billions-dollars. and Texas State Travel Guide – 2011 Rate and Market Information (www.traveltex.com).

Figure 6-6
Estimated Economic Impacts
Kerrville/Kerr county Airport - Louis Schreiner Field



Figures for years 2015, 2020, and 2025 have been interpolated based on actual figures for 2010 and 2030.

the level of taxes paid to these governmental units. These tax impacts were estimated by the IMPLAN model for expenditures at the State and local level. Estimated State and local tax impacts from aviation activity for Kerrville/Kerr County Airport totaled $970,100 for 2010 and $1,783,100 by 2030.

Public Benefits

A third and equally important role of aviation can be found in the public benefits to a community or region because of the area airports. The community benefits of airports are significant but difficult to quantify. However, according to recent surveys conducted by the FAA, airports have been documented to provide benefits based on general aviation usage as shown in **Table 6.12.**

Local airports play an important role in an area's public health network by providing facilities (airplanes and helicopters) for routine and emergency public safety services, air ambulance, executive travel for public officials, law enforcement agencies, and emergency preparedness organizations. Finally, commerce and business clearly benefit from the state's system of airports by providing for civil and military flight instruction services, aerial application of pesticides, fertilizers and seeds, and other business directly related to aviation needs.

Each year the FAA disperses a pilot survey questionnaire's to various registered pilots across the nation to ascertain what types of activities pilots utilize their aircraft. Fiscal year 2009 is the latest

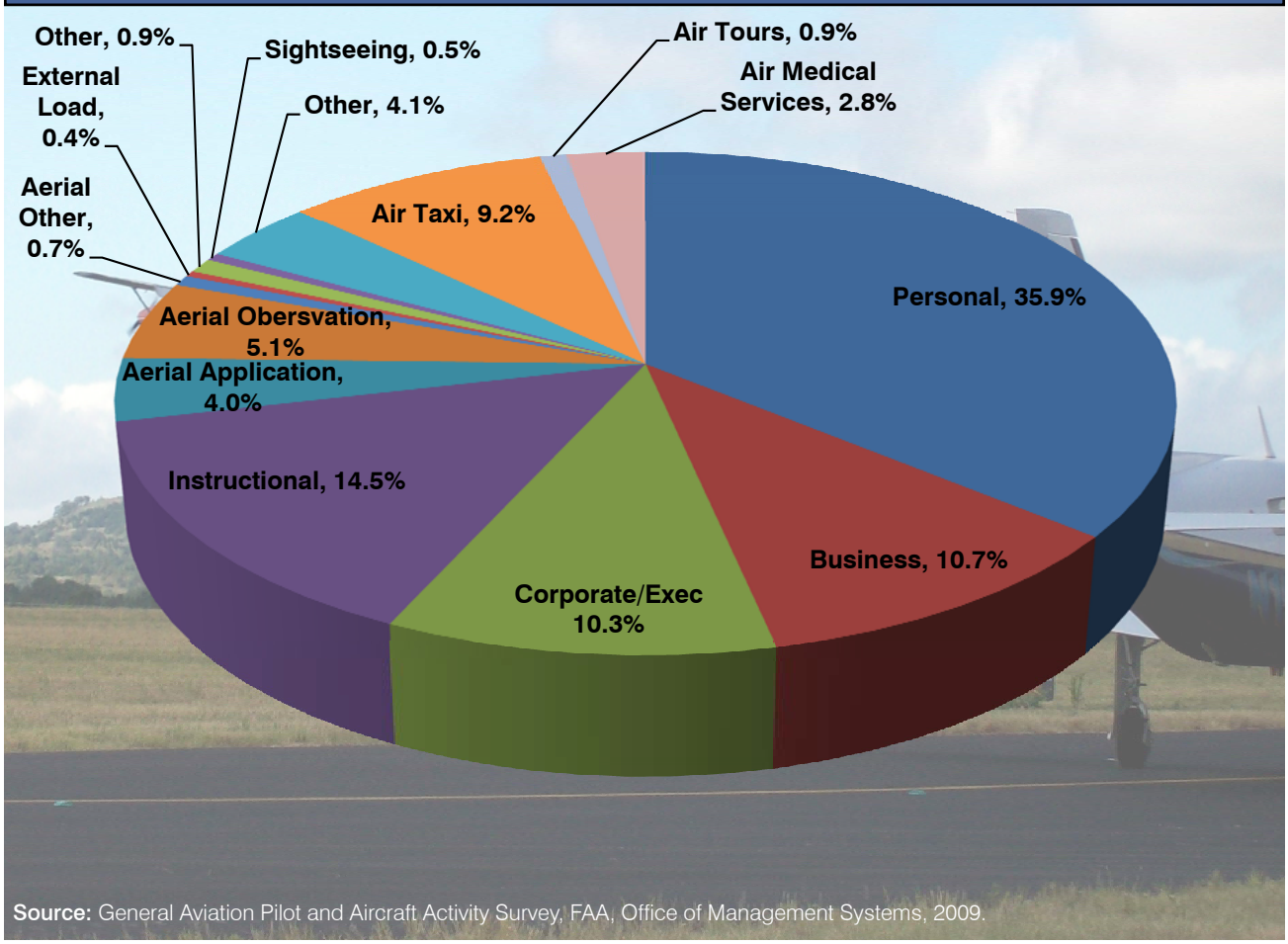
Table 6-12 Survey of Public Benefits at Regional Airports Kerrville/Kerr county Airport - Louis Schreiner Field	
Public Benefit	**Percent of Airport Responding**
	4.1%
Air Ambulance	2.5%
Air shipment of life saving supplies, e.g. vaccines, serums, blood)	0.4%
Other benefits	1.2%
	6.5%
Air police patrols to minor traffic flows, identify speeding vehicles surveillance, and direct emergency crews to accident sites	5.5%
Air disaster relief to flood, fire, and storm victims	
Transport of prisoners	
Other benefits	1.0%
	53.8%
Aerial photography for base mapping, surveying, public facilities planning, and environmental analysis	0.6%
Flight instruction	17.0%
Recreational flying	31.8%
Other benefits	4.4%
	35.7%
Agriculture (aerial use of pesticides, fertilizers, and seeds)	3.5%
Air freight shipments of goods and supplies	0.6%
Air taxi services and business charters	9.1%
Private business aircraft used to provide specialized services to outlying areas (e.g. doctors, lawyers, technical services)	21.5%
Other benefits	1.0%

Source: General Aviation Pilot and Aircraft Activity Survey, FAA, Office of Management Systems, 2009.

year information is available and is represented by **Figure 6.7.** The defined element for each general aviation category includes:

- **Personal/Recreation** – Flying for personal use (excludes business transportation),
- **Instructional** – Flying under the supervision of a flight instructor, including student pilot solo (excludes positioning flights, proficiency flights, training, ferrying, and sales demos),
- **Business Transportation** – Individual or group use for, or in the furtherance of, a business *without* a paid flight crew,
- **Corporate/Executive Transportation** – Individual or group business transportation *with* a paid flight crew (includes fractional ownership),
- **Air Medical Services** – Air ambulance services, rescue, human organ transportation, emergency medical services (excludes AMS conducted under FAR Part 135),
- **Sight-seeing** – Commercial sight-seeing conducted under FAR Part 91,
- **Aerial Observation** – Aerial mapping/ photography, patrol, search and rescue, hunting, traffic advisory, ranching, surveillance, oil and mineral exploration, etc.,
- **Aerial Application in Agriculture and Forestry** – Crop and timber production, including fertilizer and pesticide application,
- **Other Aerial Application** – Public health sprayings, cloud seeding, fire fighting including forest fires, etc,
- **External Load** – Operation under FAR Part 133, rotorcraft external load operations, including helicopter hoist, hauling logs, etc.,
- **Other Work Use** – Construction work (excluding FAR Part 135 operation), parachuting, aerial advertising, towing gliders, etc.,
- **Other** – Positioning flights, proficiency flights, training, ferrying, sales demos, etc.
- **Air Taxi** – FAR Part 135 *on-demand* passenger and cargo operations (excluding air tours, air medical services, or scheduled passenger service), and
- **Air Tours** – Commercial sight-seeing conducted under FAR Part 135.

Figure 6-7
General Aviation Pilot and Aircraft Activity Survey - 2009
Kerrville/Kerr county Airport - Louis Schreiner Field



Source: General Aviation Pilot and Aircraft Activity Survey, FAA, Office of Management Systems, 2009.

Chapter Seven: Airport Layout Plan

GARVER

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

Chapter 7: Airport Layout Plan

All drawings are finalized to conform with the latest FAA/ state guidelines to ensure that your airport plans are well represented, easy to understand, and ready to fund.

Introduction

A set of Airport Layout Plan (ALP) drawings has been prepared for the Kerrville / Kerr County Airport, Louis Schreiner Field, which graphically depicts the existing and proposed facilities for the airport through the 20-year planning program as recommended and approved by the local airport sponsor. The set includes: Airport Layout Drawing (ALD), Inner Portion of the Approach Surface Drawing(s), Terminal Area Plan, and Airport Property Map.

Airport Layout Drawing

A scaled single-page drawing depicting existing and ultimate airport development based on proposed land, facilities and equipment recommended for the short and long-term operation and development of the airport. In addition, the ALD displays separation and clearance distances for future unrestricted development of the airport and navigational aid (NAVAID) facilities. The layout is the result of a series of analyses and discussions with the airport sponsors and airport users to determine the optimum plan to yield a safe and cost-effective facility. The proposed improvements include projects needed to meet the projected aviation demands of the airport service area throughout the 20-year planning period.

Inner Portion of the Runway Approach Surface Drawing

Large-scale drawing showing the plan and profile views of the inner most portions of the approach surfaces and Runway Protection Zones. The plans are designed to identify current and potential structures (roadways, powerlines, trees, etc.) in relation to the existing and ultimate runway threshold. This drawing aids in determining the clearance or violation of close-in objects based on top elevations as they are encountered along the extended runway centerline and within the approach and threshold siting surfaces. Each violation and/or obstruction is identified, with appropriate future mitigation recommendations.

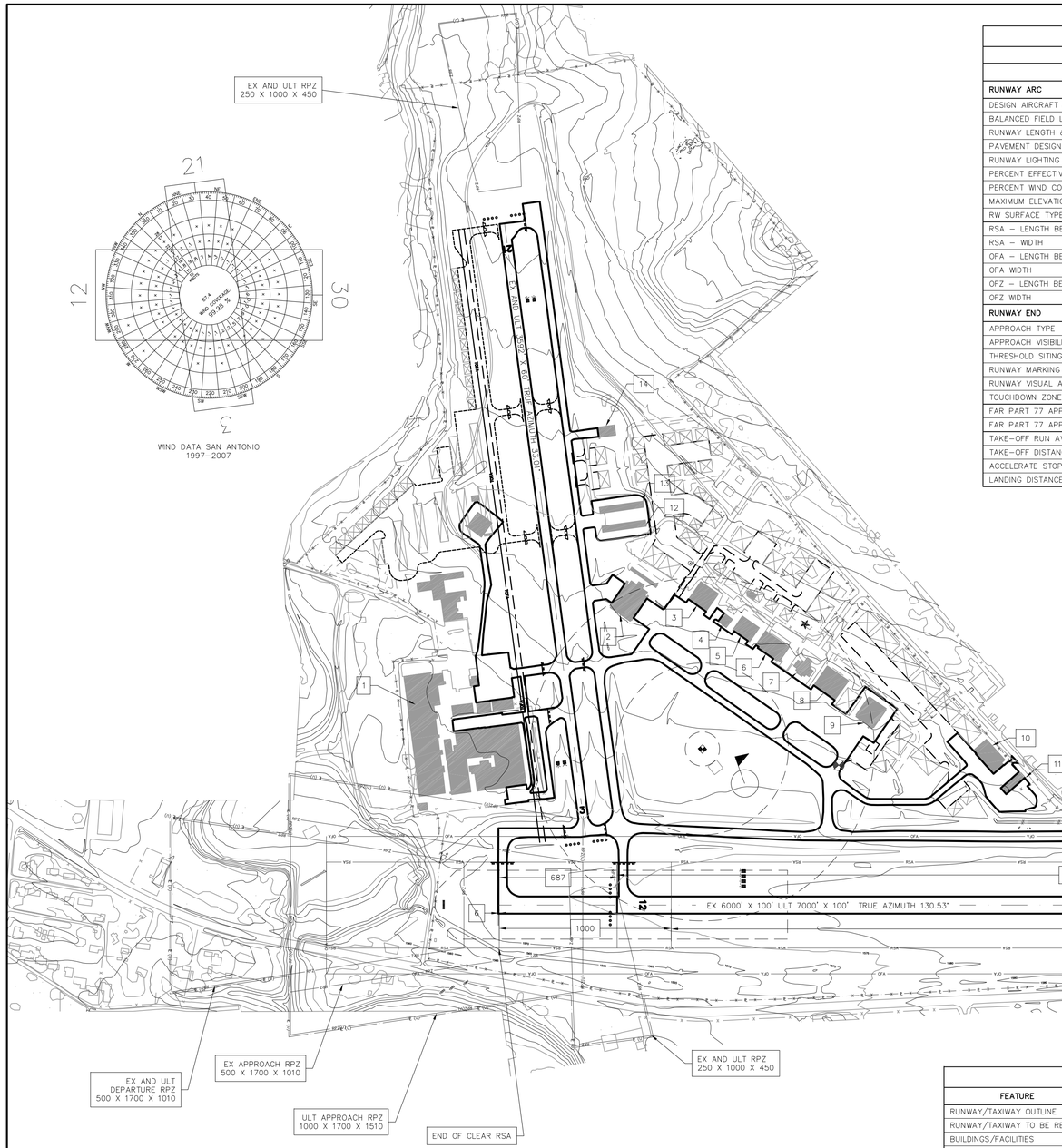
Terminal Area Plan

This is a large-scale drawing of the terminal area showing the ultimate construction of facilities to meet future terminal area requirements. The primary features of this plan include improvements to and new development of terminal area facilities and equipment. The ultimate design for the terminal area provides an adequate and functional layout for aircraft parking and maneuvering, hangar and building development, and other types of airport-related development planned for the airport. Additionally, the plan will provide adequate separation and clearances for future unrestricted development of all terminal facilities and equipment.

Airport Property Map

A single-page drawing, Exhibit "A", showing an overlay of all relevant tracts of existing airport fee-simple property and aviation/avigation easement interests including the size (acres), date (grant agreement) and existing ownership status. Typically, properties recommended for the ultimate build-out based on the recommendations of the master plan are included along with existing ownership, type of ultimate ownership by the airport, total acreage in the

parcel, and ultimate acreage needed for airport development and safety; however, TxDOT does not require this element. Therefore, the property map will only reflect the current property situation.



RUNWAY DATA TABLE								
	RW 12–30				RW 3–21			
	EXISTING		ULTIMATE		EXISTING		ULTIMATE	
RUNWAY ARC	C–II		D–II		A–I		A–I	
DESIGN AIRCRAFT & ARC	Falcon 50		GULFSTREAM IV		Socata TBM 700		Socata TBM 700	
BALANCED FIELD LENGTH	4890'		5450'		2132'		2132'	
RUNWAY LENGTH & WIDTH (ft.)	6000' X 100'		7000' 100'		3592' X 60'		3592' X 60'	
PAVEMENT DESIGN STRENGTH (1000 lbs.)	25 SW		100 DW		15 SW		15 SW	
RUNWAY LIGHTING	MIRL		MIRL		MIRL		MIRL	
PERCENT EFFECTIVE GRADIENT	0.26%		0.99%		1.13%		1.13%	
PERCENT WIND COVERAGE	99.66% 16 kts		99.66% 16 kts		95.05% 10.5 kts		95.05% 10.5 kts	
MAXIMUM ELEVATION ABOVE MSL	1589.0'		1589.0'		1616.7'		1616.7'	
RW SURFACE TYPE	ASPH		ASPH		ASPH		ASPH	
RSA – LENGTH BEYOND RW END	1000'		1000'		240'		240'	
RSA – WIDTH	500'		500'		120'		120'	
OFA – LENGTH BEYOND RW END	1000'		1000'		240'		240'	
OFA WIDTH	800'		800'		250'		250'	
OFZ – LENGTH BEYOND RW END	200'		200'		200'		200'	
OFZ WIDTH	400'		400'		250'		250'	
RUNWAY END	**12**	**30**	**12**	**30**	**3**	**21**	**3**	**21**
APPROACH TYPE	GPS	LOC GPS	GPS LPV	GPS LPV	VISUAL	VISUAL	VISUAL	VISUAL
APPROACH VISIBILITY MINIMA	1 MILE	1 MILE	3/4 MILE	3/4 MILE	VISUAL	VISUAL	VISUAL	VISUAL
THRESHOLD SITING SURFACE & SLOPE	#5 20:1	#5 20:1	#6 20:1	#6 20:1	#4 20:1	#4 20:1	#4 20:1	#4 20:1
RUNWAY MARKING	NPI	NPI	PIR	PIR	BASIC	BASIC	BASIC	BASIC
RUNWAY VISUAL AIDS	PAPI	PAPI	PAPI	PAPI	PAPI	PAPI	PAPI	PAPI
TOUCHDOWN ZONE ELEVATION	1583.9'	1575.9'	1583.9'	1575.9'	1611.1'	1616.5'	1611.1'	1616.5'
FAR PART 77 APPROACH CATEGORY	C	C	D	D	A(V)	A(V)	A(V)	A(V)
FAR PART 77 APPROACH SURFACE SLOPE	34:1	34:1	34:1	34:1	20:1	20:1	20:1	20:1
TAKE–OFF RUN AVAILABLE (TORA)	6000'	6000'	7000'	7000'	3592'	3592'	3592'	3592'
TAKE–OFF DISTANCE AVAILABLE (TODA)	6000'	6000'	7000'	7000'	3592'	3592'	3592'	3592'
ACCELERATE STOP DISTANCE AVAIL. (ASDA)	6000'	4997'	7000'	5994'	3592'	3592'	3592'	3592'
LANDING DISTANCE AVAILABLE (LDA)	5313'	4997'	6313'	5994'	3592'	3592'	3592'	3592'

BUILDING TABLE		
BUILDING NUMBER	DESCRIPTION	TOP ELEVATION
1	MOONEY AIRCRAFT PLANT	1622.4'
2	BOX HANGAR	1630.4'
3	BOX HANGAR	1627.8'
4	BOX HANGAR	1622.6'
5	BOX HANGAR	1621.8'
6	BOX HANGAR	1621.7'
7	TERMINAL	1634.6'
8	BOX HANGAR	1630.1'
9	BOX HANGAR	1618.3'
10	BOX HANGAR	1636.3'
11	HANGAR	1613.3'
12	T–HANGAR	1617.1'
13	T–HANGAR	1616.9'
14	BOX HANGAR	1627.3'
15	–	0'
16	–	0'
17	–	0'
18	–	0'
19	–	0'
20	–	0'

AIRPORT DATA TABLE		
	EXISTING	ULTIMATE
AIRPORT ELEVATION (MSL)	1616.5'	1616.5'
AIRPORT NAVIGATION AIDS	LOC, GPS	LOC, LPV GPS
MEAN MAX TEMP (Hottest Month °F)	98°F	98°F
AIRPORT REFERENCE CODE (ARC)	C–II	D–II
TAXIWAY MARKING	STD W/℄REF	STD W/℄REF
TAXIWAY LIGHTING	NONE	MITL
AIRPORT REFERENCE POINT COORDINATES	29°58'36.00" N 99°05'07.70" W	29°58'32.702" N 99°05'04.550" W

NOTES

DATUM COORDINATE SYSTEMS – HORIZONTAL DATUM NAD 1983 State Plane Texas South Central 4204 Feet, VERTICAL DATUM NAVD88.

NO RUNWAY OFZ OBJECT PENETRATIONS. RUNWAY 30 POFZ PENETRATED BY FENCE AND ROADWAY – EXTEND RUNWAY TO LESSEN PENETRATION.

A VERTICALLY–GUIDED SURVEY WAS COMPLETED MEETING THE REQUIREMENTS OF AC 150/5300–16, 17, AND 18.

RSA DOES NOT MEET STANDARDS – OPTIONS TO ACHIEVE FULL RSA:
1. USE DECLARED DISTANCES.
2. RELOCATE RW 12 END.
3. FILL IN DRAINAGE DITCH WITH BOX CULVERT AND USE DECLARED DISTANCES.

OFA DOES NOT MEET STANDARDS – MODIFICATION TO STANDARDS REQUIRED

ALD LEGEND		
FEATURE	EXISTING	ULTIMATE
RUNWAY/TAXIWAY OUTLINE		
RUNWAY/TAXIWAY TO BE REMOVED		
BUILDINGS/FACILITIES		
AIRPORT PROPERTY LINE		
AIRPORT PROPERTY LINE w/FENCE		
FENCE LINE		
BUILDING RESTRICTION LINE (BRL)		BRL 0'
AIRPORT REFERENCE POINT		
WIND CONE & SEGMENTED CIRCLE		
THRESHOLD LIGHTS		
RW END IDENTIFIER LIGHTS (REILS)		
C&G BEACON		
VGSI		
HOLD POSITION AND SIGN		
ASOS/AWOS		
PACS AND SACS MARKERS		
GROUND CONTOURS	1630	
SIGNIFICANT OBJECT LOCATION		
TREES/BRUSH		
NONDIRECTIONAL BEACON (NDB)		

WIND COVERAGE		
RUNWAY	CROSSWIND COMPONENT	PERCENT
RUNWAY 12–30	16 KNOTS	99.66%
RUNWAY 03–21	10.5 KNOTS	95.05%
COMBINED COVERAGE		**99.98%**

RUNWAY END COORDINATES AND ELEVATIONS			
RUNWAY END	LATITUDE	LONGITUDE	ELEVATION
EXISTING END OF RWY 12	29°58'42.5904" N	99°05'30.8011" W	1573'
DISPLACED THR OF RWY 12	29°58'38.1749" N	99°05'24.8558" W	1575.9'
EXISTING END OF RWY 30	29°58'03.9964" N	99°04'38.9558" W	1589'
ULTIMATE END OF RWY 30	29°57'57.558" N	99°04'30.315" W	1585'
EXISTING END OF RWY 21	29°58'42.3929" N	99°05'23.4554" W	1579.3'
EXISTING END OF RWY 3	29°59'12.2169" N	99°05'01.2042" W	1616.5'

TEXAS DEPARTMENT OF TRANSPORTATION
AVIATION DIVISION

ALP APPROVED ACCORDING TO FAA AC 150/5300–13 CHANGE 18 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING AND FAA NRA STUDY PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION ON AIRPORT PROPERTY.

DAVID FULTON, DIRECTOR, AVIATION DIVISION — DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

SPONSOR ACKNOWLEDGES APPROVAL OF ALP BY TXDOT DOES NOT CONSTITUTE A COMMITMENT TO FUNDING.

SIGNATURE — DATE

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

PREPARED BY:

TXDOT AVIATION DIV.

KS — DESIGNED BY — JAN 2012 DATE

MH — DRAWN BY — FEB 2012 DATE

AIRPORT LAYOUT DRAWING

KERRVILLE MUNI/LOUS SCHREINER FIELD
KERRVILLE, TEXAS (ERV)

Texas Department of Transportation
Aviation Division

SHEET 1 OF 1

Appendices

GARVER

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

APPENDICES

APPENDIX A
INTERLOCAL AGREEMENT

APPENDIX B
SQUARE REPORT – MOONEY AIRPLANE COMPANY

APPENDIX C
SURVEY RESPONSE DATA

APPENDIX D
AIRPORT STRATEGIC PLANNING DOCUMENT

APPENDIX E
FACILITY REQUIREMENTS SPREADSHEET

APPENDIX F
PRELIMINARY PROJECT COST ESTIMATES

APPENDIX G
AIRPORT MINIMUM STANDARDS AND REQUIREMENTS

APPENDIX H
GLOSSARY AND ACRONYMS

Appendix A
Interlocal Agreement

Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

INTERLOCAL AGREEMENT FOR THE CONTINUED EXISTENCE OF A JOINT AIRPORT BOARD TO PROVIDE MANAGEMENT OF KERRVILLE/KERR COUNTY AIRPORT

This Joint Action Agreement ("Agreement"), pursuant to Chapter 22 of the Texas Transportation Code, is entered into between Kerr County, Texas ("County") and the City of Kerrville, Texas ("City"), also referred to individually as "Party", or collectively as "Parties", on the 29th day of September, 2011.

WHEREAS, County and City jointly own the real property upon which is located the Kerrville/Kerr County Airport, sometimes referred to as Louis Schreiner Field ("Airport"); and,

WHEREAS, County and City have previously, by their actions, jointly managed said Airport under Tex. Rev. Civ. Stat. Ann. Art. 46d, Municipal Airport Act, the statutory predecessor to Chapter 22 of the Texas Transportation Code ("Code"); and

WHEREAS, County and City find that it is in the best interests of the citizens of County and City for the Airport to continue to be managed by a Joint Airport Board pursuant to the Code; and

WHEREAS, County and City are desirous of the continuous operation of the Airport in an effective manner; and

WHEREAS, County and City now reconstitute and reorganize the Joint Airport Board to reflect the terms of this Agreement;

NOW, THEREFORE, in consideration of these promises, covenants, and agreements, the Parties agree as follows:

1. **Duration of Agreement**: This Agreement shall be effective as of October 1, 2011, and remain in effect through September 30, 2012. However, prior to termination, this Agreement shall automatically renew for an additional one-year term, limited to four such one-year renewals, unless terminated as provided for below.

2. **Proportionate Interest in Airport Property**: Each Party owns an equal, undivided interest in the real property and assets located within the bounds of the Airport, more particularly described in **Exhibit A**, and as that property description may be expanded or developed, and in the buildings, improvements, and other fixtures located on the property. Title to all Airport property shall remain jointly vested in the County and City.

3. **Joint Airport Board**: The Parties affirm the creation and continued existence of the Joint Airport Board ("Board"). The Board shall consist and operate as follows:

(a) Membership. The Board shall be comprised of five members. The approval by each Party is required to constitute an appointment to the Board. The current Board

members as of September 30, 2011, are hereby reappointed by the Parties to serve the remainder of their Term of Office left as of September 30, 2011.

(b) Term of Office. Each Board member shall be appointed for a two year term and shall continue to serve in this capacity until their successor is appointed and is duly qualified. Upon the death of any member or should any member resign or for any reason become unable to serve, a replacement shall be appointed in the same manner as provided below to fill the vacancy for the unexpired term.

(c) Oath and Bond. Following appointment, each Board member shall qualify for office by taking the required oath of office before the County Judge.

(d) Appointment. The process for appointment by action of each Party shall be as designated below:

1) The Board shall recommend persons to the County and City for consideration of appointment. The Board shall submit the names of such persons to each Party at least 60 days prior to the end of the particular place's term. In the event that a candidate recommended by the Board is not appointed by either Party, the Board shall recommend an alternative candidate. In the event that this second candidate is not appointed by either Party, the Board shall select another candidate who will be automatically appointed to the Board without the approval of the Parties.

2) It is deemed desirable that all Board members possess and will contribute a balance of expertise in business, financial, aviation, or management training and experience. Appointments shall be made on or before June 1 of each year.

3) Replacement of members shall be in the same manner and under the same qualification as described above with such replacement being appointed to fulfill only that portion of the remaining term.

4) Any Board member may be removed by a majority vote of each Party, for any reason. In addition, the Board may recommend to the County and City that a Board member be removed.

5) Board members shall be eligible for reappointment, but Board members are prohibited from serving more than 3 consecutive, 2-year terms. Only reappointments made after October 1, 2011, shall count towards this limitation.

(e) Officers: The Board shall appoint a President and Vice President who shall be selected from the Board's membership. If the Board appoints a Treasurer, the Treasurer shall execute a bond in an amount determined by the Board, with a corporate surety authorized to do business in the State of Texas and conditioned upon the faithful performance of the treasurer's duties. In addition, the Board shall appoint a secretary who shall record the minutes of the Board meetings. The term for each position shall be for two years.

(f) Compensation: Service on the Board is without compensation. However, each Board member is entitled to reimbursement for necessary expenses incurred in the performance of his/her duties as a Board member, subject to the Board Budget and a written Board policy regarding the reimbursement of expenses, which has been approved by each Party.

(g) Authority, Powers and Duties: The Board shall have the following authority, powers and duties:

1) The Board may exercise on behalf of the Parties any power possessed by either Party and those specifically provided by the Code, including the power to lease property and facilities, and to buy and sell goods as an incident to the operation of the Airport. However, the Board is not authorized to impose a property tax, sell bonds, or otherwise enter into other debt instruments, dispose of Airport property, or exercise the power of eminent domain without the prior written consent of each Party.

2) The Board, following the prior written consent of each Party, has the authority to apply for and to execute grant funding agreements.

3) The Board may improve, equip, maintain, operate, manage, regulate, protect, and police the Airport.

4) The Board may realign, alter, acquire, abandon, or close a portion of a roadway or alleyway without a showing of paramount importance if the portions to be realigned, altered, abandoned, or closed are in the geographical boundaries of the Airport at the time of or after the realignment, alteration, acquisition, abandonment, or closing.

5) The Board shall have the responsibility and be in charge of the property, improvements, and other assets of the Airport and shall be in charge of the disbursement of Airport funds for Airport purposes, and pursuant to the approved Board Budget. The Board shall also cause records to be kept of any and all revenues and disbursements.

6) The Board shall maintain a fund for the purpose of depositing all revenues of the Airport, including each Party's share of the operating costs. This fund shall be kept and managed by the Board and shall be established at a bank with a branch in Kerr County. Federal, state, or other contributions or loans and the revenue obtained from the operation of the Airport shall be deposited to the credit of the joint fund.

7) The Board shall have an audit of the financial affairs of the Board and its operation of the Airport conducted each year by an independent accountant and shall furnish the audit to each Party no later than February 28 of each year.

8) The Board shall ensure that all records regarding the operation of the Airport are maintained, retained, and made available for public review in accordance with the Texas Public Information Act. All records shall be maintained at the Airport.

9) The Board shall hire and employ an Airport Manager ("Manager") and such other employees as are necessary for the operation of the Airport. The Board shall develop a written job description for the Manager and shall include written performance criteria, goals, and benchmarks that the Manager is required to meet each year. The Board shall include such documents as part of the Board Budget which is subject to yearly approval by each Party.

10) The Board, through its Manager and any other employees, shall be responsible for the day-to-day management of the Airport. Toward that end, the Board is authorized to enter into service contracts with other public or private entities, but where such a contract exceeds $25,000.00; both Parties must approve the contract.

11) The Board may adopt resolutions, rules, and orders for the operation of the Airport.

12) The Board may lease Airport property and may adopt fees and rental rates with respect to the use of Airport services or use of Airport property. Such fees and rates shall be included within the Board Budget, which may be amended by the approval of both Parties.

13) The Parties acknowledge that the Airport property is within the City's limits and is subject to the City's regulations and that land adjacent to the Airport but outside the City limits is subject to the adoption, administration, and enforcement by either a County or Joint Airport Zoning Board of airport hazard area and compatible land use zoning. However, the Board shall monitor and consider appropriate zoning for the Airport and the immediately surrounding areas whose use may impact Airport operations.

14) The Board shall adopt policies and procedures for the purchase of goods and services and for the accounting of the Airport's finances, each in accordance with state law.

15) The Board may insure itself, its contractors and subcontractors against liability arising from the operation of the Airport for damages to the person or property of others, workers' compensation, and officers' and employees' liability. The insurance may consist of self-insurance and/or purchased insurance.

16) The Board is prohibited from giving, leasing, or otherwise allowing the use of any part of the Airport for no value, without first having received approval from both Parties.

17) The Board shall comply with the Code and other state laws and local laws in all respects.

(h) Meetings: The Board shall meet on dates and times as agreed upon by the Board, which schedule may be changed from time to time; however in no event shall the Board meet less frequently than once per calendar quarter. The President of the Board or any two Board members shall have the authority to call a meeting. All such meetings of the Board shall be held in accordance with the Texas Open Meetings Act and three members of the Board shall constitute a quorum of the Board. The Board shall make its own rules of order, by-laws, set the time and place for regular meetings, and shall keep minutes of its meetings.

(i) Fiscal year. The Board shall observe a fiscal year that begins each October 1 and ends September 30.

(j) Reporting. The Board through its Manager shall provide quarterly written reports to each Party (1) regarding the operations of the Airport and its finances; and (2) encompassing the information required by ¶6(d).

(k) Litigation. The Board shall not enter into litigation of any kind without prior approval from both Parties. However, the Board may provide an appropriate response to a lawsuit or claim filed against it in an effort to protect its rights and defenses prior to any approval from both Parties.

4. **Board Budget**: The Board is responsible for the operations and needs of the Airport and shall develop a budget for Airport operations ("Board Budget") to be approved by both Parties. The Board Budget shall consist of the following parts: 1) maintenance and operations; and 2) capital improvements. In addition, the Board shall include as an addendum to the Board Budget a description and discussion of, at a minimum, proposed capital improvements looking forward 5 years. For purposes of this Agreement, "capital improvements" are defined as a project that will result in a physical object with a value of $5,000.00 or more. The Board shall submit and present the Board Budget to the County and the City for approval. Should either Party not approve the Board Budget, the previous year's Board Budget shall be automatically adopted for the upcoming year.

(a) Submission Required. The Board shall submit the Board Budget to both Parties not later than June 1st of each year for Parties' consideration no later than September 30 of each year.

(b) Content and Format. The Board Budget shall substantially conform to the format and line item content as specified and depicted in **Exhibit B**.

(c) Excess Spending. The Board shall not spend nor incur obligations which at any time will exceed the Board Budget approved and adopted by the County and City for that current fiscal year, except for an emergency expenditure, which is declared by the Board President. An "emergency expenditure" is defined as an expenditure necessary for the immediate preservation of the public peace, property, health, or safety. Prior to or immediately following such expenditure, the Board President shall notify the County Judge and Mayor in writing of the declared emergency expenditure.

(d) Movement between Funds. The Board is authorized to move funds between line items concerning maintenance and operating expenses, but in no event shall the funds being moved over a fiscal year period exceed 5% of the Board Budget for that year.

(e) Airport Revenues. The Board shall only use revenues generated by operation of the Airport for Airport purposes.

(f) Board Budget Calculation. The Board shall create a draft Board Budget as follows:

(1) Total of all revenues, not including contributions from the Parties, less total expenses, which shall include all grant matches.

(2) Where a negative sum occurs, the Board shall seek contributions from the Parties as provided below.

(3) In no case shall contingency funds exceed 5% of the amount budgeted for annual maintenance and operating expenses.

5. **County and City Funding**: To assure the objective of the continuation of efficient Airport operations, each Party is obligated to the other Party to contribute funds as follows:

(a) Maintenance and Operations. The County and City shall each fund one-half (1/2) of all the costs related to the maintenance and operations part of the Board Budget or the County and City shall each fund $110,000.00, whichever is less.

(b) Capital Improvements. The County and City shall be equally responsible for expenses directly resulting from the part of the Board Budget regarding capital improvements. On an annual basis as part of the draft Board Budget review process, both Parties must review proposed capital improvement projects. Only those projects approved as part of the Board Budget shall be submitted for bidding, where applicable, and construction.

(c) Schedule of Payments. Pursuant to the Board Budget and the amount of each Party's contributions, each Party shall forward 12 equal monthly payments to the Board in the amount of $1/12^{th}$ of their total contribution on or before the 15^{th} day of each month.

6. Airport Planning Committee. The Parties hereby create an Airport Planning Committee ("Committee") as follows:

(a) Membership. The Committee shall consist of the following persons:

(1) County Appointees. The Commissioners Court shall appoint 3 representatives to the Committee, which shall consist of no more than 2 members of the Commissioners Court.

(2) City Appointees. The City Council shall appoint 3 representatives to the Committee, which shall consist of no more than 2 Councilmembers.

(3) Board Appointee. The Board shall appoint 2 representatives to the Committee .

(b) Meetings. The Committee shall meet no less than once per calendar quarter.

(c) Purpose. The purpose of the Committee is to (1) receive and discuss in detail from the Board information regarding the operations of the Airport and its finances; (2) discuss short and long term planning for the operation, management, and economic development of the Airport; and (3) formulate recommendations to be presented to each Party regarding the short and long term goals for the Airport.

(d) Reports. Following its meetings, the Manager shall provide quarterly written reports to each Party regarding the information presented during the meeting and recommendations of the Committee.

7. Amendment: This Agreement may only be amended by written agreement of the Parties.

8. Termination of Agreement Prior to Expiration: Either party may terminate the Agreement for any reason upon the terminating Party giving the nonterminating Party no less than one-hundred eighty (180) days written notice thereof.

9. Notices: Any notice required or permitted to be given pursuant to this Agreement or under the laws of this state shall be given in writing and may be given via the United States Postal Service, certified mail, or commercial courier service, addressed to the applicable Party at the address set forth below:

City: City of Kerrville
Attention: City Manager
800 Junction Highway
Kerrville, TX 78028

County: Kerr County, Texas
Attention: County Judge
Kerr County Courthouse
700 Main Street
Kerrville, TX 78028

Board: Joint Airport Board
Attention: Airport Manager
Kerrville/Kerr County Airport
1875 Airport Loop Road
Kerrville, TX 78028

10. Governing Law and Venue: This Agreement and all of the transactions contemplated herein shall be governed by and construed in accordance with the laws of the State of Texas. Venue for any cause of action shall be in a court of competent jurisdiction in Kerr County, Texas.

11. Severability: If any provision of this Agreement is invalid or unenforceable, this Agreement shall be considered severable as to such provision, and the remainder of this Agreement shall remain valid and binding as though such invalid or unenforceable provision was not included.

12. Captions: Section headings are inserted herein only as a matter of convenience and for reference, and in no way defines, limits, or describes the scope or intent to any provision.

13. Use of Language: Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural, unless the context otherwise requires.

14. Entire Agreement: This Agreement embodies the entire agreement between the Parties, and supersedes all prior agreements and understandings, whether written or oral, and all contemporaneous oral agreements and understandings relating to the subject matter. This Agreement shall not be amended, discharged or extended, except by written instrument executed by the Parties. The Parties agree that no representations or warranties shall be binding upon either Party unless expressed in writing in the Agreement.

15. Multiple Counterparts: This Agreement may be executed in multiple counterparts, each of which constitutes an original.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be legally executed this 29th day of September, 2011.

CITY OF KERRVILLE

By: _____
David Wampler, Mayor

ATTEST:

_____
Brenda G. Craig, City Secretary

APPROVED AS TO FORM:

_____
Michael C. Hayes, City Attorney

COUNTY OF KERR, TEXAS

By: _____
Pat Tinley, County Judge

ATTEST: Jannett Pieper
By Lyca Thompson, Deputy
Jannett Pieper, County Clerk

APPROVED AS TO FORM:

_____
Robert Henneke, County Attorney

COMMISSIONERS COURT
KERR COUNTY, TEXAS

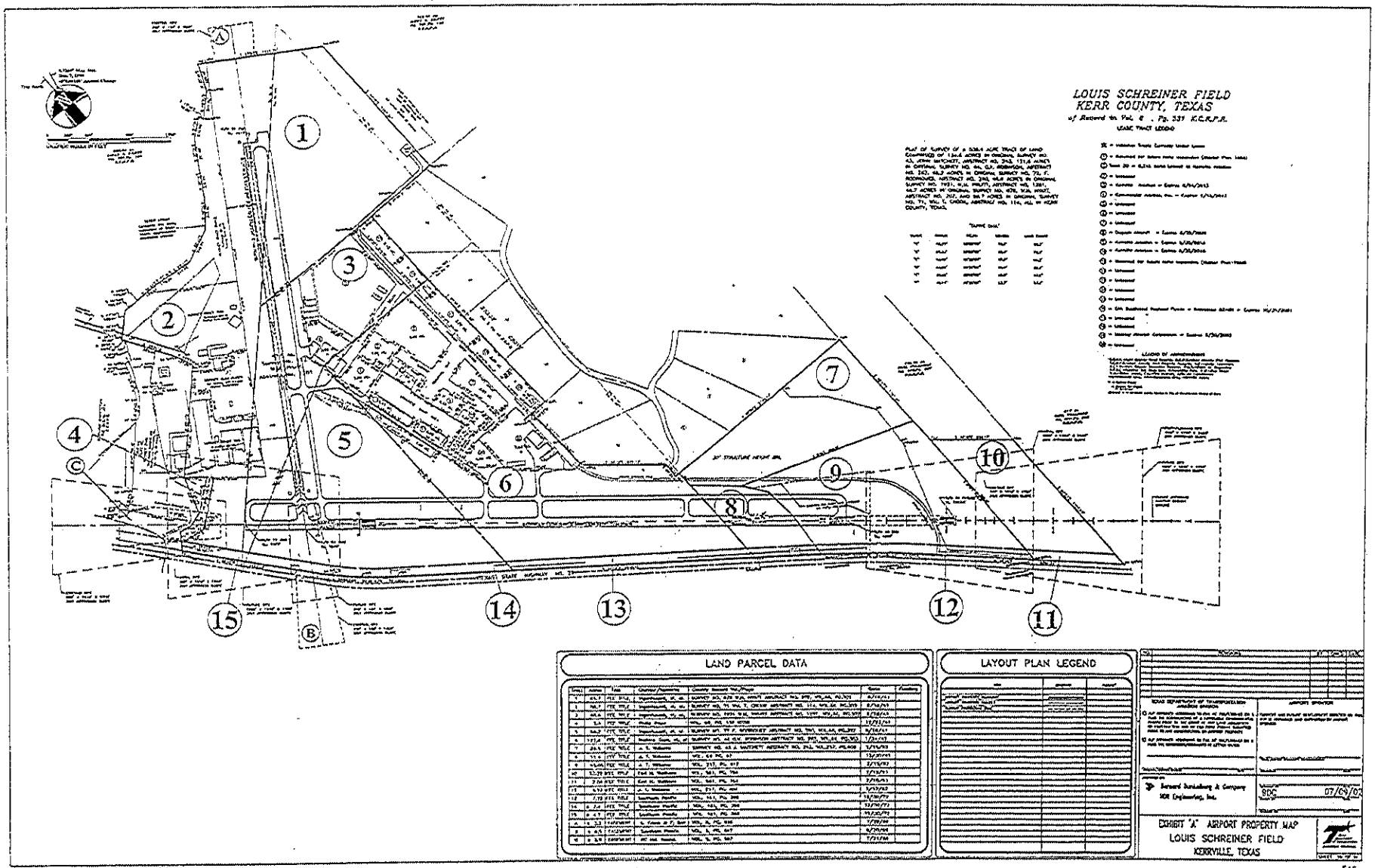


Figure E10 Airport Property Map

Exhibit "A"

C.200443 R.080-2004

KERRVILLE-KERR COUNTY JOINT AIRPORT BOARD - EXHIBIT B

09/28/2011 1

BUDGET COMPARISON

FOR 2006 - 2012

Revenues		2006	2007	2008	2009	2010	2011 Budget Approved	2011 YTD Actual Thru 5/31/11	2012 Proposed
47-AIRPORT									
INTERGOVERNMENTAL REVENUE									
47-300-602	KERR COUNTY								
47-300-603	KERRVILLE								
47-300-604	GRANTS								
47-300-606	TX DOT REIMBURSEMENT								
TOTAL INTERGOVERNMENTAL REVENUE		0	0	0	0	0	0	0	0
LEASE/RENTAL INCOME									
47-325-301	AIRPORT LAND LEASES								
47-325-602	TERMINAL LEASES								
47-325-603	T-HANGAR LEASES								
47-325-604	VEHICLE RENTAL SURCHARGE								
47-325-605	T-HANGAR STORAGE FACILITY LEASES								
TOTAL LEASE/RENTAL INCOME		0	0	0	0	0	0	0	0
REIMBURSEMENT									
47-350-601	FUEL FLOW FEES								
47-350-602	OTHER								
TOTAL REIMBURSEMENT		0	0	0	0	0	0	0	0
INTEREST INCOME									
47-380-601	INTEREST INCOME								
TOTAL INTEREST INCOME		0	0	0	0	0	0	0	0
TRANSFER IN									
47-390-601									
47-390-610	TRANSFER IN								
TOTAL TRANSFER IN		0	0	0	0	0	0	0	0
***** TOTAL REVENUES *****		0	0	0	0	0	0	0	0

KERRVILLE-KERR COUNTY JOINT AIRPORT BOARD

BUDGET COMPARISON

FOR 2006 - 2012

Expenses		2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Budget Approved*	2011 YTD Actual Thru 5/31/11	2012 Proposed
SALARIES & BENEFITS									
47-700-101	AIRPORT MANAGER								
47-700-102	OFFICE PERSONNEL PART TIME								
47-700-104	AIRPORT MAINTENANCE STAFF								
47-700-205	OVERTIME								
800-003	TEMPORARY EMPLOYEE								
800-004	LONGEVITY								
47-700-201	FICA								
800-005	SOCIAL SECURITY								
47-700-203	RETIREMENT								
47-700-202	GROUP INSURANCE								
47-700-204	WORKMAN'S COMP								
TOTAL SALARIES & BENEFITS		0	0	0	0	0	0	0	0
AIRPORT									
47-800-008	PROFESSIONAL DEVELOPMENT								
47-800-009	LOCAL MEETING EXPENSE								
47-800-010	PROFESSIONAL SERVICES								
47-800-101	OFFICE SUPPLIES								
47-800-102	SMALL TOOLS AND EQUIPMENT								
47-800-103	CHEMICAL AND MEDICAL SUPPLIES								
47-800-104	FUEL AND OIL SUPPLIES								
47-800-105	FOOD SUPPLIES								
47-800-106	JANITORIAL SUPPLIES								
800-107	WEARING APPAREL								
47-800-107	POSTAGE								
47-800-108	UPS/FED-EX								
800-111	COMPUTER UPGRADE								
47-800-109	COMPUTER SOFTWARE								
47-800-110	SOD, SEED, PLANTING								
47-800-111	VEHICLE PARTS								
47-800-201	LAND								
47-800-202	BUILDINGS AND STRUCTURES								
47-800-203	VEHICLE MAINTENANCE								
800-204	PARTS @ CITY GARAGE								
47-800-204	OFFICE EQUIPMENT								
47-800-205	INSTRUMENTS AND APPARATUS								
47-800-206	STREETS & ASPHALT REPAIR								
47-800-207	TRAFFICE CONTROL DEVICES								
47-800-208	TAXIWAYS/RUNWAYS								

KERRVILLE-KERR COUNTY JOINT AIRPORT BOARD

BUDGET COMPARISON

FOR 2006 - 2012

Expenses		2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Budget Approved	2011 YTD Actual Thru 5/31/11	2012 Proposed
47-800-209	REPAIRS-GENERAL								
800-214	RAMP GRANT MATCH								
47-800-301	CONTRACT SERVICES								
47-800-302	PROPERTY INSURANCE								
47-800-303	LIABILITY INSURANCE								
47-800-304	SPECIAL SERVICES								
47-800-305	EQUIPMENT RENTAL								
47-800-306	ADVERTISING								
47-800-307	MANAGEMENT CONTRACT								
47-800-308	REIMBURSE COUNTY EMPLOYEE								
47-800-309	OUTSOURCED SERVICES								
47-800-310	CONTINGENCY								
47-800-311	LEGAL SERVICES								
47-800-401	PHONE SERVICE								
47-800-402	CELL PHONE SERVICE								
47-800-406	LIGHT AND POWER								
47-800-403	NATURAL GAS/PROPANE								
47-800-404	WATER & SEWER								
47-800-405	INTERNET PROVIDER								
47-800-501	CERTIFICATES, AWARDS, ETC								
47-800-503	DUES AND SUBSCRIPTIONS								
800-503	MOTOR VEHICLE								
47-800-505	OTHER CHARGES								
47-800-507	CONTINGENCY								
47-800-509	DEPRECIATION EXPENSE								
800-510	WATER SYSTEM IMPROVEMENTS								
47-800-511	OTHER EXPENSE								
47-800-513	RESERVE FOR CAPITAL								
47-800-901	TRANSFER OUT - GENERAL								
47-800-902	TRANSFER OUT - MAINTENANCE								
47-800-903	TRANSFER OUT - ROAD & BR								
TOTAL AIRPORT		0	0	0	0	0	0	0	0

KERRVILLE-KERR COUNTY JOINT AIRPORT BOARD

BUDGET COMPARISON

FOR 2006 - 2012

Expenses		2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Budget Approved	2011 YTD Actual Thru 5/31/11	2012 Proposed
TERMINAL									
47-801-101	SUPPLIES								
47-801-300	PHONE SERVICES								
47-801-301	LIGHT & POWER								
47-801-302	PROPANE GAS								
47-801-303	WATER & SEWER								
TOTAL 01-TERMINAL		0	0	0	0	0	0	0	0
***** TOTAL EXPENSES *****		0	0	0	0	0	0	0	0
REVENUE OVER/(UNDER) EXPENDITURES		-	-	-	-	-	-	-	-
M&O EXPENDITURES		0	0	0	0	0	0	0	0
Note:	**Changes approved by Board**								

KERRVILLE-KERR COUNTY JOINT AIRPORT BOARD

BUDGET COMPARISON

FOR 2006 - 2012

Revenues		2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Budget Approved	2011 YTD Actual Thru 5/31/11	2012 Proposed
48 - AIRPORT CAPITAL									
Reimbursement									
	CAPITAL GRANTS - TXDOT								
48-350-100	REIMBURSEMENT FM TX DOT								
TOTAL Reimbursement		0	0	0	0	0	0	0	0
Intergovernmental									
48-351-100	KERR COUNTY RAMP GRANT M								
48-351-101	CITY OF KVILLE RAMP GRANT								
48-351-102	KERR COUNTY PROJECT MATCH								
48-351-103	CITY OF KERRVILLE PROJECT MATCH								
TOTAL Intergovernmental		0	0	0	0	0	0	0	0
Transfers In									

48-500-100	TRANSFER IN - GENERAL								
48-500-110	TRANSFER IN - AIRPORT								
48-500-405	TRANSFER IN								
TOTAL Transfers In		0	0	0	0	0	0	0	0
TOTAL REVENUES		0	0	0	0	0	0	0	0

KERRVILLE-KERR COUNTY JOINT AIRPORT BOARD
BUDGET COMPARISON
FOR 2006 - 2012

Expenses		2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Budget Approved	2011 YTD Actual Thru 5/31/11	2012 Proposed
CAPITAL OUTLAY									
800-201	LAND MAINTENANCE								
800-202	BUILDING & STRUCTURE MAINT								
800-405	OTHER CHARGES								
48-600-101	LAND								
48-600-102	BUILDINGS AND STRUCTURES								
800-507	STREET IMPROVEMENTS								
48-600-103	WATER SYSTEM IMPROVEMENTS								
800-500	CAPITAL OUTLAY								
48-600-104	GRANT MATCH								
48-600-105	DRAINAGE IMPROVEMENTS								
48-600-106	GRANT MATCH T-HANGAR 2001								
48-600-107	TXDOT REIMBURSE 2000-2001								
48-600-108	RELOCATE 12/30 PARALLEL								
48-600-109	ENGINEERING SVCS/DESIGN								
48-600-110	MASTER PLAN								
48-600-111	SURVEYING								
48-600-112	CONTRACT SERVICES								
48-600-113	INSTRUMENTS AND APPARATUS								
48-600-114	REHAB AIRPORT RUNWAY								
48-600-115	SITE PREP FUTURE HANGAR								
800-517	CITY T-HANGAR 2001								
800-518	KERR COUNTY T-HANGAR 2001								
800-519	GRANT MATCH LIGHTING IMPROVE								
800-520	TXDOT REIMBURSEMENT LIGHTING								
800-948	TRANSFER OUT								
TOTAL CAPITAL OUTLAY		0	0	0	0	0	0	0	0
TOTAL EXPENDITURES		0	0	0	0	0	0	0	0
REVENUE OVER/(UNDER) EXPENDITURES		-	-	-	-	-	-	-	-

INTERLOCAL AGREEMENT FOR THE CONTINUED EXISTENCE OF A JOINT AIRPORT BOARD TO PROVIDE MANAGEMENT OF KERRVILLE/KERR COUNTY AIRPORT

This Joint Action Agreement ("Agreement"), pursuant to Chapter 22 of the Texas Transportation Code, is entered into between Kerr County, Texas ("County") and the City of Kerrville, Texas ("City"), also referred to individually as "Party," or collectively as "Parties", on the 13 day of August, 2008.

WHEREAS, County and City jointly own the real property upon which is located the Kerrville/Kerr County Airport, sometimes referred to as Louis Schreiner Field ("Airport"); and,

WHEREAS, County and City have previously, by their actions, jointly managed said Airport under Tex. Rev. Civ. Stat. Ann. Art 46d, Municipal Airport Act, the statutory predecessor to Chapter 22 of the Texas Transportation Code ("Code"); and

WHEREAS, County and City find that it is in the best interests of the citizens of County and City for the Airport to continue to be managed by a Joint Airport Board pursuant to the Code; and

WHEREAS, County and City are desirous of the continuous operation of the Airport in an effective manner; and

WHEREAS, County and City now reconstitute and reorganize the Joint Airport Board to reflect the terms of this Agreement;

NOW, THEREFORE, in consideration of these promises, covenants, and agreements, the Parties agree as follows:

1. **Duration of Agreement**: This Agreement shall be effective on the date it is fully executed by the Parties, and shall terminate on September 30, 2013. Thereafter, this Agreement shall automatically be renewed for five year terms, unless terminated as provided for below.

2. **Proportionate Interest in Airport Property**: Each Party owns an equal, undivided interest in the real property and assets located within the bounds of the Airport, more particularly described in **Exhibit A**, and as that property description may be expanded or developed, and in the buildings, improvements, and other fixtures located on the property. Title to all Airport property shall remain jointly vested in the County and City.

3. **Joint Airport Board**: The Parties affirm the creation and continued existence of the Joint Airport Board ("Board"). The Board is reconstituted and shall consist and operate as follows:

(a) Membership. The Board shall be comprised of five members. The approval by each Party is required to constitute an appointment to the Board and current Board members shall be subject to reappointment by the Parties without Board

recommendation as it is the intent of this Agreement to reconstitute and reorganize the Board. Following the appointments and/or any reappointments to the Board, each Board member shall be assigned at random to hold one of the five places that comprise the Board.

(b) Term of Office. Each Board member shall be appointed for a two year term and shall continue to serve in this capacity until their successor is appointed and is duly qualified. Upon the death of any member or should any member resign or for any reason become unable to serve, a replacement shall be appointed in the same manner as provided below to fill the vacancy for the unexpired term. Following the execution of this Agreement, the terms of those Board members who are serving in Places 1, 3, or 5 shall expire on June 1, 2010. The terms for those Board members appointed to Places 2 and 4 shall expire on June 1, 2011.

(c) Oath and Bond. Following appointment, each Board member shall qualify for office by taking the required oath of office before the County Judge.

(d) Appointment. The process for appointment by action of each Party shall be as designated below:

1) The Board shall recommend persons to the County and City for consideration of appointment. The Board shall submit the names of such persons to each Party at least 60 days prior to the end of the particular place's term. In the event that a candidate recommended by the Board is not appointed by either Party, the Board shall recommend an alternative candidate. In the event that this second candidate is not appointed by either Party, the Board shall select another candidate who will be automatically appointed to the Board without the approval of the Parties.

2) It is deemed desirable that all Board members possess and will contribute a balance of expertise in business, financial, aviation, or management training and experience. Appointments shall be made on or before June 1 of each year.

3) Replacement of members shall be in the same manner and under the same qualification as described above with such replacement being appointed to fulfill only that portion of the remaining term.

4) Any Board member may be removed by a majority vote of each Party, for any reason. In addition, the Board may recommend to the County and City that a Board member be removed.

5) Board members shall be eligible for reappointment.

(e) Officers. The Board shall appoint a President and Vice President who shall be selected from the Board's membership. If the Board appoints a Treasurer, the Treasurer shall execute a bond in an amount determined by the Board, with a corporate surety authorized to do business in the state of Texas and conditioned upon

the faithful performance of the treasurer's duties. In addition, the Board shall appoint a secretary who shall record the minutes of the Board meetings. The term for each position shall be for two years.

(f) Compensation. Service on the Board is without compensation. However, each Board member is entitled to reimbursement for necessary expenses incurred in the performance of his/her duties as a Board member, subject to a written Board policy regarding the reimbursement of expenses, which has been approved by each Party.

(g) Authority, Powers and Duties. The Board shall have the following authority, powers, and duties:

1) The Board may exercise on behalf of the Parties any power possessed by either Party and those specifically provided by the Code, including the power to lease property and facilities, and to buy and sell goods as an incident to the operation of the Airport. However, the Board is not authorized to impose a property tax, sell bonds, or otherwise enter into other debt instruments, dispose of Airport property, or exercise the power of eminent domain without the prior written consent of each Party.

2) The Board, following the prior written consent of each Party, has the authority to apply for and to execute grant funding agreements.

3) The Board may improve, equip, maintain, operate, manage, regulate, protect, and police the Airport.

4) The Board may realign, alter, acquire, abandon, or close a portion of a roadway or alleyway without a showing of paramount importance if the portions to be realigned, altered, acquired, abandoned, or closed are in the geographical boundaries of the Airport at the time of or after the realignment, alteration, acquisition, abandonment, or closing.

5) The Board shall have the responsibility and be in charge of the property, improvements, and other assets of the Airport and shall be in charge of the disbursement of Airport funds for Airport purposes. The Board shall also cause records to be kept of any and all revenues and disbursements.

6) Within 30 days following the execution of this Agreement and the appointment(s) and/or reappointment(s) of Board members by the Parties, the Board shall establish a fund to be maintained for the purpose of depositing all revenues of the Airport, including each Party's share of the operating costs. This fund shall be kept and managed by the Board and shall be established at a bank with a branch in Kerr County. Federal, state, or other contributions or loans and the revenue obtained from the operation of the Airport shall be deposited to the credit of the joint fund.

7) The Board shall have an audit of the financial affairs of the Board and its operation of the Airport conducted each year by an independent accountant and shall furnish the audit to each Party no later than December 1 of each year.

8) The Board shall ensure that all records regarding the operation of the Airport are maintained, retained, and made available for public review in accordance with the Texas Public Information Act. All records shall be maintained at the Airport.

9) The Board shall hire and employ an Airport Manager ("Manager") and such other employees as are necessary for the operation of the Airport. The Manager shall be hired as soon as possible after execution of this Agreement.

10) The Board, through its Manager and any other employees, shall be responsible for the day-to-day management of the Airport. Toward that end, the Board is authorized to enter into service contracts with other public or private entities.

11) The Board may adopt resolutions, rules, and orders for the operation of the Airport.

12) The Board may lease Airport property and may adopt fees and rental rates with respect to the use of Airport services or use of Airport property. Such fees and rates should be, to the extent possible, included within the Board Budget.

13) The Parties acknowledge that the Airport property is within the City's limits and is subject to the City's regulations and that land adjacent to the Airport but outside the City limits is subject to the adoption, administration, and enforcement by either a County or Joint Airport Zoning Board of airport hazard area and compatible land use zoning. However, the Board shall monitor and consider appropriate zoning for the Airport and the immediately surrounding areas whose use may impact Airport operations.

14) The Board shall adopt policies and procedures for the purchase of goods and services and for the accounting of the Airport's finances, each in accordance with state law.

15) The Board may insure itself, its contractors and subcontractors against liability arising from the operation of the Airport for damages to the person or property of others, workers' compensation, and officers' and employees' liability. The insurance may consist of self-insurance and/or purchased insurance.

16) The Board shall comply with the Code and other state laws and local laws in all respects.

(h) Meetings. The newly reconstituted Board shall meet within 15 days following the execution of this Agreement and the appointment(s) and/or reappointment(s) of Board

members by the Parties. Thereafter, the Board shall meet on dates and times as agreed upon by the Board, which schedule may be changed from time to time; however in no event shall the Board meet less frequently than once per calendar quarter. The President of the Board or any two Board members shall have the authority to call a meeting. All such meetings of the Board shall be held in accordance with the Texas Open Meetings Act and three members of the Board shall constitute a quorum of the Board. The Board shall make its own rules of order, by-laws, set the time and place for regular meetings, and shall keep minutes of its meetings.

(i) Fiscal year. The Board shall observe a fiscal year that begins each October 1 and ends September 30.

(j) Reporting. The Board shall provide quarterly written reports to each Party regarding the operations of the Airport and its finances.

(k) Litigation. The Board shall not enter into litigation of any kind without prior approval from the Parties. However, the Board may provide an appropriate response to a lawsuit or claim filed against it in an effort to protect its rights and defenses prior to any approval from the Parties.

4. **Board Budget**: The Board is responsible for the operations and needs of the Airport and shall develop and approve a budget for Airport operations ("Board Budget"). The Board Budget shall consist of the following parts: 1) maintenance and operations; and 2) capital improvements. For purposes of this Agreement, "capital improvements" are defined as a project that will result in a physical object with a value of $25,000 or more. The Board shall submit and present the Board Budget to the County and the City for approval. Should either Party not approve the Board Budget, the previous year's Board Budget shall be automatically adopted for the upcoming year.

(a) Submission Required. The Board shall submit the Board Budget to both Parties not later than June 30th of each year for Parties' consideration no later than September 30 of each year.

(b) Content and Format. The Board Budget shall substantially conform to the format and line item content as specified and depicted in **Exhibit B**.

(c) Excess Spending Prohibited. Without the prior written approval of each Party, the Board shall not spend nor incur obligations which at any time will exceed the total amount of the Board Budget adopted by the County and City for that fiscal year.

(d) Airport Revenues. The Board shall only use revenues generated by operation of the Airport for Airport purposes.

(e) Board Budget Calculation. The Board shall determine the Board Budget as follows:

(1) Total of all revenues, not including contributions from the Parties, less total expenses, which shall include all grant matches.

(2) Where a negative sum occurs, the Board shall seek contributions from the Parties as provided below.

5. **County and City Funding**: To assure the objective of the continuation of efficient Airport operations, each Party is obligated to the other Party to contribute funds as follows:

(a) Maintenance and Operations for Fiscal Years 2009 through 2011. Subject to the authority of each party to terminate the Agreement at the end of any fiscal year, the County and City shall fund all the costs related to the maintenance and operations part of the Board Budget over the next three fiscal years (2009, 2010, 2011) in the following percentages:

	FY 09	FY 10	FY 11
County	**50% [*$187,000]**	**75%**	**100%**
City	**50% [*$187,000]**	**25%**	**0%**

*The Parties have determined the amount of the FY 2009 Board Budget and these values reflect that amount.

(b) County's Responsibility for Maintenance and Operations Costs for Fiscal Year 2012 and beyond. The County shall continue to fund all of the costs related to the maintenance and operations part of the Board Budget for Fiscal Year 2012 and beyond. The City shall not fund any of the maintenance and operations part of the Board Budget and will continue to maintain its 50% ownership interest in the Airport.

(c) Capital Improvements. The County and City shall be equally responsible for expenses directly resulting from the part of the Board Budget regarding capital improvements.

(d) Schedule of Payments. Pursuant to the Board Budget and the amount of each Party's contributions, each Party shall forward 12 equal monthly payments to the Board in the amount of $1/12^{th}$ of their total contribution on or before the 15^{th} day of each month.

6. **Amendment**: This Agreement may only be amended by written agreement of the Parties.

7. **Termination of Agreement Prior to Expiration**: This Agreement may be terminated by either Party to become effective at the end of the current fiscal year. To effectuate the termination, the Party seeking termination must provide written notice to the other Party at least 90 days prior to the end of the fiscal year.

8. **Notices**: Any notice required or permitted to be given pursuant to this Agreement or under the laws of this state shall be given in writing and may be given via the United States Postal Service, certified mail, or commercial courier service, addressed to the applicable Party at the address set forth below:

City: City of Kerrville
Attention: City Manager
800 Junction Highway
Kerrville, Texas 78028

County: Kerr County, Texas
Attention: County Judge
Kerr County Courthouse
700 Main Street
Kerrville, Texas 78028

Board: Joint Airport Board
Attention: Airport Manager
Kerrville/Kerr County Airport
1875 Airport Loop Road
Kerrville, Texas 78028

9. **Governing Law and Venue**: This Agreement and all of the transactions contemplated herein shall be governed by and construed in accordance with the laws of the State of Texas. Venue for any cause of action shall be in a court of competent jurisdiction in Kerr County, Texas.

10. **Severability**: If any provision of this Agreement is invalid or unenforceable, this Agreement shall be considered severable as to such provision, and the remainder of this Agreement shall remain valid and binding as though such invalid or unenforceable provision was not included.

11. **Captions**: Section headings are inserted herein only as a matter of convenience and for reference, and in no way defines, limits, or describes the scope or intent to any provision.

12. **Use of Language**: Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural, unless the context otherwise requires.

13. **Entire Agreement**: This Agreement embodies the entire agreement between the Parties, and supersedes all prior agreements and understandings, whether written or oral, and all contemporaneous oral agreements and understandings relating to the subject matter. This Agreement shall not be amended, discharged or extended, except by written instrument executed by the Parties. The Parties agree that no representations or warranties shall be binding upon either Party unless expressed in writing in the Agreement.

14. **Multiple Counterparts**: This Agreement may be executed in multiple counterparts, each of which constitutes an original.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be legally executed this 13th day of August, 2008.

CITY OF KERRVILLE

By: _____
Todd A. Bock, Mayor

COUNTY OF KERR, TEXAS

By: _____
Pat Tinley, County Judge

ATTEST:

Brenda G. Craig, City Secretary

ATTEST:
Jannett Pieper
By Cheryl A. Thompson, Deputy
Jannett Pieper, County Clerk

APPROVED AS TO FORM:

Michael C. Hayes, City Attorney

APPROVED AS TO FORM:

Rex Emerson, County Attorney

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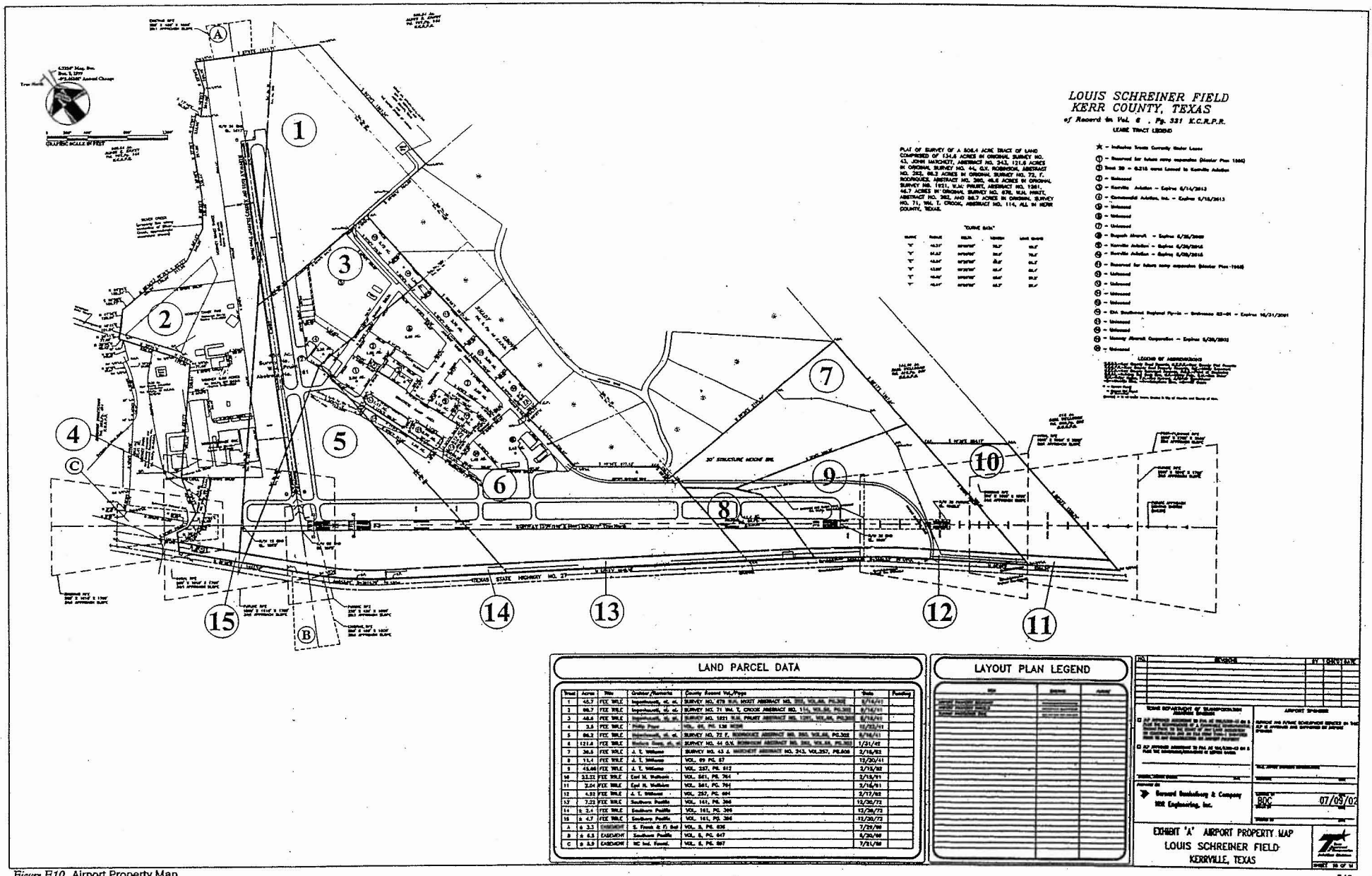

Figure E10 Airport Property Map

Exhibit "A"

P-000443 R-080-2004

AIRPORT FUND

REVENUES

INTERGOVERNMENTAL REVENUE

47-6306	TXDOT-REIMBURSEMENT
47-6322	KERR COUNTY PROJECT MATCH
47-6323	KERR COUNTY T-HANGER
47-6347	KERR COUNTY MGT CONTRACT
47-6361	CITY - PROJECT MATCH
47-6362	

INTEREST AND MISCELLANEOUS

47-6901	LEASES
47-6902	FUEL FLOW FEES
47-6903	TERMINAL LEASE
47-6904	T-HANGER LEASE
47-6905	VEHICLE RENT-SURCHARGE
47-6906	STORAGE RENTAL
47-6908	DAILY RENT T- HANGER
47-6911	INTEREST REVENUE
47-6989	MISCELLANEOUS REVENUE

TRANSFERS IN

47-7001	TRANSFER - GENERAL
47-7040	TRANSFER IN
47-7070	TRANSFER IN

EXPENSES

PERSONNEL

47-800-001	SALARIES AND WAGES
47-800-002	OVERTIME
47-800-003	TEMPORARY EMPLOYEE
47-800-004	LONGIVITY
47-800-005	SOCIAL SECURITY
47-800-006	RETIREMENT
47-800-007	GROUP INSURANCE
47-800-008	WORKER'S COMPENSATION
47-800-010	PROFESSIONAL DEVELOPMENT
47-800-011	LOCAL MEETING EXPENSE

SUPPLIES

47-800-101	OFFICE SUPPLIES
47-800-102	SMALL TOOLS & EQUIPMENT
47-800-103	MEDICAL AND CHEMICAL
47-800-105	FOOD SUPPLIES
47-800-106	JANITORIAL SUPPLIES
47-800-110	POSTAGE/UPS/FED-EX
47-800-111	COMPUTER UPGRADE
47-800-112	COMPUTER SOFTWARE
47-800-132	SOD, SEED, PLANTING

MAINTENANCE

47-800-201	LAND
47-800-202	BUILDINGS AND STRUCTURES
47-800-205	OFFICE EQUIPMENT
47-800-206	INSTRUMENTS AND APPARATUS
47-800-207	STREETS
47-800-208	TRAFFIC CONTROL DEVICES
47-800-209	TAXIWAYS/RUNWAYS
47-800-212	REPAIRS-NOT CITY GARAGE
47-800-214	RAMP GRANT MATCH

SERVICES

47-800-301	PHONE SERVICE
47-800-302	LIGHT AND POWER
47-800-303	NATURAL GAS
47-800-304	WATER & SEWER
47-800-305	LEGAL SERVICE
47-800-306	SPECIAL SERVICES
47-800-307	INSURANCE
47-800-311	NETWORK SERVICES
47-800-313	HIRE OF EQUIPMENT
47-800-316	ADVERTISING
47-800-347	MANAGEMENT CONTRACT
47-800-348	OUTSOURCED SERVICES

47-800-350

OTHER EXPENSES

47-800-401	CERTIFICATES AND AWARDS
47-800-402	DUES AND SUBSCRIPTIONS
47-800-405	OTHER CHARGES
47-800-410	CONTINGENCY
47-800-430	DEPRECIATION EXPENSE
47-800-435	OTHER EXPENSE

CAPITAL OUTLAY

47-800-501	LAND
47-800-502	BUILDING AND STRUCTURES
47-800-505	OFFICE EQUIPMENT
47-800-506	INSTRUMENTS AND APPRARTUS
47-800-508	TRAFFIC CONTROL DEVICES
47-800-510	WATER SYSTEM
47-800-513	GRANT MATCH
47-800-514	DRAINAGE IMPROVEMENTS
47-800-517	CITY T-HANGER 2001

TRANSFERS OUT

47-800-901	TRANSFER - GENERAL
47-800-902	TRANSFER OUT
47-800-928	TRANSFER OUT
47-800-940	TRANSFER OUT
47-800-942	TRANSFER OUT
47-800-970	TRANSFER OUT
47-800-974	TRANSFER OUT
47-800-975	TRANSFER OUT
47-800-990	TRANSFER - INSURANCE

TERMINAL

SUPPLIES

47-801-118	SIGN MATERIALS AND SUPPLIES

SERVICES

47-801-301	PHONE SERVICE
47-801-302	LIGHT & POWER
47-801-303	PROPANE GAS
47-801-304	WATER & SEWER

Appendix B
Square One Report – Mooney Airplane Company Complex

Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

Square One Consultants, Inc.

1000 Westbank Drive

Suite 1000

Austin, TX 78734

October 18, 2010

Mr. Perry Havenar
Garver, LLC
3010 Gaylord Pkwy
Frisco, TX 75034

Dear Mr. Havenar:

Attached is a report of our findings of the Mooney Airplane Company manufacturing facility at the Kerrville Municipal/Louis Schreiner Field Airport in Kerrville, Texas.

Field investigations were completed in September 17, 2010 of all facilities.

If you have any questions regarding the report, please call or contact me at 512.633.0668.

Sincerely,

Kevin Fleming
Square One Consultants, Inc.

Executive Summary

Square One Consultants, Inc. was engaged by Garver USA to conduct an inspection of the Mooney Airplane Company manufacturing facilities at the Kerrville Airport. The investigation was conducted by:

Square One Consultants, Inc. – Project Management
Baer Engineering and Environmental Consulting, Inc. – Environmental
Bryan M. Euwer – Accessibility
BD&E, Inc. – Structural

The intent of the investigation was to determine the current status of the buildings, environmental issues, ADA compliance issues and structural issues found in the structures. The visit was conducted during a one day period by the entire team. The review is intended to provide an overall review of the condition of the facilities. Recommendations for further investigations, tests, assessments or other actions deemed appropriate were to be addressed. The intent is to determine what steps need to be taken prior to new tenant occupancy.

The team visited the site on September 17, 2010 and was accompanied by a Mooney Airplane Company employee. Every building used by Mooney was inspected by the team. The tour included all rooms in all the buildings, the grounds surrounding the buildings, sheds and any other facility used by Mooney.

This Executive Summary covers the main elements and cost projections. Attached are individual reports from the engineers that visited the site.

General Comments

The facility was built over an extensive period of time with numerous additions and renovations. Most of the buildings have experienced considerable wear and tear. There is a considerable amount of equipment in the buildings that if were to be moved would cost a considerable amount of dollars to remove.

The large prefabricated buildings, which are generally in good condition, could provide a reasonable value for future tenants with relatively minor maintenance, assuming the building is not modified to an extent that would trigger significant ADA / Structural changes.

The adjacent land and new construction costs are relatively low. It is likely that new construction would be a cheaper alternative to future tenants than modification and remediation of the existing facilities.

Projected Costs

Projections of costs in each section below are based on general knowledge of construction and the initial investigation. Without detailed plans, the cost projections are rough order magnitudes.

Lease with Mooney

A complete review of the existing lease terms and obligations should be conducted in order to complete the understanding of the existing conditions. The city should endeavor to ensure that Mooney completes and abates any and all obligations in order to maximize the potential value of the site.

If Mooney were to leave the facility without removing the equipment and conducting remediation of the facilities, the city could face extensive costs. It is possible that other tenants could use the machinery and equipment in manufacturing of other parts for other purposes, but the age and condition of the equipment is in question.

Mechanical and Electrical Systems

It was noted that the facilities appear to be operating properly. It is recommended however that an assessment of the power loads be conducted on the electrical system and wiring to ensure compliance with applicable codes. This was indeterminate due to the future uses may not need as much power that currently feeds the buildings and equipment.

The mechanical systems seem to be operational in the office area. Other equipment was limited to space heaters, fans for ventilation and similar uses. Many of the systems were not in use at the time of the investigation.

Structural

The large majority of the buildings that don't have specific structural concerns can be immediately reused for a like similar tenant, although routine maintenance including painting should be conducted.

Consideration should be given to additional structural review of building 17 although it is likely that this building has little to no value.

Additional structural review and possible repairs should be made for the ad hoc additions in and around building 7.

Although not reviewed in detail, there is indication some leaks in the roofing systems exist.

Most of the work needed is for clean up of beams from rust and painting to extend the life. There may be some members that need to be replaced. Per the

attached report from BD&E, several buildings may not meet current code. Detailed engineering would need to be undertaken to determine the current status.

If the intent is to recondition the buildings to “like new” condition, then extensive work is required. For instance where there are roof leaks, if the desire is to patch then the cost is relatively low, but to replace, then the cost could be extremely high.

Cost Projections

Detailed Engineering Analysis – various buildings - $20,000 to 30,000. This would review the integrity of some of the identified concerns with recommendations for repairs.

Maintenance – cleaning, painting, roofing repairs, etc. - $100,000 to $300,000.

Replace Structural members – cost unknown until further investigation is completed.

Environmental

Based upon the age and condition of the existing buildings, it is likely that a majority of the buildings contain both lead based paint and asbestos building products. Modifications to the existing spaces including improvements for future tenant fit ups would require a detailed inspection and remediation of all known conditions.

The property has a number of open environmental liabilities related to 50 years of operations and several unclosed TCEQ permits. Consideration should be given to conducting a level 1 environmental evaluation to verify and eliminate the existing conditions. A definition of scope and deliverables is attached for your reference in the Baer report.

The currently unused well, which could potentially provide a conduit for toxins from the site to local drinking water, should be capped.

Because of the nature of the manufacturing facility, there are several potential problems. The one day visit identified some of the most likely candidates for liability including the evaporation pond and the above and underground storage tanks. Unless detailed test are conducted, there is no way of identifying the extent of risk or cost for remediation.

If the intent is to lease to other users, it is recommended to explore further or have Mooney provide reports and test results that indicate the site is clear of lead, asbestos and other containments.

The cost estimate for tests, which include a Phase 1, Phase 2, asbestos survey, lead paint survey and some other testing is approximately $200,000.

We recommend having Mooney prepare a report addressing all of the items listed in the Baer review report. If there is evidence that the issues are minimal or nonexistent, then less work is required.

Cost Projections
Environmental laws were passed many years ago and if compliance with those laws has been met, then remediation for another use may be minimal. However, if the facility is out of compliance then the remediation costs could be high. A range would be from tens of thousands of dollars to hundreds of thousands or more. We are not prepared to estimate this cost at this time.

Texas Accessibility Standards
ADA / TDLR

The buildings are generally non-compliant with the current ADA / TDLR building requirements. Under current regulations, a building owner is generally required to spend a minimum of 10% to upgrades as necessary to comply with the current codes. In addition, all new construction, including improvements for future tenants, would be required to upgrade the related facilities to the current code requirements. Based upon the current condition, these costs could be significant.

In accordance with the report form Bryan Euwer, if the intent is to use the facility for a similar purpose, without remodeling, then some of the items may not need to be addressed.

To comply with current codes, there is a significant amount of work that needs to be undertaken. None of the buildings are in compliance with accessibility routes. None of the restrooms comply. There is no access to the second floor.

Cost Projections
For a detailed set of plans that indicate how each of the violations need to be addressed, the estimated cost is $25,000 to 40,000.

Renovations for access to buildings - $150,000 to $200,000. This includes sidewalks, rails, ramps, revising doorways, etc.

Renovations for restroom access - $100,000 to $150,000.

Second floor access is problematic in that an elevator would need to be added. The cost is excessive and we recommend a variance be requested not to install an elevator.

Elevator Access – would need structural supports and elevator. $50,000 to 75,000.

General Building Repairs

The buildings are in various stages of disrepair. If the intent is to attract a viable tenant then considerable clean up and cosmetic repairs are required in addition to the TAS compliance, environmental remediation if required and structural repairs. If Mooney is to remain, then it is likely they can live with the existing conditions.

Remove Existing Equipment
Removal of existing equipment to create a vacant building. This would be for all buildings. Cost $1-3,000,000, depending on salvage value. The equipment is heavy and difficult to handle without proper rigging equipment. Transportation to either a dump or salvage yard could be high. Disposal of solvents, paints and other materials could be costly.

The issue is who would or could use the equipment. If the intent is to lease the buildings as is with the equipment, then the costs would be much less. Removal of parts and materials would be much less and likely can be salvaged.

If Mooney were to leave all of the equipment in place we recommend preparing an RFP for salvage companies to provide a price to remove the equipment. We are not knowledgeable about the marketability of the equipment. The cost of removing and transporting may make it cost prohibitive.

Demolition Costs
It is our recommendation to demolish Building 7. It is not a viable building. Cost is $25,000 to $50,000. If there is environmental abatement required, the cost will be more expensive. An asbestos and lead paint survey would need to be conducted prior to demolition.

General Clean Up

This would include removing trash and debris, cleaning up the landscaping and general site cleanup. Cost $25,000 to 100,000, depending on what Mooney may take, if they do take anything.

Cosmetic Improvements
Assuming all equipment is removed and a general cosmetic upgrade to increase the likelihood of leasing the buildings is desired, a significant amount of work is required.

In general this would include replacing metal siding, repairing doors and walls, ceilings as appropriate, painting surfaces, replacing carpet where it exists, replacing lights as needed and general cleaning up.

Again, this is a rough order magnitude. Our recommendation is to take each building one by one and write a description of work to be done by exterior; floors, ceilings; interior walls, electrical and mechanical and then solicit bids for the work.

Narrative to provide information for cosmetic improvements - $25,000 to 40,000.

The extent of improvements depends on the type of tenant being targeted. If a tenant is identified it would be best to have them review the premises and negotiate the work necessary to conduct business. If the intent is to clean up and attract viable tenants, then more work is likely to be done.

Estimated Cost - $500,000 to $1,000,000.

Next Steps

1. Determine the status of Mooney Airplane Company. What are their intentions and is it reasonable that they will stay at the site.
2. Review the lease terms to determine what responsibility Mooney has and what condition the buildings are to be left if they leave.
3. Depending on the lease terms, the City should conduct environmental assessments to determine the extent of issues or have Mooney provide reports that are current and cover the scope of the facilities.
4. If the City is to lease the space, then determine if the equipment is viable to either leave or salvaged, depending if Mooney takes the equipment and salvages themselves.
5. Once the buildings are cleared of equipment the entire facility needs to be cleaned out and environment issues addressed.
6. Repair or replace roofs
7. Perform cosmetic improvements to enhance the leasing opportunity.

8. Improve access and parking.
9. If there is a change of use, which is highly likely, then access, restrooms and related accessibility issues need to be addressed.
10. For many of these costs, the City may market the building as is with an Improvement Allowance that can be applied toward finish out.
11. Conversely, if the City believes there is a market for tenants, the city may want o spend the money up front to enhance market appeal and capture the costs through rent.
12. Compare cost identified above to make the buildings ready for occupancy versus complete demolition and building newer buildings. Depending on the cost comparison, it might be more economical to build some new and keep others.

Summary

The findings in this report are based on a one-day visit to the site. Once the direction is set, we recommend reviewing the options with the city and our team to discuss the next steps in detail. There are many directions this project could take if Mooney leaves. Review the site as a whole or each building separately.

If there are any questions regarding the attached reports, please call Kevin Fleming at 512.633.0668.

Baer Engineering
and Environmental Consulting, Inc.

September 27, 2010

Steven Bell
Square One Consultants
2700 Via Fortuna Drive, Suite 100
Austin, Texas 78746

Delivered via e-mail to sbell@squareoneconsultants.com .

Attention: **Mr. Steven Bell**

Reference: **Mooney Airplane Initial Site Review and Scope of Work Development**
165 Al Mooney Road, Kerrville, Texas 78028-8388
Baer Engineering Document No. 102041-8I.010

Dear Mr. Bell:

Baer Engineering and Environmental Consulting, Inc. (Baer Engineering) has completed its initial review of the Mooney Airplane Company in Kerrville, Texas. The review was intended to determine the need for environmental investigations, including surveys for asbestos-containing building materials and lead-based paint.

The Mooney Airplane Company has occupied the area west of the Kerrville Municipal Airport runways since approximately 1953. During that time the company has manufactured over 11,000 airplanes. The facilities include the following departments:

Building Number	Activity
9	Administration and Engineering
18	Research and Development
18	Engineering Test
18	Static Test
9	Receiving
unknown	Raw Stock Shear Operations
unknown	Hammer House
7	Machine Shop
7	Welding Shop
7	Upholstery
7	Wiring
5	Composites Tooling
6	Plastics
9	Spare Parts
9	Sub Assembly (Fuselage, Wing, and Control Surfaces)
9	Final Assembly
14	Avionics
unknown	Detail Painting
unknown	Final Painting
unknown	Maintenance
14	Service Center
14	Pre-flight
4, 12	Sales and Delivery

Building Number	Activity
10, 11	Storage

There are several areas of environmental concern that are discussed below:

Current reported issues
The facility is currently registered in the Texas Commission on Environmental Quality's (TCEQ's) Voluntary Cleanup Program (VCP) in response to the decommissioning of two evaporation ponds that were used for wastewater. The ponds covered approximately 1.5 acres to the west of the subassembly building. The chemicals of concern are volatile organic compounds (VOCs), metals, and chlorinated solvents. Investigations involving sampling of soil and groundwater have reportedly been completed, but the case has not been closed by the TCEQ.

Current potential issues
Six gasoline underground storage tanks have been registered with the TCEQ. All of the tanks have been removed from the ground or are abandoned in place. No releases from the tanks have been reported.

A City of Kerrville water well is on the property. It was drilled in 1956 to a depth of 665 feet, and it is currently unused. The well could potentially become a pathway for contamination to the aquifer, and if the well is not needed, plugging of the well should be considered.

Because of the age of the buildings it is likely that asbestos-containing materials (ACMs) and lead-based paint (LBP) are present.

Potential historic issues
An above-ground storage tank was reportedly located to the east of Building #12. The contents of the tank, its date of removal, and any releases from it are not known.

The plant has operated since the 1950s, when many current environmental regulations were not in place. A wide variety of waste materials have been generated (many of them not produced during recent manufacturing), and their disposition is not entirely known. It is likely that over the course of 50 years of production that spills, releases, and disposal of materials have occurred at the plant.

RECOMMENDATIONS

Asbestos-Containing Materials (ACMs) Survey
A survey for ACMs that complies with the *National Emissions Standards for Hazardous Air Pollutants* (NESHAP) regulations for demolition and renovation projects is recommended. The survey should include appropriate material sampling in compliance with NESHAP and the Texas Asbestos Health Protection Rules (TAHPR). The survey should include a review of available building plans and specifications, a visual assessment, and material sampling of the facility.

We estimate that 400 samples of ACM will need to be collected. The samples should be sent to an EPA accredited and Texas Department of State Health Services (DSHS)-licensed laboratory that will analyze the samples by Polarized Light Microscopy (PLM) in accordance with the United States Environmental Protection Agency's (EPA) "Method for the Determination of Asbestos in Bulk Building Materials" (EPA/600/R-93/116, July 1993).

Lead-Based Paint (LBP) Survey
The Occupational Safety and Health Administration (OSHA) General Industry Standards for Lead (29 CFR 1910.1025) and Lead Exposure in Construction (29 CFR1926.62) address airborne lead exposures during work involving lead, and require worker protection for those involved with activities that could potentially create airborne lead dust. Additionally, the EPA and TCEQ have requirements regarding the handling and disposal of lead-containing waste.

The inspection for LBP should include a visual assessment of the buildings and paint conditions. An X-Ray Fluorescence (XRF) Analyzer can be used on site to detect lead concentrations in paint finishes. Painted surfaces, such as interior and exterior walls, window sills, doors, window and door frames, hand rails, and floor markings should be tested.

The information obtained by the ACM and LBP sampling can be used along with specific renovation or demolition plans to develop abatement plans, if necessary. The cost for the development of abatement plans and specifications is not included in the cost estimate below.

Phase 1 Environmental Site Assessment (ESA)
An assessment of the facility according to ASTM Standard Practice 1527-05 is recommended to determine more accurately the current and potential environmental concerns. The ASTM procedure consists of a records search, interviews, and a site visit which are used to determine past practices and land uses that may cause Recognized Environmental Conditions (RECs). The Phase 1 should be used to determine the scope of a Phase 2 investigation which will likely involve the collection of soil, groundwater, and sediment samples.

The Phase I ESA will be conducted in compliance with the All Appropriate Inquiries (AAI) Regulation as specified in the Federal Register Part III EPA 40 CFR Part 312 and the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E 1527-05). The Phase I ESA will identify and record existing, potential, or suspect conditions that may impose an environmental liability to, or restrict the use of, the subject property. The purpose of a Phase I ESA is to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability. The Phase I ESA will constitute AAI into the previous ownership and uses of the property consistent with good commercial or customary practice.

The ESA is designed to identify potential Recognized Environmental Conditions (RECs) as the term is defined by ASTM. These conditions could result in regulatory liability and response costs for the past, present, or future owners of the site or could adversely impact the value of the site. ASTM defines REC:

Recognized Environmental Condition: The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions.

The ESA will include the environmental professional's opinions of the impact on the property of conditions identified in the findings section. The logic and reasoning used by the environmental professional in evaluating information collected during the course of the investigation related to such conditions shall be discussed. Frequently, items initially suspected to be a recognized environmental condition are subsequently determined, upon further evaluation, to not be considered a recognized environmental condition. The opinion shall specifically include the environmental professional's rationale for concluding that a condition is or is not currently a recognized environmental condition. Current conditions identified by the environmental professional as RECs shall be listed in the conclusions section of the report.

The following outline is Baer Engineering's standard scope of services for a Phase I ESA. All of these activities are limited to ready access, cooperative contacts, and reasonable availability.

a. <u>On-Site Investigation</u>

Perform an on-site reconnaissance to identify indicators of the existence of hazardous substances or petroleum products regulated by the Texas Commission on Environmental Quality (TCEQ) and other governmental agencies. Surveys to help determine the presence of asbestos-containing building materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, biological agents, and mold are intentionally and by mutual agreement excluded from the scope of service.

A visual on-site reconnaissance of the subject property and facilities and the adjoining properties from the nearest vantage point is required. If on-site inspection cannot be performed due to unusual circumstances (physical limitations, remote/inaccessible location), we will:

- Visually investigate the property via alternative method (aerial photo, fence line observation);
- Document all efforts taken to obtain access and why efforts were unsuccessful;
- Document other sources of information that were consulted to assess releases or threatened releases; and
- Comment on the significance of the failure to conduct a visual on-site investigation.

The investigation process and procedures performed to observe and evaluate Site conditions include observation of the following:

- Periphery of the property;
- Each side of wet and dry drainage pathways;
- Periphery of on-site water bodies;
- Public and maintenance areas;
- Improvements and structures on the property; and
- The remaining area not included in above, including wooded or overgrown areas, where accessible.

The report will describe evidence of the following if they are encountered at the site:

- Odors of chemical gases, petroleum products, or other odors;
- Landfilling, dumping, disturbed soils, or direct burial activity;
- Surface impoundment, oil/water separators, or holding ponds;
- Air emissions or wastewater discharges;
- Industrial or manufacturing activities;
- Monitoring wells or remediation equipment;
- Stained or discolored soil;
- Leachate or seeps;
- Areas of distressed, discolored, or stained vegetation;
- Chemical spills or releases;
- Groundwater or surface water contamination;
- Oil or gas well exploration, extraction, or refinery activities;
- Farm waste;
- Prolonged use or misapplication of pesticides, germicides, soil conditioners, or fertilizers; and
- Other known or observed environmentally sensitive or suspect conditions on-site from an off-site source onto the subject property.

b. Assess Adjacent Properties

Baer Engineering will observe adjacent properties and properties in the vicinity from public thoroughfares to determine if there is evidence of use, storing, generation, or disposal of hazardous substances or petroleum products.

c. Review Regulatory Records

Baer Engineering will review the following sources to obtain information about the potential for hazardous substances or petroleum products to exist at the Site or at properties located in the vicinity of the Site:

- U.S. Environmental Protection Agency (EPA);
- Texas Commission on Environmental Quality (TCEQ); and
- City of Kerrville Fire Department.

AAI requires a review of federal, state, and local government records (or databases containing government records) for the subject property and nearby and adjoining properties. Additional regulation requires a search for environmental cleanup liens against the subject property that are filed and recorded under federal, tribal, state, and local law.

d. Review Historical Information

Baer Engineering will research and review reasonably ascertainable sources of historical information about the property. The purpose is to ensure that a continuous record of land uses is assembled to create a comprehensive review of the potential for releases of hazardous substances at the property. Records that may be reviewed include, but are not limited to:

- Aerial Photographs

  We will review reasonably ascertainable aerial photographs to obtain information concerning the history of the Site. Copies of the reviewed aerial photographs will be included as attachments to the report.

- Groundwater Information
  We will review reasonably ascertainable references for information pertaining to the documented occurrence and quality of groundwater in the vicinity of the Site.
- Topographic Maps
  We will review the current and historical U.S. Geological Survey (USGS) topographic maps to obtain information about the Site's topography, previous development, and uses of the Site and properties in the vicinity of the Site. Copies of the reviewed topographic maps will be included as attachments to the report.
- Sanborn Maps
  We will review reasonably ascertainable Sanborn Fire Insurance Maps for the Site and adjacent properties to obtain information about historical uses of the Site and the potential for underground storage tanks to exist on the Site or on properties adjacent to the Site.
- Lien Search
  We will review a commercial environmental lien search obtained from an independent vendor. The lien search will include activity use limitations. This document will be reviewed for indications of RECs.
- Previous Reports
  We will review available previous Environmental Site Assessment reports provided by the client for historical and Site specific information.
- Building Department Records
  We will contact the City of Kerrville for those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property.
- Property Tax Records
  We will contact the local jurisdiction where the property is located and obtain reasonably ascertainable information concerning the property including past ownership, appraisals, maps, sketches, photos, or other information.
- Zoning and Land Use Records
  We will obtain reasonably ascertainable information indicating the uses permitted by the local government in particular zones within its jurisdiction. The records may consist of maps and/or written records.

e. Conduct Interviews

We will conduct interviews with past and present owners, operators, and occupants of the Site, if available within the time constraints of the project. These interviews are intended to collect information on past uses and ownerships of the property and identify potential conditions that may indicate the presence of releases or threatened releases of hazardous substances at the subject property. We will interview the owners and occupants of neighboring and nearby properties, in cases where the Site is abandoned.

All interviews will be conducted to meet the objectives and performance factors of the AAI (40 CFR 312.20 (e) – (f)). Where possible, interviews will be conducted with, but not limited to, the following:

- Key Site Managers;
- Current/Past Facility Managers; and
- Governmental Officials.

f. Photographic Documentation
Color photographs of the Site reconnaissance documenting current Site conditions and adjoining properties will be included in the report.

g. Data Gaps
The report will identify and comment on significant data gaps that affect the ability of the Environmental Professional to identify RECs and identify the sources of information that were consulted to address the data gaps. A data gap by itself is not inherently significant. For example, if a property's historical use is not identified back to 1940 because of data failure, but the earliest source shows that the property was undeveloped, this data gap by itself would not be significant. A data gap is only significant if other information and/or professional experience raises reasonable concerns involving the data gap. For example, if a building on the property is inaccessible during the Site visit and the Environmental Professional's experience indicates that such a building often involves activity that leads to a REC, the inability to inspect the building would be a significant data gap warranting comment.

h. Written Report
The results of the inquiry will be documented in a written report. This report will include at a minimum:

- The Environmental Professional's opinion as to whether RECs exist;
- Identification of data gaps;
- Qualifications of the Environmental Professional(s); and
- The signature(s) of the Environmental Professional(s) who prepared the report.

The report format will follow the recommended format included in ASTM E 1527-05, and will include the following:

- Summary
- User-Provided Information
- Interviews
- Additional Investigations
- Deviations
- Appendices
- Introduction
- Records Review
- Findings
- Conclusions
- Additional Services
- Site Description
- Site Reconnaissance
- Opinion of RECs
- Evidence of RECs
- References

Phase 2 Investigation
Following the Phase 1 ESA, a scope of work should be developed for a Phase 2 investigation that will include the collection of samples. The exact scope cannot be determined without the additional research provided by the Phase 1 ESA. However, the scope of work may be estimated based on the current and historical land use and activities at the property. Soil borings and groundwater monitoring wells should be installed in key areas so soil and groundwater samples can be collected for laboratory analysis. An estimated 40 soil borings may be needed to characterize the soil. If groundwater is encountered in the borings, groundwater samples may be collected. Laboratory analyses may include the following:

Total Petroleum Hydrocarbons (TPH)
Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
Lead

Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver (RCRA-8 metals)
Copper, Zinc
Acetone
Chlorinated Solvents
Volatile Organic Compounds (VOCs)
Polycyclic Aromatic Hydrocarbons (PAHs)
Polychlorinated biphenyls (PCBs)

The analytical results should be compared to published standards from the TCEQ to determine if health or environmental hazards exist. Additional soil borings and sample analyses may be required to determine the extent of contamination if hazards are discovered.

Estimated Costs
The following costs are for a Phase 1 ESA, an initial Phase 2 investigation, and surveys for ACMs and LBP. The scope of the Phase 2 will not be precisely known until the Phase 1 has been completed, so the costs should be used only as a guide.

Task	Estimated Cost
Phase 1 ESA	$10,000
Phase 2 Investigation	$40,000
Drilling subcontractor (Geoprobe)	$35,000
Laboratory subcontractor for Phase 2	$62,000
ACM and LBP surveys	$23,000
XRF analyzer	$12,000
Laboratory subcontractor for ACM	$4,000
Total	**$186,000**

Thank you for the opportunity to work with you on this project. Please contact me if you have any questions about our recommendations.

Sincerely,
BAER ENGINEERING AND ENVIRONMENTAL CONSULTING, INC.

Mark Zell

Mark Zell, P.G.
Senior Geologist

Bryan M. Euwer
Registered Accessibility Specialist #0238
P. O. Box 163812 Austin, Tx. 78716
Phone / fax 512.328.7613

To: **Steven Bell** **Date: 09/28/2010**
Square One Consultants
(512) 845-8921

RE: **Texas Accessibility Standards (TAS)**
Mooney Airplane Company Building at Airport
Kerrville Texas

Dear Mr. Bell

The referenced project has been inspected and found not to be in compliance with some of the provisions of the Architectural Barriers Act, Texas Government Code, Chapter 469.

The major non-complying items are noted on the enclosed inspection report. This report addresses major and obvious issues and is not intended to be a catch all on every building. When each building is remodeled it will be required to comply with the Accessibility Standards and will need to have the remodel plans reviewed in detail at that time.

The report is broken up into two sections.

Section I: Lists the TAS sections which the facility has been found not to comply with.
Section II: Lists each building in order by numbers as designated by the Mooney Airplane Company. Some numbers are skipped as that numbered building was not encountered while onsite, or some buildings possibly have been absorbed into larger buildings. All major buildings are accounted for. Under each building is a listing of the sections which were found to be in non-compliance for that particular building.

SECTION I

4.1.2 Accessible Sites and Exterior Facilities:. An accessible site shall meet the following minimum requirements:

(1) At least one accessible route complying with 4.3 shall be provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones if provided, and public streets or sidewalks, to an accessible building entrance.

(2) Alterations to an Area Containing a Primary Function: In addition to the requirements of 4.1.6(1), an alteration that affects or could affect the usability of or access to an area containing a primary function shall be made so as to ensure that the *accessible route* to the altered area and the *parking*, restrooms, telephones, and drinking fountains serving

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the altered area, are readily accessible to and usable by individuals with disabilities, unless such alterations are disproportionate to the overall alterations in terms of cost and scope, *and specifically approved by the commissioner in accordance with the variance procedures contained in Rule 68.31. Related criteria established by the Attorney General of the United States shall be among the evidence considered by the commissioner.*

4.5.1 Ground Surfaces General. Ground and floor surfaces along accessible routes and in accessible rooms and space including floors, walks, ramps, stairs, and curb ramps, shall be stable, firm, slip-resistant, and shall comply with 4.5. *Soft or loose materials such as sand, gravel, bark, mulch or wood chips are not suitable. Cobblestone and other irregular surfaces having a texture that constitutes an obstacle or hazard, such as improperly laid flagstone, shall not be a part of accessible routes, spaces and elements.*

4.6.1 Minimum Number. Parking spaces required to be accessible by 4.1 shall comply with 4.6.2 through 4.6.5. Passenger loading zones required to be accessible by 4.1 shall comply with 4.6.5 and 4.6.6.

4.6.3* Parking Spaces. Accessible parking spaces shall be at least 96 in (2440 mm) wide. Parking access aisles shall be part of an accessible route to the building or facility entrance and shall comply with 4.3. Two accessible parking spaces may share a common access aisle. Parked vehicle overhangs shall not reduce the clear width of an accessible route. Parking spaces and access aisles shall be level with surface slopes not exceeding 1:50 (2%) in all directions.

4.8.5 Ramp Handrails. If a ramp run has a rise greater than 6 in (150 mm) or a horizontal projection greater than 72 in (1830 mm), then it shall have handrails on both sides. Handrails are not required on curb ramps or adjacent to seating in assembly areas. Handrails shall comply with 4.26 and shall have the following features:
(1) Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback or dogleg ramps shall always be continuous.

4.9.4 Handrails. Stairways shall have handrails at both sides of all stairs. Handrails shall comply with 4.26 and shall have the following features:

(1) Handrails shall be continuous along both sides of stairs. The inside handrail on switchback or dogleg stairs shall always be continuous (see Fig.(a) and (b)).
(a) Stairs more than 88 in (2236 mm) in width shall have intermediate handrails spaced 88 in (2236 mm) on center maximum.

(2) If handrails are not continuous, they shall extend at least 12 in (305 mm) beyond the top riser and at least 12 in (305 mm) plus the width of one tread beyond the bottom riser. At the top, the extension shall be parallel with the floor or ground surface. At the bottom, the handrail shall continue to slope for a distance of the width of one tread from the bottom riser; the remainder of the extension shall be horizontal (see Fig. 19(c) and 19(d)). Handrail extensions shall comply with 4.4.

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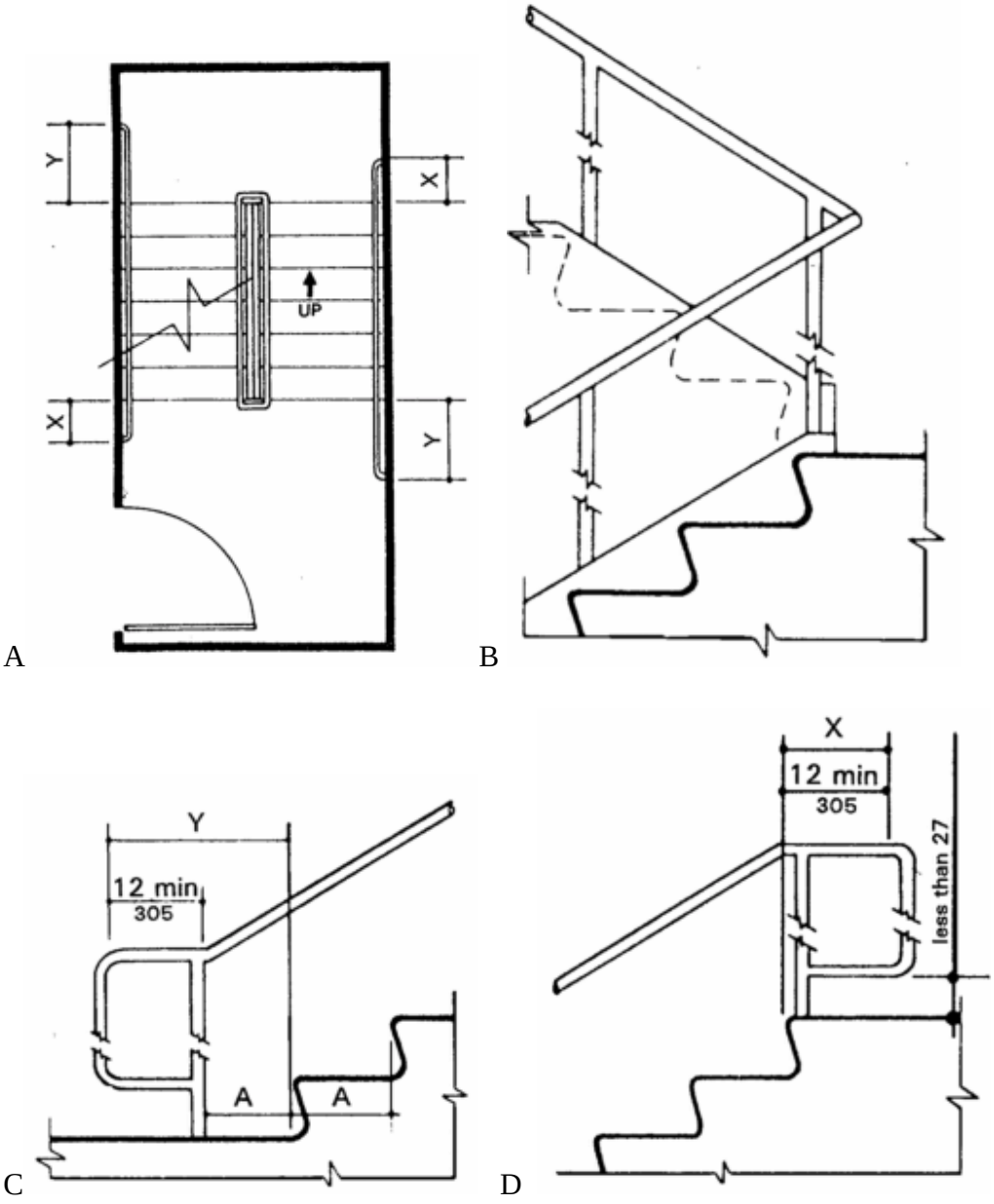

4.10.1 Elevators General.
(1) Accessible elevators shall be on an accessible route and shall comply with 4.10 and with the ASME A17.1-1990, Safety Code for Elevators and Escalators. Freight elevators shall not be considered as meeting the requirements of this section unless the only elevators provided are used as combination passenger and freight elevators for the public and employees.

4.13.5 Clear Width. Doorways shall have a minimum clear opening of 32 in (815 mm) with the door open 90 degrees, measured between the face of the door and the opposite stop.

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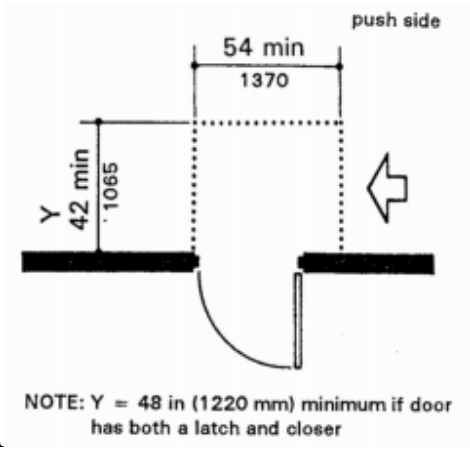
4.13.6 Maneuvering Clearances at Doors. Minimum maneuvering clearances at doors that are not automatic or power-assisted shall be as shown in Fig. A & B below. The floor or ground area within the required clearances shall be level and clear.



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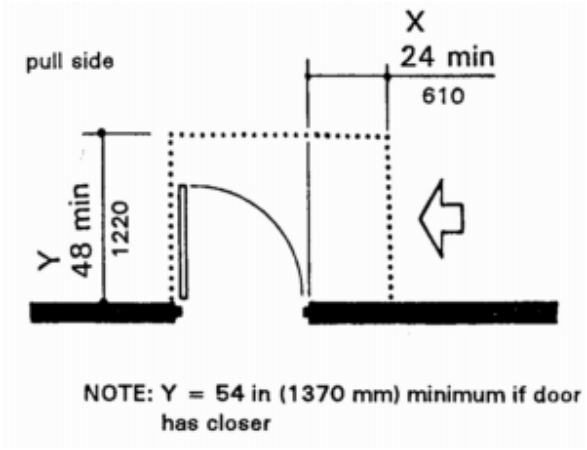

B

4.13.8* Thresholds at Doorways. Thresholds at doorways shall not exceed 3/4 in (19 mm) in height for exterior sliding doors or 1/2 in (13 mm) for other types of doors. Raised thresholds and floor level changes at accessible doorways shall be beveled with a slope no greater than 1:2 (see 4.5.2).

4.13.9* Door Hardware. Handles, pulls, latches, locks, and other operating devices on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist to operate. Lever-operated mechanisms, push-type mechanisms, and U-shaped handles are acceptable designs. When sliding doors are fully open, operating hardware shall be exposed and usable from both sides. Hardware required for accessible door passage shall be mounted no higher than 48 in (1220 mm) above finished floor.

4.14.1 Building Entrances Minimum Number. Entrances required to be accessible by 4.1 shall be part of an accessible route complying with 4.3. Such entrances shall be connected by an accessible route to public transportation stops, to accessible parking and passenger loading zones, and to public streets or sidewalks if available (see 4.3.2(1)). They shall also be connected by an accessible route to all accessible spaces or elements within the building or facility.

4.15.1 Drinking Fountains *General*.
(1) Minimum Number. Drinking fountains or water coolers required to be accessible by 4.1 shall comply with 4.15.

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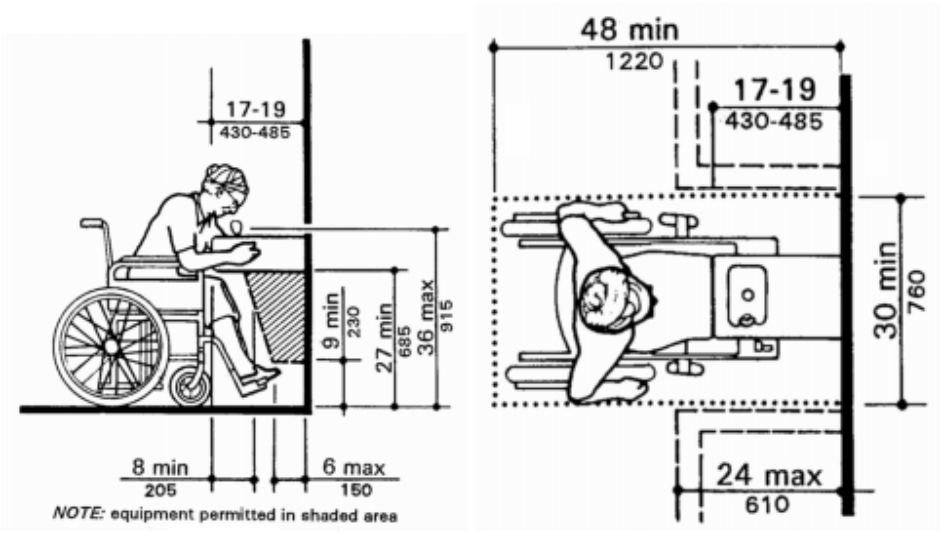
4.15.2* Spout Height. Spouts shall be no higher than 36 in (915 mm), measured from the floor or ground surfaces to the spout outlet (see Fig. 27(a)).

4.15.3 Spout Location. The spouts of drinking fountains and water coolers shall be at the front of the unit and shall direct the water flow in a trajectory that is parallel or nearly parallel to the front of the unit. The spout shall provide a flow of water at least 4 in (100 mm) high so as to allow the insertion of a cup or glass under the flow of water. On an accessible drinking fountain with a round or oval bowl, *and on an accessible drinking fountain providing only a parallel approach complying with 4.15.5(2),* the spout must be positioned so the flow of water is within 3 in (75 mm) of the front edge of the fountain.



A

4.16.1 Water Closets General.
(1) Accessible water closets shall comply with 4.16.

4.16.2 Clear Floor Space. Clear floor space for water closets not in stalls shall comply with Fig. 28. Clear floor space may be arranged to allow either a left-handed or right-handed approach.

4.16.3 Height*. The height of water closets shall be 17 in to 19 in (430 mm to 485 mm), measured to the top of the toilet seat (see Fig. 29(b)). Seats shall not be sprung to return to a lifted position.

4.16.4* Grab Bars. Grab bars for water closets not located in stalls shall comply with 4.26 and Fig. 29. The grab bar behind the water closet shall be 36 in (915 mm) minimum.

4.16.5* Flush Controls. Flush controls shall be hand operated or automatic and shall comply with 4.27.4. Controls for flush valves shall be mounted on the wide side of toilet areas no more than 44 in (1120 mm) above the floor.

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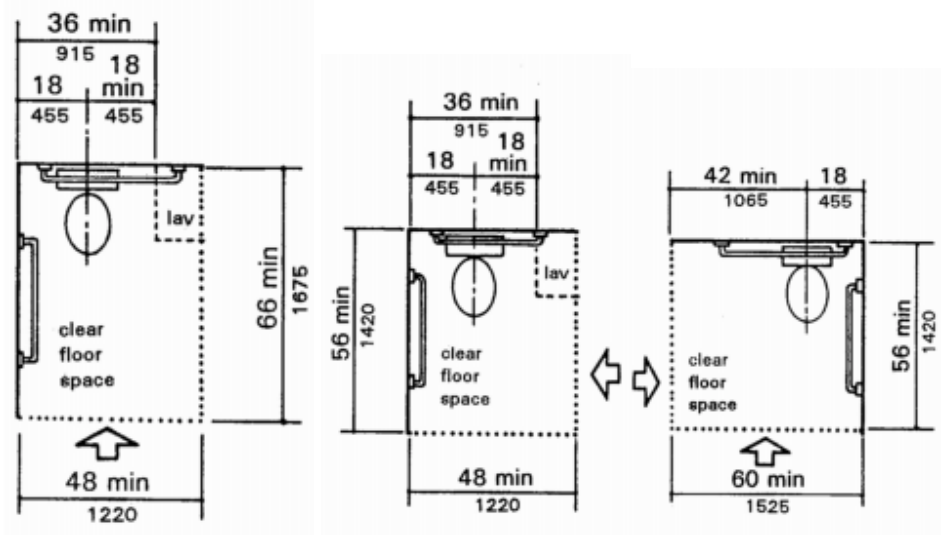
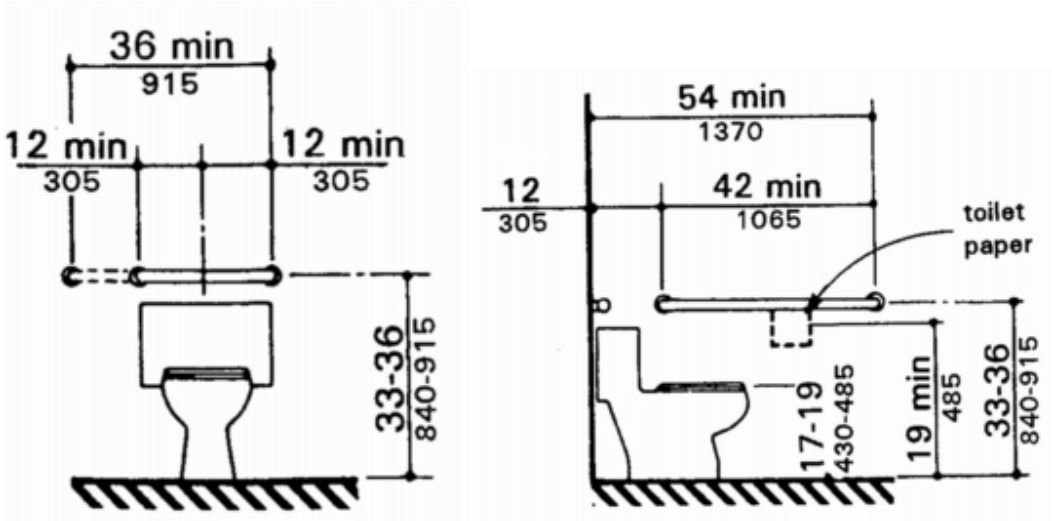


A



B

4.17.1 Toilet Stalls Location. Accessible toilet stalls shall be on an accessible route and shall meet the requirements of 4.17.

4.17.2 Toilet Stall Water Closets. Water closets in accessible stalls shall comply with 4.16.

4.17.3* Size and Arrangement. The size and arrangement of the standard toilet stall shall comply with Fig. 30(a), Standard Stall. Standard toilet stalls with a minimum depth of 56 in (1420 mm) (see Fig. 30(a)) shall have wall-mounted water closets. If the depth of a standard toilet stall is increased at least 3 in (75 mm), then a floor-mounted water closet may be used. Arrangements shown for standard toilet stalls may be
reversed to allow either a left- or right-hand approach. Additional stalls shall be provided in conformance with 4.22.4.

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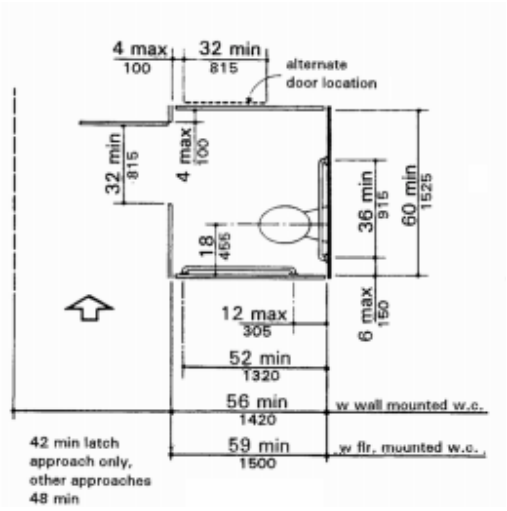
EXCEPTION: In instances of alteration work where provision of a standard stall (Fig. 30(a)) is technically infeasible or where *local* plumbing code requirements*1* prevent combining existing stalls to provide space, either alternate stall (Fig. 30(b)) may be provided in lieu of the standard stall.

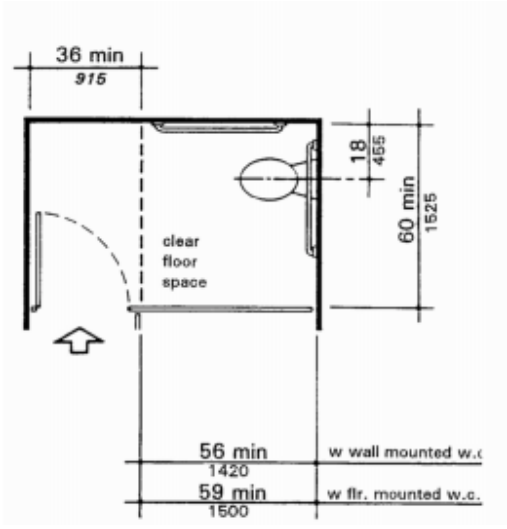
4.17.4 Toe Clearances. In standard stalls, the front partition and at least one side partition shall provide a toe clearance of at least 9 in (230 mm) above the floor. If the depth of the stall is greater than 60 in (1525 mm), then the toe clearance is not required.

4.17.5* Doors. Toilet stall doors, including door hardware, shall comply with 4.13. If toilet stall approach is from the latch side of the stall door, clearance between the door side of the stall and any obstruction may be reduced to a minimum of 42 in (1065 mm) (Fig. 30).

4.17.6 Grab Bars. Grab bars complying with the length and positioning shown in Fig. 30(a), 30(b), 30(c), and 30(d) shall be provided. Grab bars may be mounted with any desired method as long as they have a gripping surface at the locations shown and do not obstruct the required clear floor area. Grab bars shall comply with 4.26.



A. Standard Stall



A1. Standard Stall End Wall

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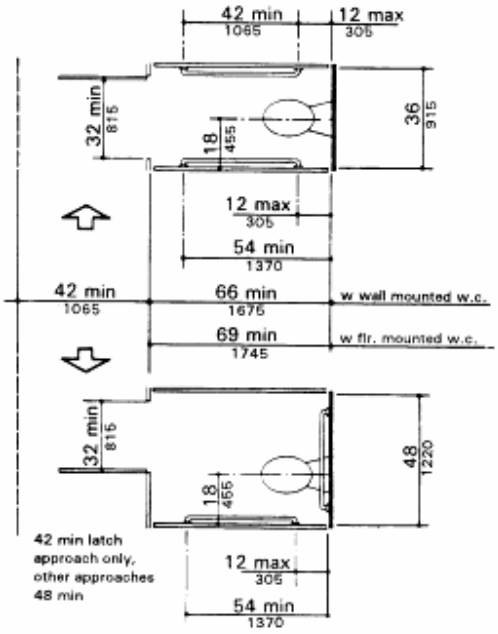
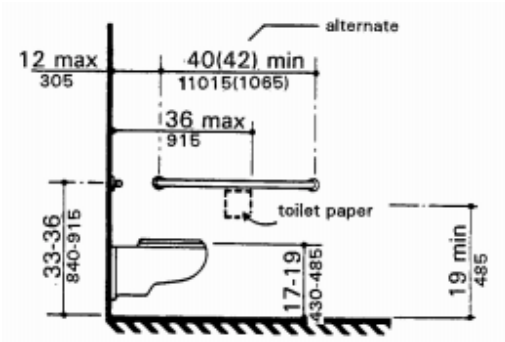


B. Alternate Stalls



B. Side Wall

4.18.1 Urinal General.
(1) Accessible urinals shall comply with 4.18.

4.18.2 Height. Urinals shall be stall-type, or wall-hung with *a tapered* elongated rim *mounted* at a maximum of 17 in (430 mm) above the finish floor. *A tapered elongated rim is one that narrows toward the front to allow a wheelchair user to straddle the basin and which extends at least 14" from the vertical surface on which the fixture is mounted.*

4.18.3 Clear Floor Space. A clear floor space 30 in by 48 in (760 mm by 1220 mm) shall be provided in front of urinals to allow forward approach. This clear space shall adjoin or overlap an accessible route and shall comply with 4.2.4. Urinal shields that do not extend beyond the front edge of the urinal rim may be provided with 29 in (735 mm) clearance between them.

4.18.4 Flush Controls. Flush controls shall be hand operated or automatic, and shall comply with 4.27.4, and shall be mounted no more than 44 in (1120 mm) above the finish floor.

4.19.1 Lavatories General.
(1) The requirements of 4.19 shall apply to lavatory fixtures, vanities, built-in lavatories.

4.19.2 Height and Clearances. Lavatories shall be mounted with the rim or counter surface no higher than 34 in (865 mm) above the finish floor. Provide a clearance of at least 29 in (735 mm) above the finish floor to the bottom of the apron. Knee and toe clearance shall comply with Fig. 31.

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4.19.3 Clear Floor Space. A clear floor space 30 in by 48 in (760 mm by 1220 mm) complying with 4.2.4 shall be provided in front of a lavatory to allow forward approach. *Lavatories and mirrors installed in alcoves deeper than 24 in require additional maneuvering area (see Figure 4(e)).* Such clear floor space shall adjoin or overlap an accessible route and shall extend a maximum of 19 in (485 mm) underneath the lavatory (see Fig. 32).

4.19.4 Exposed Pipes and Surfaces. Hot water and drain pipes under lavatories shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories.

4.19.5 Faucets. Faucets shall comply with 4.27.4. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs. If self-closing valves are used the faucet shall remain open for at least 10 seconds.

4.19.6* Mirrors. Mirrors shall *be on accessible routes at locations consistent with that of other mirrors in the same room, and shall* be mounted with the bottom edge of the reflecting surface no higher than 40 in (1015 mm) above the finish floor (see Fig. 31). *Mirrors that are intended to be used by both ambulatory people and wheelchair users, such as might be provided in a single-occupancy toilet room or any toilet room having only one mirror, must be at least 74 in (1880 mm) high at their topmost edge.*

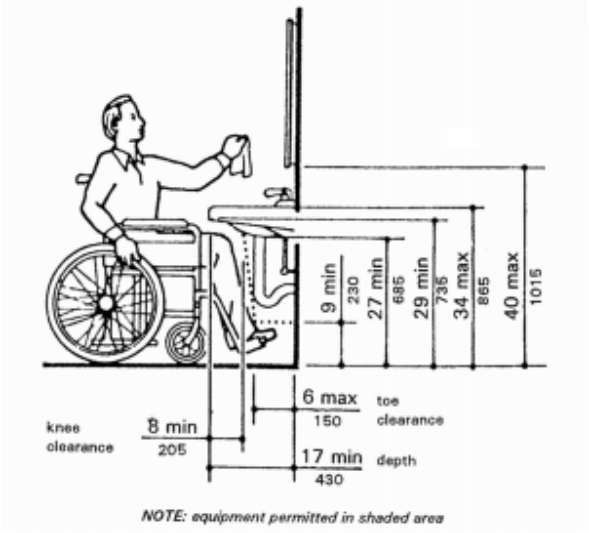

Fig 31

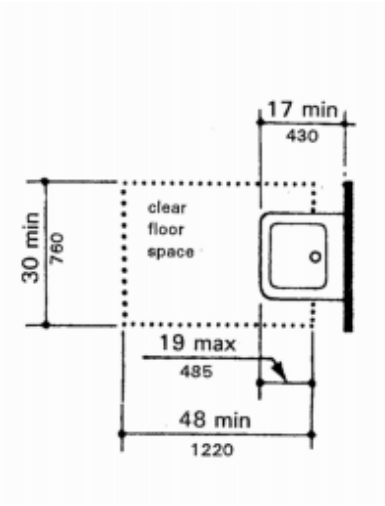

Fig. 32

4.30.1* Signage General. Signage required to be accessible by 4.1 shall comply with the applicable provisions of 4.30.

4.30.2* Character Proportion. Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10 *using an upper-case "X" for measurement. Lower case letters are permitted.*

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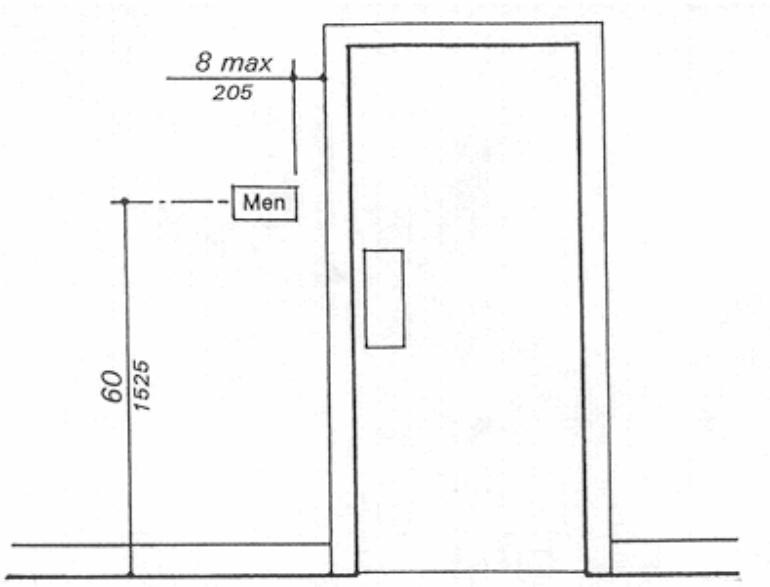
4.30.4* Raised and Brailed Characters and Pictorial Symbol Signs (Pictograms). Letters and numerals shall be raised 1/32 in, upper case, sans serif or simple serif type and shall be accompanied with Grade 2 Braille. Raised characters shall be at least 5/8 in (16 mm) high, but no higher than 2 in (50 mm). Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram. The border dimension of the pictogram shall be 6 in (152 mm) minimum in height.

4.30.5* Finish and Contrast. The characters and background of signs shall be eggshell, matte, or other nonglare finish. Characters and symbols shall contrast with their background -either light characters on a dark background or dark characters on a light background.

4.30.6 Mounting Location and Height. Where permanent identification is provided for rooms and spaces, signs shall be installed on the wall adjacent to the latch side of the door. Where there is no wall space to the latch side of the door, including at double leaf doors, signs shall be placed on the nearest adjacent wall. Mounting height shall be 60 in (1525 mm) above the finish floor to the centerline of the sign. Mounting location for such signage shall be so that a person may approach within 3 in (76 mm) of signage without encountering protruding objects or standing within the swing of a door *(see Fig. 43(e))*.



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SECTION II:

Main Entry and Parking Lot

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *There is no accessible route to the facility from the parking lot.*

4.5.1 Ground Surfaces General: *Sand is not an acceptable surface.*

4.6.1 Minimum Number: *The parking lot capacity needs to be determined and accessible spaces number adjusted.*

Main parking lot non compliant accessible spaces

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Stair transition from parking to main building (No ramp present)

Building 03 - Raw Stock Shear Operations

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*

4.13.5 Clear Width: *Some doors were observed having a clear width of less than 32"*

4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*

4.13.9 Door Hardware: *Door knobs are not acceptable.*

Building 04 - Sales

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*

4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*

4.13.9 Door Hardware*: Door knobs are not acceptable.*

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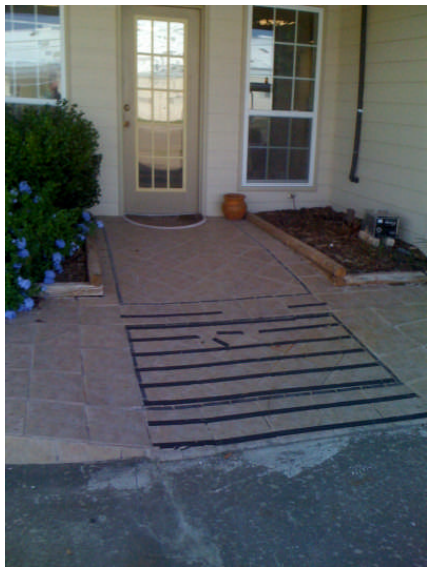

Sales doors having more than 1/2" transition

Building 05 - Composites and Tooling

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.13.8 Thresholds at Doorways.: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware: *Door knobs are not acceptable.*

Building 06 - Hammer House & Plastics

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*
4.16.1 Water Closets General thru 4.16.4: *Water closets are not accessible*
4.17.2 Toilet Stall Water Closets thru 4.17.6 : *Toilet stalls are not accessible*
4.18.1 Urinal General thru 4.18.4: *Urinals do not comply with regard to access and flushing mechanism.*
4.19.1 Lavatories General thru 4.19.6: *Lavatories are mounted at an incorrect height and do not have thermal protection on the water lines.*
4.30.1 Signage General thru 4.30.6 : *Handicap signage it non compliant*

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Building 07 - Machine Shop & Upholstery & Wiring

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*
4.9.4 Handrails: *Stair handrails need to be on both sides of the stair and have extensions per code.*
4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable.*
4.16.1 Water Closets General thru 4.16.4
4.17.2 Toilet Stalls Water Closets thru 4.17.6
4.18.1 Urinal General thru 4.18.4
4.19.1 Lavatories General thru 4.19.6
4.30.1 Signage General thru 4.30.6

Example of non compliant lavatories. Fixtures need lever sets and thermal protection.

Building 09 - Aircraft Assembly Building/Administration

A. Aircraft Assembly

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*
4.9.4 Handrails: *Stair handrails need to be on both sides of the stair and have extensions per code.*
4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable.*
4.30.1 Signage General thru 4.30.6

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B. Engineering Offices and Break Room

TAS sections violations:

4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*

4.13.9 Door Hardware*: Door knobs are not acceptable.*

C. Administration

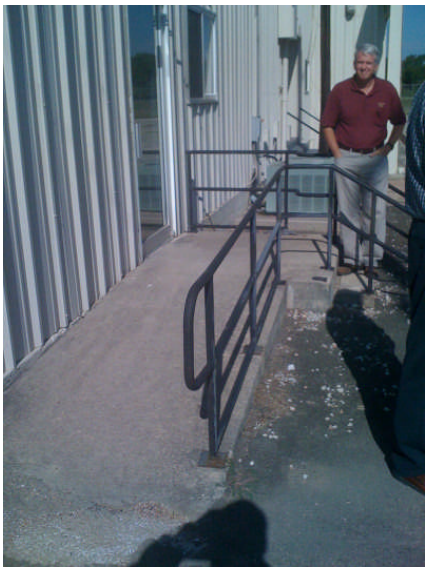
TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*

4.9.4 Handrails: *Stair handrails need to be on both sides of the stair and have extensions per code.*

4.8.5 Ramp Handrails.: *Ramp handrails need to be on both sides of ramp.*

4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*



Example of non compliant ramp.

Building 10 - Spare Parts Storage

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*

4.9.4 Handrails: *Stair handrails need to be on both sides of the stair and have extensions per code.*

4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*

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Building 11 - Empty Storage

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*

4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*

Building 12 - Delivery

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*

4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*

Building 13 - Detail Paint

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*

4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*

Examples of non accessible doors

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Examples of non accessible door

Building 14 - Preflight/Service Center/Completion Center

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*
4.9.4 Handrails: *Stair handrails need to be on both sides of the stair and have extensions per code.*
4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable.*
4.16.1 Water Closets General thru 4.16.4
4.17.2 Toilet Stalls Water Closets thru 4.17.6
4.18.1 Urinal General thru 4.18.4
4.19.1 Lavatories General thru 4.19.6
4.30.1 Signage General thru 4.30.6

Building 15 - Guard Station

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*
4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable.*

Building 16 - Storage Shed

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*

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4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*

Building 17 - Old Engineering

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.13.5 Clear Width: *Several openings are not 32" clear.*
4.13.6 Maneuvering Clearances at Doors: *Approach clearance on non compliant at several locations.*
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*
4.16.1 Water Closets General thru 4.16.4: *Water closets are not accessible*
4.17.2 Toilet Stall Water Closets thru 4.17.6 : *Toilet stalls are not accessible*
4.18.1 Urinal General thru 4.18.4: *Urinals do not comply with regard to access and flushing mechanism.*
4.19.1 Lavatories General thru 4.19.6: *Lavatories are mounted at an incorrect height and do not have thermal protection on the water lines.*
4.30.1 Signage General thru 4.30.6 : *Handicap signage it non compliant*


Example of non accessible entries

Building 18
A. Static Test Building

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*

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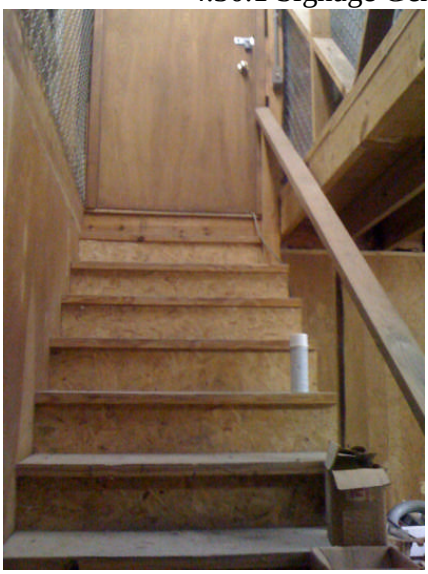
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*

B. Shop Engineering

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.9.4 Handrails: Stair railing shall be on both sides of stair.
4.13.5 Clear Width: *Several openings are not 32" clear.*
4.13.6 Maneuvering Clearances at Doors: *Approach clearance on non compliant at several locations.*
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*
4.16.1 Water Closets General thru 4.16.4: *Water closets are not accessible*
4.17.2 Toilet Stall Water Closets thru 4.17.6 : *Toilet stalls are not accessible*
4.18.1 Urinal General thru 4.18.4: *Urinals do not comply with regard to access and flushing mechanism.*
4.19.1 Lavatories General thru 4.19.6: *Lavatories are mounted at an incorrect height and do not have thermal protection on the water lines.*
4.30.1 Signage General thru 4.30.6 : *Handicap signage it non compliant*



Example of non compliant stair railing

C. Engineering Test and R&D Wing

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*

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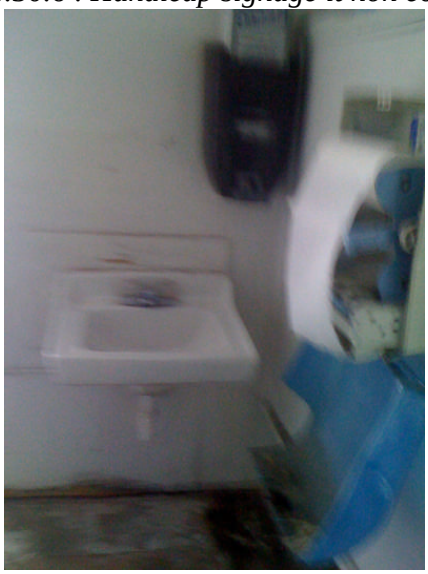
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*

Building 19 - Final Paint Shop

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.13.5 Clear Width: *Several openings are not 32" clear.*
4.13.6 Maneuvering Clearances at Doors: *Approach clearance on non compliant at several locations.*
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*
4.16.1 Water Closets General thru 4.16.4: *Water closets are not accessible*
4.17.2 Toilet Stall Water Closets thru 4.17.6 : *Toilet stalls are not accessible*
4.18.1 Urinal General thru 4.18.4: *Urinals do not comply with regard to access and flushing mechanism.*
4.19.1 Lavatories General thru 4.19.6: *Lavatories are mounted at an incorrect height and do not have thermal protection on the water lines.*
4.30.1 Signage General thru 4.30.6 : *Handicap signage it non compliant*


Example of non compliant toilet and stall


Example of non compliant lavatory

Building 20 - Maintenance

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*

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4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*

Building 21 - Solvent Storage

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities*: No accessible route is provided to adjacent facilities.*
4.13.8 Thresholds at Doorways*: Several Thresholds exceed 1/2" transition*


Example of unacceptable access to Solvent storage from Sub Assembly Bldg.

Building 27 - Paint Storage

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*

Building 28 - Records Storage

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*

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Building 30 - Storage

TAS sections violations:

4.1.2 Accessible Sites and Exterior Facilities: *No accessible route is provided to adjacent facilities.*
4.13.8 Thresholds at Doorways: *Several Thresholds exceed 1/2" transition*
4.13.9 Door Hardware*: Door knobs are not acceptable hardware.*

Conclusion:

The facility is older and most of the structures were built prior to the adoption of the Texas Accessibility Standards. Building renovations and remodels have taken place since the TAS were adopted and very few modifications have been made to accommodate the regulations.

Should the facility be utilized for a purpose other that air craft manufacturing it would be considered a change to the primary function and the Texas accessibility Standards state that if a facility has a change in primary function it must be brought up to code compliance.

Even without a change to the primary function considerable dollars will need to be spent to bring the facility up to minimal code compliance.

Please note, this determination does not address the requirements of the Americans with Disabilities Act (ADA), (P.L. 101-336), or any other state, local, or federal requirement. For information on the ADA, please contact the United States Department of Justice, Civil Rights Division at (202) 514-0301.

If you have any questions concerning the results of the inspection, or the requirements of the Architectural Barriers Act, or if you are not the owner of record for this facility, contact Bryan Euwer at 512-328-7613

Respectfully submitted,

bryan euwer

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September 23, 2010

Steven Bell
Square One Consultants
(512) 845-8921

RE: Level 1 Engineering Assessment
Mooney Airplane Company
Building at Airport
Kerrville Texas

Dear Steven,

As per your request I have completed a level 1 visual assessment of the structural condition and typology of the buildings at the above address. The project is approximately 30 buildings of various sizes from small 10 foot by 10 foot sheds to large assembly buildings over 700 feet long. The buildings age from 50+ years to recent. Some are wood framed and some are pre-engineered. The inspection was done on Friday September 17, 2010. An employee of Mooney Airplane Company accompanied the engineering party around the premises.

The conclusions of this report are from visual observations only, no measurements, calculations or testing were done for the report. A basic layout of the facility was provided by Mooney Airplane Company, this drawing showed the basic sizes of each structure. No detailed architectural or engineering plans were available for any of the buildings.

Below is a list each building in order by numbers as designated by the Mooney Airplane Company. Some numbers are skipped as that numbered building was not encountered while onsite, or some buildings possibly have been absorbed into larger buildings. All major buildings are accounted for.

Building 03 - Raw Stock Shear Operations

1. Construction Type - Modern Pre-engineered metal building.
2. Foundation - Slab on grade. Good condition.
3. Approximate Size - 161' by 53'
4. Condition - Very good.
5. Comments - Structure looks stable.

Building 04 - Sales

1. Construction Type - Wood framed residential construction.
2. Foundation - Slab on grade in front with a pier and beam under offices
3. Approximate Size - 66' by 37'
4. Condition - Average.

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5. Comments - Pier and beam portion looks very close to grade. Hardi siding on exterior.

Sales Building

Building 05 - Composites and Tooling

1. Construction Type - Wood framed building. Has a mix of wood and steel posts. A mix of wood and steel beams with predominantly wood joists.
2. Foundation - Slab on grade.
3. Approximate Size - 151' by 62'
4. Condition - Fair
5. Comments - Structure looks light by industrial standards. No visible damage to wood structure, but spans appear to be longer than allowed by current code. No visible signs of distress or excessive sagging.

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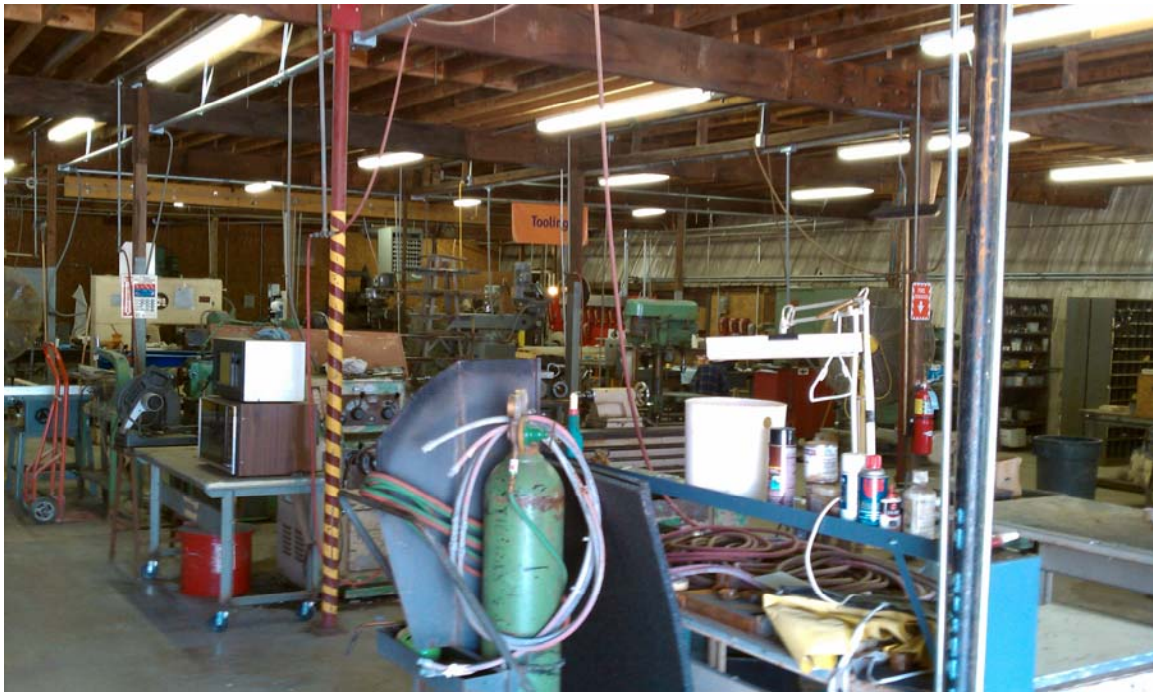

Building 06 - Hammer House & Plastics

1. Construction Type - Conventional modern Pre-engineered building.
2. Foundation - Slab on grade with floor drains and built in slope.
3. Approximate Size - 84' by 74'
4. Condition - Very good.
5. Comments - Structure looks stable but has a great deal of surface rusting (non detrimental) and can use maintenance work. Plastics wing is an accessory wing off of building 14

Building 07 - Machine Shop & Upholstery & Wiring

1. Construction Type - Very large barrel vault main structure with vault girders constructed from steel angles. Light gauge purlins above that with a metal roof. Structure has a 2nd floor framed inside of it for the upholstery area. This building structure is riveted which could date is Pre WW2.
2. Foundation - Slab on grade. Foundation appears to be similar to thick flatwork construction based on the slopes and cracking patterns.
3. Approximate Size - 161' by 142'
4. Condition - Good.
5. Comments - Upholstery work area built upon a 2nd floor underneath the barrel trusses. Upholstery floor structure constructed with dimensional lumber supported by steel beams and columns.

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Barrel Vault Trusses above Machine Shop

Barrel Vault Trusses above Machine Shop

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2nd Floor space above machine shop for Upholstery and Wiring

Building 09 - Aircraft Assembly Building/Administration

A. Aircraft Assembly

1. Construction Type - Large Pre-engineered frame structure. Conventionally constructed. Appears very well built.
2. Foundation - Slab on grade. Some low spots with concentrated cracking likely from settling of subsurface base material. Cracking occurs on assembly floor slab areas and does not appear to be impacting the structural frame.
3. Approximate Size - 140' by 650'
4. Condition - Very Good.
5. Comments - Structure looks stable. Structural components and framing members could use maintenance in the form of paint.

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Aircraft Assembly Building

Aircraft Assembly Building

B. Engineering Offices and Break Room

1. Construction Type - Pre-engineered metal building with 6" Z purlins at 4'-0" on center.
2. Foundation - Slab on Grade. Appears to be adequate and level.
3. Approximate Size - 170' by 36'

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4. Condition - Very good.
5. Comments. Structure looks stable.

C. Administration

1. Construction Type - Pre-engineered metal building with 6" Z purlins at 4'-0" on center.
2. Foundation - Slab on Grade. Appears to be adequate and level.
3. Approximate Size - 66' by 36'
4. Condition - Very good.
5. Comments - Structure looks stable.

Building 10 - Spare Parts Storage

1. Construction Type - Pre-engineered metal building in good condition
2. Foundation - Slab on grade in good condition.
3. Approximate Size - 115' by 84'
4. Condition - Good.
5. Comments - Good condition. Needs paint and maintenance.

Building 11 - Empty Storage

1. Construction Type - Steel frame. Similar to a pre-engineered building but moment frames are pipe steel tapered truss frames.
2. Foundation - Slab on grade in good condition.
3. Approximate Size - 86' by 84'
4. Condition - Good.
5. Comments - Building needs paint and light maintenance. Structure looks stable although I have concerns that the pipe trusses are not to code, their dimensions are similar to what one would find in a modern pre-engineered buildings.

Building 12 - Delivery

1. Construction Type - Pre-engineered metal building in good condition
2. Foundation - Slab on grade in good condition.
3. Approximate Size - 142' by 84'
4. Condition - Good.
5. Comments - Needs paint, surface rust on steel members.

Building 13 - Detail Paint

1. Construction Type - Modern Pre-engineered metal building
2. Foundation - Slab on grade. Good condition
3. Approximate Size - 167' by 50'
4. Condition - Very good.
5. Comments - Structure looks stable.

Building 14 - Preflight/Service Center/Completion Center

1. Construction Type - Modern Pre-engineered building in very good condition
2. Foundation - Slab on Grade. Excellent condition
3. Approximate Size - 340' by 112' with 43'x256' side galley (Bldg 6)
4. Condition - Excellent.

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5. Comments - Structure looks stable and well maintained.

Building 15 - Guard Station

1. Construction Type - one story wood frame, parapet wall with Steel posts on a wood awning covering entry.
2. Foundation - Slab on grade. Appears Adequate.
3. Approximate Size - 15' by 15'
4. Condition - Very good.
5. Comments - Building needs paint and light maintenance. Structure looks stable.

Building 16 - Storage Shed

1. Construction Type - One story CMU walls with wood roof framing.
2. Foundation - Slab on grade
3. Approximate Size - 12' by 12'
4. Condition - Very good.
5. Comments - Structure looks stable

Building 17 - Old Engineering

1. Construction Type - Wood framed. Similar to house construction. Roof in very poor condition. Numerous water leaks into building. Impossible to determine structural condition of wall framing due to sheetrock on walls.
2. Foundation - The foundation for this building is a slab on grade foundation. There are several locations where the slab felt like it was out of level.
3. Approximate Size - 113' by 106"
4. Condition - Poor.
5. Comments - Structure will need extensive repair. Water leaks in roof, asbestos floor tiles. Slab is out of level.

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Back of Building 17.

Wing of building 17. Notice the poor condition of the roof

Opposing wing of Bldg. 17.

Building 18 -

A. Static Test Building

1. Construction Type - Tall one story (24' ceiling). Pipe columns with steel parallel chord trusses constructed from pipe. Wood purlins above that spaced every 4' on center.

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2. Foundation - Slab on grade. Appears to be fairly level
3. Approximate Size - 75' by 50'
4. Condition - Good, but structure is poor.
5. Comments - Building's structural components look very light for the spans and loads. Detailed analysis will likely show that many of this structure's components are overstressed. The current structure can best be described as a very large tin storage building similar to an old boat storage building. No insulation is present. Could use exterior maintenance and paint.

Static Test Building.

B. Shop Engineering

1. Construction Type - Modern Pre-engineered metal building.
2. Foundation - Slab on grade. Good condition
3. Approximate Size - 66' by 133'
4. Condition - Very good.
5. Comments - Very good condition modern building. Could use exterior maintenance and paint.

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Side of shop engineering Bldg 18.

C. Engineering Test and R&D Wing

1. Construction Type - Very light pipe steel truss and wood purlins. Very similar to shed like construction. Tin siding with much rust along bottom of exterior walls.
2. Foundation - Slab on grade. Very thin concrete, 5" thick at exterior edges. Foundation was most likely flatwork at one time which has been enclosed.
3. Approximate Size - Each wing is 27' by120'
4. Condition - Poor.
5. Comments - These two wing structures appear to be open air sheds or awning roofs which were enclosed. The foundations are thin like flatwork or driveway construction. Poorly maintained exterior with evidence of rust holes and water penetration.

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Testing wing Bldg 18, Notice the thinness of the foundation.

Opposing wing of Bldg. 18, notice the thinness of the foundation

Building 19 - Final Paint Shop

1. Construction Type - Pre-engineered metal building. CMU interior dividing walls between 4 paint bays. Surface rust on some steel bolts and members. Rust holes at bottom of vertical siding in numerous locations.
2. Foundation - Slab on grade foundation. Appears adequate.

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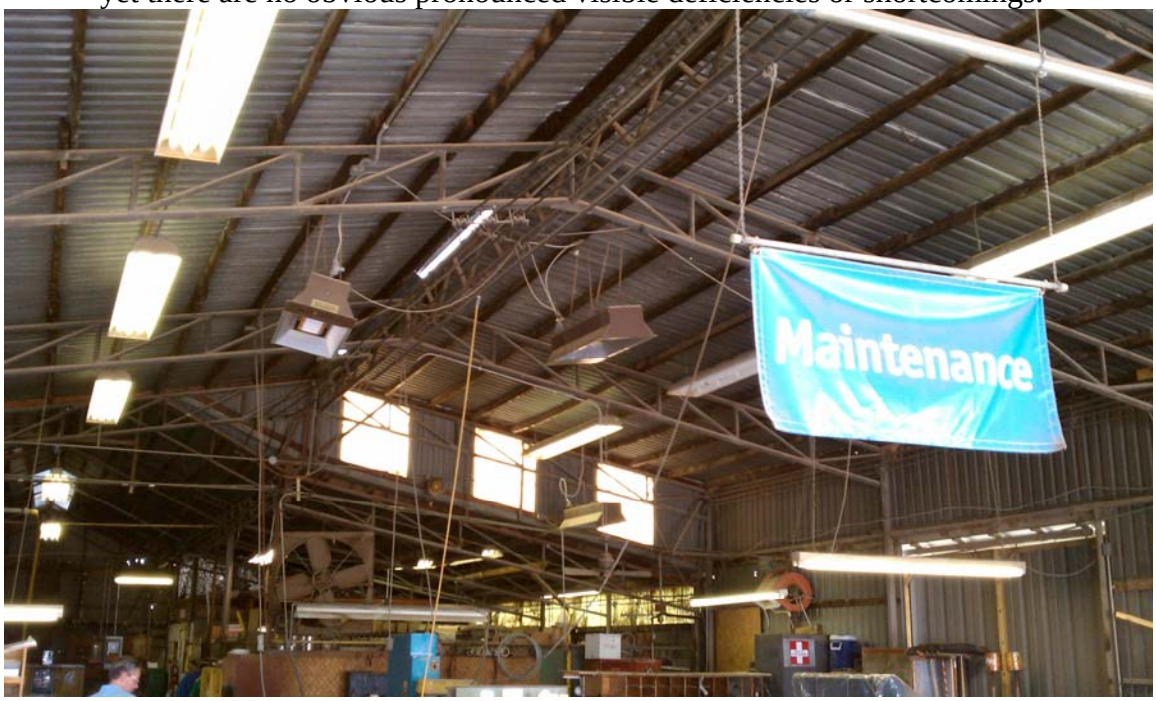
3. Approximate Size - 74' by 74'
4. Condition - Good.
5. Comments - Structure is adequate and stable.

Building 20 - Maintenance

1. Construction Type - One story with a mix of wood and steel construction. Corrugated tin roof with 2x4 walls and 2x6 joists. Pipe truss frames and intermixed steel columns.
2. Foundation - Slab on Grade
3. Approximate Size - 103' by 37'
4. Condition - Fair.
5. Comments - Structure is an eclectic mix of types. A detailed analysis of this uilding would likely result in numerous code deficiencies from over-spanned members and inadequate connections based on the ad-hoc nature of the building, yet there are no obvious pronounced visible deficiencies or shortcomings.



Back of Maintenance Building

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Back of Maintenance Building

Building 21 - Solvent Storage

1. Construction Type - One story steel columns with wood framing for roof structure. Very light construction.
2. Foundation - Slab on grade.
3. Approximate Size - 25' by 30'
4. Condition - Average.
5. Comments - Building needs paint and maintenance. Surface rust on steel from solvents. Structure looks light and some visible rafter spans do not meet current code. Steel columns look adequate for load. Bottom of walls are not affixed to the foundation to provide ventilation, which also means walls do not provide shear bracing against wind. The small steel columns do not look adequate to provide enough lateral strength against wind loads.

Building 27 - Paint Storage

1. Construction Type - Metal Shed construction. Non insulated.
2. Foundation - Slab on grade
3. Approximate Size - 15' by 30'
4. Condition - Average.
5. Comments - Adequate structure. Construction is shed like in nature with tin walls and a light structural frame.

Building 28 - Records Storage

1. Construction Type - One story CMU walls with wood roof framing.
2. Foundation - Slab on grade

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3. Approximate Size - 16' by 16'
4. Condition - Very good.
5. Comments - Structure looks stable

Building 30 - Storage

1. Construction Type - One story CMU walls with wood roof framing.
2. Foundation - Slab on grade
3. Approximate Size - 16' by 16'
4. Condition - Very good.
5. Comments - Structure looks stable

Building 30, Typical CMU storage Bldg.

Conclusions

According to the Geologic Atlas of Texas printed by the Bureau of Economic Geology, University of Texas, the site lies over the Glen Rose Limestone Formation which is a limestone dolomite formation which provides high loading and stability for slab on grade foundations. Some surface alluvial and topsoil may be present on site which can negatively effect foundation performance.

The buildings on site are a variegated mix of structural types. Generally the ones that exhibit qualities of a pre-engineered building complete with frames, purlins, etc. are of a high quality which one would expect for an industrial use. In most cases these buildings are performing well and are only in need of light preventative maintenance against weather and rust. There are also several older buildings centered and built as early accessory buildings around building 07 (Machine Shop) which I believe is the oldest building on site. Building 07 is the arch barrel vault roof structure and many of the surrounding buildings appear to be mixed wood and steel frame structures. I suspect that

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these buildings entail the greatest structural unknowns and liabilities. Building 07 itself, although old, is likely a well engineered product due to its size and form.

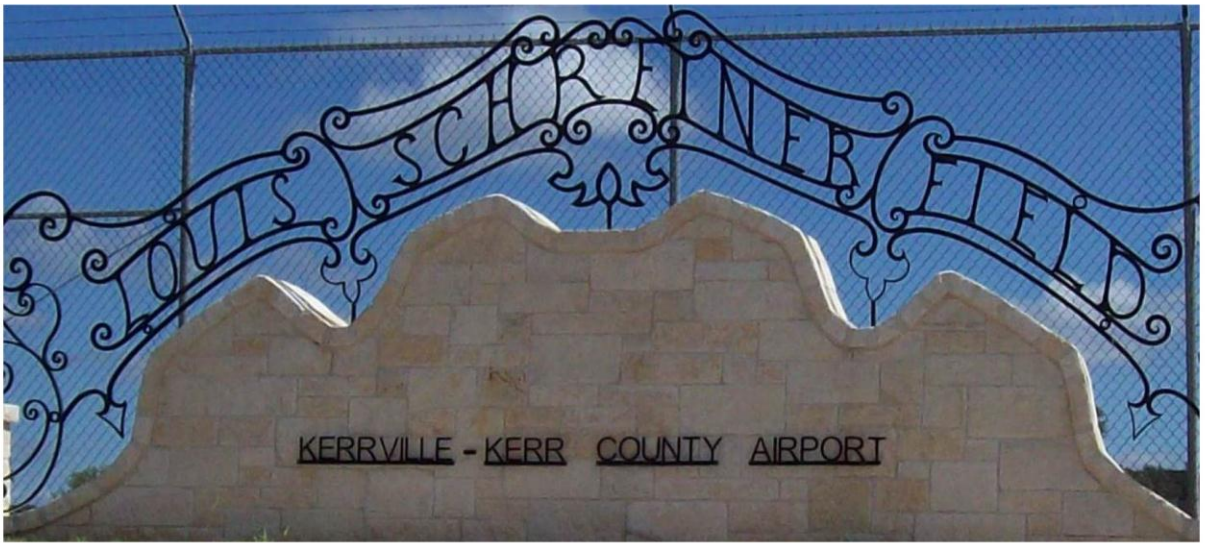
Building 17 is probably the most problematic building on site since its a wood framed building that currently has some water penetration issues. This means that the possibility for structural damage exists. Although no structural damage is visible, most of the structure is concealed by sheetrock and finishes. From experience, hidden damage could be extensive.

If there is any questions regarding the information in this report, please don't hesitate to call or e-mail me.

Sincerely,

James E Bufkin

James Bufkin PE
jamesbufkin@bufkinengineering.com
Firm #9955



Appendix C
Survey Response Data

Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

1. Contact Information

	Response Percent	Response Count
Name:	**100.0%**	**18**
Company:	44.4%	8
Address:	**100.0%**	**18**
City/Town:	**100.0%**	**18**
State:	**100.0%**	**18**
ZIP:	**100.0%**	**18**
Email Address:	88.9%	16
Phone Number:	83.3%	15
answered question		**18**
skipped question		**0**

2. What type(s) of aircraft do you own/operate (if any)?

	Response Count
	18
answered question	**18**
skipped question	**0**

3. How many years have you or your business used or based an aircraft at the Kerrville Municipal Airport/Louis Schreiner Field?

	Response Count
	17
answered question	**17**
skipped question	**1**

4. If your aircraft is currently based at another airport, will you consider basing your aircraft at the Kerrville Municipal Airport/Louis Schreiner Field if adequate aircraft storage hangars are available?

	Response Percent	Response Count
Yes	**90.0%**	**9**
No	10.0%	1
answered question		**10**
skipped question		**8**

5. Indicate the percentage of your current/projected aircraft activity.

	Response Average	Response Total	Response Count
Pleasure/recreational	64.31	1,029	16
Personal business	40.71	285	7
Corporate	5.00	10	2
Cargo	0.00	0	1
Agricultural	0.00	0	1
Flight training	**98.67**	**296**	3
Military	36.67	110	3
Other	35.00	70	2
	answered question		**18**
	skipped question		**0**

6. What is your average amount in the following categories at the Kerrville Municipal Airport/Louis Schreiner Field?

	Response Average	Response Total	Response Count
Average monthly flights	21.83	393	18
Average touch-and-go operations per month	**71.67**	**1,290**	18
Average monthly instrument approaches conducted	20.13	322	16
Average number of passengers per flight	1.56	28	18
	answered question		**18**
	skipped question		**0**

7. Indicate your percentage of annual runway use at the Kerrville Municipal Airport/Louis Schreiner Field.

	Response Average	Response Total	Response Count
Runway 12 usage	**67.78**	**1,220**	18
Runway 30 usage	19.94	339	17
Runway 3 usage	6.47	97	15
Runway 21 usage	8.35	142	17
	answered question		**18**
	skipped question		**0**

8. What is your projected aircraft use during the next 5 years?

	Response Percent	Response Count
Rental aircraft	11.1%	2
Purchase larger aircraft	16.7%	3
Keep using current aircraft	**77.8%**	**14**
Sell my aircraft	11.1%	2
If “purchase larger aircraft", what type(s)?		3
answered question		**18**
skipped question		**0**

9. What is your projected airport activity at the Kerrville Municipal Airport/Louis Schreiner Field during the next 5 years?

	Response Percent	Response Count
Increase	33.3%	6
Remain the same	**55.6%**	**10**
Decline	11.1%	2
answered question		**18**
skipped question		**0**

10. Are existing pilot services at the Kerrville Municipal Airport/Louis Schreiner Field adequate?

	Response Percent	Response Count
Yes	**77.8%**	**14**
No	22.2%	4
Please specify		6
answered question		**18**
skipped question		**0**

11. Are the existing passenger services/accommodations adequate?

	Response Percent	Response Count
Yes	**76.5%**	**13**
No	23.5%	4
Please specify		6
answered question		**17**
skipped question		**1**

12. Does your company, parent company, or clientele use the Kerrville Municipal Airport/Louis Schreiner Field?

	Response Percent	Response Count
Yes	**64.3%**	**9**
No	35.7%	5
answered question		**14**
skipped question		**4**

13. Is the size and location of the Kerrville Municipal Airport/Louis Schreiner Field adequate for your business?

	Response Percent	Response Count
Yes	**93.3%**	**14**
No	6.7%	1
answered question		**15**
skipped question		**3**

14. How do you project your business-related use of the Kerrville Municipal Airport/Louis Schreiner Field during the next 5 years?

	Response Percent	Response Count
Increase	40.0%	6
Same	**60.0%**	**9**
Decline	0.0%	0
Where are your most frequent business related destinations?		10
answered question		**15**
skipped question		**3**

15. Rate the conditions of airport facilities and equipment.

	Very Good	Good	Needs Improvement	Poor	Rating Average	Response Count
Runway length	**83.3% (15)**	16.7% (3)	0.0% (0)	0.0% (0)	1.17	18
Aiport lighting	**70.6% (12)**	17.6% (3)	0.0% (0)	11.8% (2)	1.53	17
Runway edge lighting system	**66.7% (10)**	33.3% (5)	0.0% (0)	0.0% (0)	1.33	15
Runway visual aids (PAPI/REIL)	**68.8% (11)**	31.3% (5)	0.0% (0)	0.0% (0)	1.31	16
Instrument procedures (minimums)	**75.0% (9)**	25.0% (3)	0.0% (0)	0.0% (0)	1.25	12
NAVAIDS/radar coverage	**38.5% (5)**	30.8% (4)	23.1% (3)	7.7% (1)	2.00	13
Airfield pavement strength	**58.8% (10)**	41.2% (7)	0.0% (0)	0.0% (0)	1.41	17
Airfield pavement markings/signs	**38.9% (7)**	33.3% (6)	27.8% (5)	0.0% (0)	1.89	18
Taxiway system/maneuvering	29.4% (5)	**47.1% (8)**	23.5% (4)	0.0% (0)	1.94	17
Taxiway lighting system	29.4% (5)	**41.2% (7)**	11.8% (2)	17.6% (3)	2.18	17
Airport traffic patterns	33.3% (6)	**61.1% (11)**	0.0% (0)	5.6% (1)	1.78	18
Airspace/approach obstructions	**44.4% (8)**	**44.4% (8)**	5.6% (1)	5.6% (1)	1.72	18
Automated weather reporting	44.4% (8)	**50.0% (9)**	0.0% (0)	5.6% (1)	1.67	18
				answered question		**18**
				skipped question		**0**

16. Rate the conditions of the terminal area.

	Very Good	Good	Needs Improvement	Poor	Rating Average	Response Count
Terminal building accommodations	**55.6% (10)**	27.8% (5)	16.7% (3)	0.0% (0)	1.61	18
Fuel dispensing/availability	**41.2% (7)**	23.5% (4)	23.5% (4)	11.8% (2)	2.06	17
Aircraft maintenance/repair	22.2% (4)	**50.0% (9)**	27.8% (5)	0.0% (0)	2.06	18
Terminal security/fencing/lighting	40.0% (6)	**53.3% (8)**	6.7% (1)	0.0% (0)	1.67	15
Water drainage/flooding	13.3% (2)	**66.7% (10)**	20.0% (3)	0.0% (0)	2.07	15
Commercial franchise space	8.3% (1)	**41.7% (5)**	16.7% (2)	33.3% (4)	2.75	12
Apron tie-down/parking space	22.2% (4)	**38.9% (7)**	22.2% (4)	16.7% (3)	2.33	18
Hangar space/availability	5.6% (1)	0.0% (0)	**61.1% (11)**	33.3% (6)	3.22	18
Airport line service operations	**41.2% (7)**	**41.2% (7)**	11.8% (2)	5.9% (1)	1.82	17
Regulations/contracts/leases	28.6% (4)	**42.9% (6)**	7.1% (1)	21.4% (3)	2.21	14
Auto access/parking	22.2% (4)	27.8% (5)	**33.3% (6)**	16.7% (3)	2.44	18
Courtesy/Rental car availability	38.5% (5)	**53.8% (7)**	0.0% (0)	7.7% (1)	1.77	13
				answered question		**18**
				skipped question		**0**

17. What industry is your company?

	Response Percent	Response Count
Manufacturing	10.0%	1
Services/consulting	**40.0%**	**4**
Real estate	10.0%	1
Energy/utilities	10.0%	1
Wholesale/retail	0.0%	0
Construction	0.0%	0
Government	30.0%	3
Other (please specify)		7
answered question		**10**
skipped question		**8**

18. What is the purpose of your visits to the Kerrville Municipal Airport/Louis Schreiner Field?

	Response Percent	Response Count
Executive visits/meeting	**33.3%**	**1**
Business start-up	0.0%	0
Customer contact	**33.3%**	**1**
Parts/supplies/shipments	0.0%	0
Technical/inventory visits	0.0%	0
Conferences/marketing	**33.3%**	**1**
Other (please specify)		11
answered question		**3**
skipped question		**15**

19. What is your final destination upon arrival at the Airport?

	Response Percent	Response Count
Kerrville, Texas	**76.9%**	**10**
Kerr County, Texas	23.1%	3
San Antonio, Texas	0.0%	0
Bexar County, Texas	0.0%	0
Other (please specify)		2
answered question		**13**
skipped question		**5**

20. What city and state is the headquarters of your parent or affiliated company?

	Response Count
	11
answered question	**11**
skipped question	**7**

21. Have you or your company expressed airport capital or service improvement needs before?

	Response Percent	Response Count
Yes	14.3%	2
No	**85.7%**	**12**
If yes, please specify.		3
answered question		**14**
skipped question		**4**

22. Please offer any comments important to you, but not previously addressed.

	Response Count
	11
answered question	**11**
skipped question	**7**

Appendix D
Airport Strategic Planning Document

Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

Kerrville / Kerr County Airport at Louis Schreiner Field

DEVELOPMENT OF STRATEGIC PLAN
JOINT AIRPORT BOARD
4 May 2009

Summary of Definitions

Goals - what we want to achieve

Mission - who we are and what we do

Objectives - specific details of what we want to achieve

Policies - how we will behave

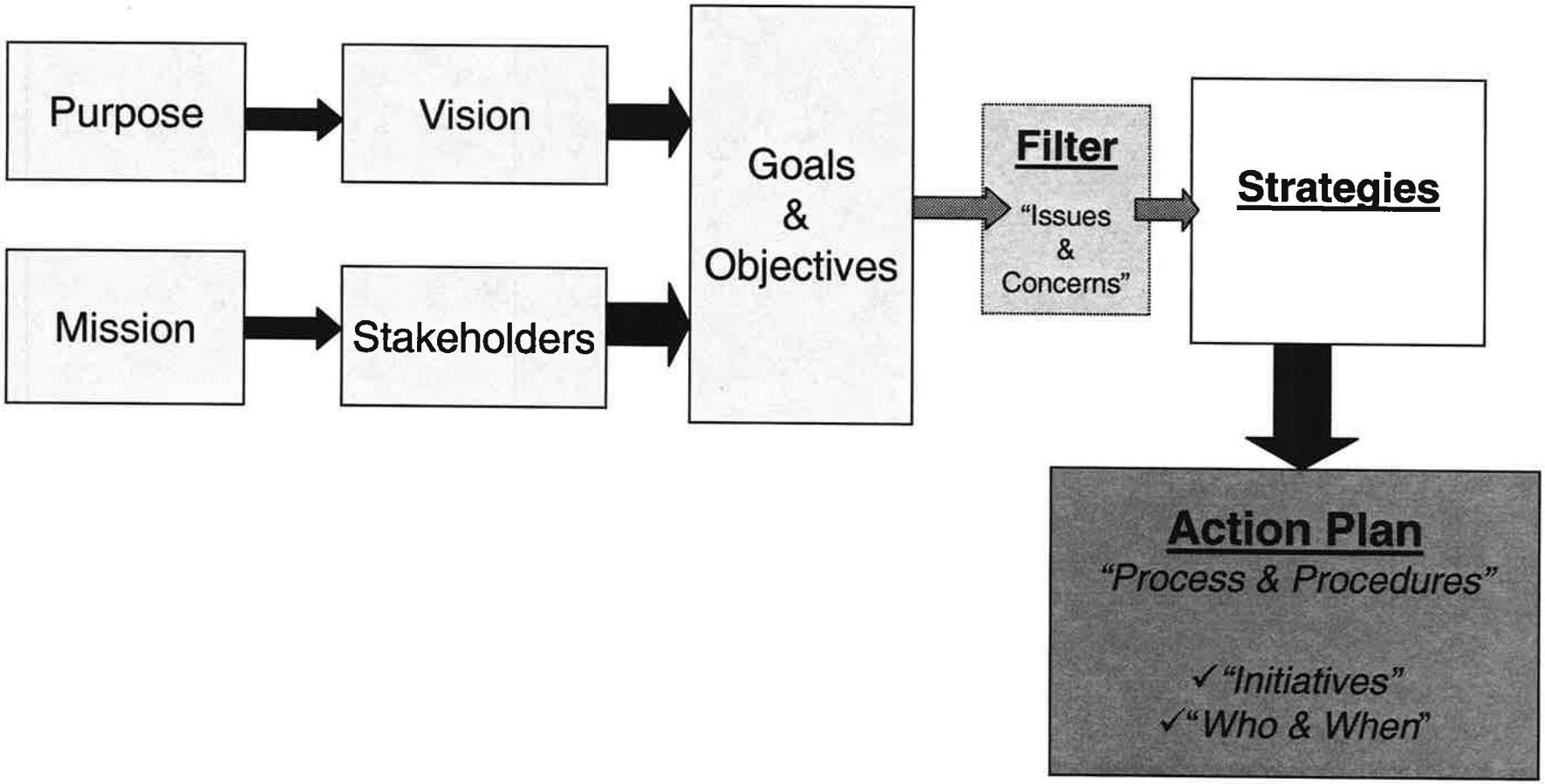
Procedures - the documented sequence of steps in accomplishing a function

Process - an organized series of steps to add value

Strategy - consistent with our mission, how we will achieve the vision & goals

Vision - what we want to become

Planning Concept



Purpose of the Kerrville/Kerr County Airport

- Provide a ***"Gateway" and "Front Door"*** to Kerrville, Kerr County and the Texas Hill Country
- Our Airport is the "***off ramp from the highways in the sky***" to enter our community and businesses
- Facilitate and enhance the capability of local businesses that use aviation in business transactions
- Provide an indirect service to the "people" of the County and City by servicing those businesses that directly use the Airport
- Provide safe, convenient, efficient and genuinely friendly facility operations for privately-owned and corporate aircraft, air service, flight training, emergency air service providers, non-scheduled commercial air, governmental aircraft, aircraft manufacturing & service and maintenance industries; and to aviation groups/associations (EAA, AOPA, CAP)
- Make Kerr County more attractive to new business ventures by providing a close by convenient aviation transportation mode

Kerrville/Kerr County Airport Stakeholders

- Aeronautical users of the Airport
- Neighbors of the Airport
- Citizens of the City of Kerrville
- Citizens of Kerr and adjacent counties
- Federal Aviation Administration
- Texas Department of Transportation, Aviation Division
- Tenants who provide services and products; especially,
    - Mooney Airplane Company
- Passengers and crews, originating and destination
- Taxpayers: Local (Kerrville & Kerr County) and National (US)
- Joint Airport Board, Kerr County and City of Kerrville employees who provide services to the Airport Board

Responsibilities of Kerrville/Kerr County Airport Toward the Stakeholders

- Provide a safe, efficient and well maintained facility
- Manage with fiscal responsibility
- Meet the stakeholders' needs
- Consider environmental impacts "inside and outside" the fence line
- Communication, "inside and outside" the fence line

Kerrville/Kerr County Joint Airport Board
Mission Statement

"Plan, construct, manage and maintain an exceptional aviation gateway to Kerrville, Kerr County and the Texas Hill Country; furthermore,

Provide a safe, convenient, efficient, and 'genuinely friendly' base of operations for our users."

Our Values

- Safety
- Communications
- Integrity
- Efficiency
- Competence
- Consistency
- Fiscal Responsibility
- Continuous Improvement

Vision

1. To be the best general aviation airport in the region
2. To provide an exceptional general aviation facility
3. To be the airport that aircraft owners and operators choose to use
4. To maintain our current facility use as shown in our Airport Master Plan
5. To wisely and compatibly use our land and infrastructure assets
6. To maintain and meet the aeronautical users requirements for services and facilities; specifically, to include development of additional hangar space
7. For the Airport to be recognized as a valuable asset by all of our stakeholders
8. To provide an efficient, cost effective use of taxpayer funds
9. To reduce over time, the taxpayer funding burden for ongoing maintenance of operations costs

Products and Services

- Runway Use
- Taxiway Use
- Hangar Space
- Terminal Facilities
- Contract for:

  Fuel (Jet & AV Gas), Aircraft Maintenance Services, Catering, and Rental Cars
- Pilot Navigation Aids:

  Visual & Electronic
- Weather Services
- Airport Lighting
- Fencing
- Animal Control

Goals

1. Increase the number of aircraft based here by 2015 by aircraft type classification
2. Increase revenue: fuel sales and rental of facilities
3. Progress towards having annual operating expenses covered by annual operating revenue by 2020

Issues, Concerns & Threats (1 of 2)

1. Dependence on (Federal, State, Local) funds for operations and capital improvements makes the Airport vulnerable to decisions by other agencies.
   → Current plan to transfer operational and maintenance funding to Kerr County may increase vulnerability to the decisions of others.
2. Kerr County does not have in place a "like" mechanism for funding capital improvements comparable to Kerrville's access to "4B" sales tax funds through its Economic Improvement Corporation.
   → This may make it difficult to get required joint approval of capital funds.
3. The general downturn of the US economy may result in a decrease in aircraft purchases, aircraft storage, and airport use; thereby, resulting in a loss of revenue to the Kerrville/Kerr County Airport.

Issues, Concerns & Threats (2 of 2)

4. The hangar shortage at the Airport is driving potential customers to other airports.
5. Security Regulations (those traditionally required by commercial service airports) may increase costs or make our Airport less attractive to potential general aviation customers.
6. Loss of tenant revenue could require a capital expenditure to revise facilities to make them attractive to other potential tenants.
7. Building on land adjacent to the airport increases population density and related concerns such as noise.

Strategic Directions (1 of 2)

1. Develop a Strategic Planning Document
2. Proactively communicate the airport's purposes, benefits, and plans in a manner that enables appropriate funding decisions by FAA, TxDOT Aviation Division (Department of Transportation), The City of Kerrville, and Kerr County
3. Develop plans, acquire funding, build and operate airport-owned hangar facilities
4. Communicate requirements and plans, as appropriate, with City & County Organizations (KEDF, EIC, COC)
5. If needed, be prepared to upgrade the facilities currently leased by Mooney Airplane Company to make them attractive to other clients
6. By adding hangar facilities, increases fuel and maintenance revenue through the addition of new customers

Strategic Directions (2 of 2)

7. Complete Phase II of the Drainage/Taxiway Project
8. Support continued education of the Airport Manager of selected AAAE courses that enhance Operations & Maintenance of the airport
9. Review and expand documentation of operating procedures (Airport Code & Minimum Standards) to seek continuous improvement
10. Document the role of the Airport Board
11. Develop timely, accurate, defensible, and logical operating plans annually
12. Review and develop Capital Improvement Plans in conjunction with County, City, TxDOT Aviation, and FAA annually

Roles For the Kerrville/Kerr County Joint Airport Board

- Evaluate Needs
- Perform Planning
- Define Funding Requirements
- Facilitate Seeking Funds
- Develop Projects
- Oversee Projects
- Monitor Ongoing Operations
- Hire Professional Staff
- Maintain a full scope "Policies & Procedures" manual for staff and consistent Board actions

Action Items/Strategic Initiatives

(Lead Person)

- ✓ Review and Modify, as required, airport zoning around the Airport
  (Fred)
- ✓ Contract Services - develop a list of items for possible stand alone contracts
  (Mark)
- ✓ Review and amend the Airport Code/Minimum Standards
  (Fred)
- ✓ Review and Update CIP
  (Steve)
- ✓ Review leases of all tenants to ensure equal standards and restrictions
  (Tom)
- ✓ Develop "Hangar Project" to increase revenues
  (Tom)

Action Items/Strategic Initiatives

(Lead Person)

- ✓ Update Airport Master Plan and Airport Layout Plan
  (Fred)

- ✓ Develop "Best Use" Land Development Plan
  (New Guy)

- ✓ Develop Airport Security Plan including Perimeter Access Controls
  (Steve)

- ✓ Develop Contingency Plan based on Mooney vacating industrial area; includes a "best use review" to optimize the revenue generation of that area
  (Mark/New Guy)

- ✓ Improve our Front Door Image
  (Tom)

- ✓ Review for completeness Board Policies & Procedures
  (Mark)

Appendix E
Airport Code 02-08-2010

Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

Kerrville/Kerr County Airport
Louis Schreiner Field

AIRPORT MANAGER'S OFFICE
1877 Airport Loop
Kerrville, Texas 78028

PHONE: 830.896.9399
FAX: 830.896.9440

AIRPORT CODE

Kerrville/Kerr County Airport Code
TABLE OF CONTENTS

ARTICLE 1. GENERAL

Section 1.01. Rules of Interpretation.

(a) For purposes of interpreting this Code, the following definitions of words shall apply:

1. words used in the present tense include the future tense;

2. words used in the singular include the plural;

3. words used in the masculine gender include the feminine gender;

4. the words “shall,” “must” and “will” are mandatory;

5. the words “may” and “should” are permissive;

6. the word “building” includes the word “structure”;

7. the term “used for” includes “designed for” or “intended for” or “maintained for”, and “occupied for”; and

8. capitalized terms are generally terms with specific intended meanings, the definitions of which are contained in the “Definitions” section of this Code, Article VII.

(b) Unless specifically provided otherwise, in computing any period of time prescribed or allowed herein, the day of the act, event, or default from which the designated period of time begins to run shall not be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the next regular business day. When the period of time prescribed or allowed is less than seven (7) days, intermediate Saturdays, Sundays, and legal holidays shall be excluded in the computation. A half-holiday shall be considered as a day to be counted, and not as a legal holiday, for purposes of time computation herein. “Legal holiday” includes any holiday designated as a holiday by the Congress of the United States or by the Texas legislature. Whenever a notice, petition or other document is required to be filed within a specified time period, the notice, petition or other document must be filed with the appropriate office or individual not later than 5:00 p.m. on the last day of the period computed.

(c) Where this Code requires an act on the part of an “owner” or “lessee” or other individual, and the property or item is owned, leased or otherwise under the control of several Persons, regardless of the relationship between them, the act

will be considered to have been taken by, on behalf of, and with the express consent of all such Persons.

Section 1.02. General Conditions of Use.

The conditions under which the Airport or any of its facilities may be used shall be as established pursuant to this Code or otherwise by the Airport Board, and/or the City Council and the County Commissioners' Court, acting jointly.

Section 1.03. Adopted by Reference.

The following publications, on file with the City and County Clerks, are hereby adopted by reference as if set out at length in this Code:

(a) Kerrville/Kerr County Airport Rates and Charges Schedule and any amendments thereto as may be approved by the Airport Board.

(b) Interlocal Agreement for Joint Management of Kerrville/Kerr County Airport "Joint Action Agreement" dated August 10, 2004 as the same may be amended.

(c) Airport Management Contract dated August 26, 2004 as the same may be amended.

Section 1.04. Permission to Use Airport Conditional; Denial of Permission.

Any permission granted by the Airport Manager or Airport Board directly or indirectly, expressly or by implication, to enter upon or use the Airport or any part thereof, including but not limited to, operators, off-Airport users, crew members and passengers, spectators, sightseers, pleasure and commercial vehicles, officers and employees of airlines, lessees and any other Person occupying space at the Airport or doing business with the Airport, its lessees, sublessees and permitees, and any other Person whatsoever, whether or not of the type indicated, is conditioned upon compliance with this Code, the Airport Rules and Regulations, the Airport Minimum Operating Standards and any other regulations promulgated hereunder.

Entry upon or into the Airport by any Person shall be deemed to constitute an agreement by such Person to comply with this Code. The Airport Board reserves the right to deny any or all usage of the Airport to any Person for good cause.

Section 1.05. Consent of Airport Board.

Unless expressly provided otherwise, any consent or other permission of the Airport Board under this Code must be obtained in advance in writing and signed by the Airport Board President.

Section 1.06. Notices and Applications.

Unless expressly provided otherwise, any notice or application to the Airport Board must be delivered to the Airport Manager during normal business hours at the Airport Manager's Office in order to be considered effective.

Section 1.07. Conflicting Laws, Ordinances, Regulations and Contracts.

(a) In any case where a provision of this Code or an Airport Rate or Charge adopted hereunder is found to be in conflict with (i) any law or regulation promulgated by a state or federal authority, or (ii) any other provision of this Code, or regulations adopted hereunder, or (iii) in conflict with a provision of any zoning, building, fire, safety, health or other ordinance or code of the City/County, either the higher authority, or the provision which establishes the stricter or more stringent standard for the promotion and protection of the health and safety of the people shall prevail.

(b) In cases where two (2) or more provisions of this Code are in conflict, the most stringent or restrictive shall prevail.

(c) It is not intended by this Code to repeal, abrogate, annul, or in any way impair or interfere with existing provisions of other laws or ordinances, except those specifically repealed by this Code, or to excuse any Person from performing obligations under any Airport lease or other contract.

(d) No existing or future Airport contract, lease, agreement or other contractual arrangement, nor any payment or performance thereunder, shall excuse full and complete compliance with this Code. Compliance with this Code shall not excuse full and complete compliance with any obligations under any existing or future Airport contract, lease, agreement or other contractual arrangement.

(e) Compliance with this Code does not excuse failure to comply with any other law.

Section 1.08. Application.

Except where expressly limited by its terms, this Code is effective throughout the City/County, where applicable.

Section 1.09. Effect of Agreements with Federal Government.

All lease agreements and permits and other contractual or governmental arrangements to which the City/County may be a party shall be subordinate to the provisions of any

existing or future agreement between the City/County and the United States relative to the operation and maintenance of the Airport.

Section 1.10. Conformance with Federal, State and other Airport Rules, Regulations and Agreements.

(a) No Person shall navigate, land Aircraft, or conduct any Aircraft or other operations on or from the Airport, nor shall any Person engage in any other Aeronautical Activity at the Airport or elsewhere within the City/County, otherwise than in conformity with the requirements of the Federal Aviation Administration and all other applicable federal, state, City/County laws, statutes, ordinances, and this Code.

(b) Any use of the Airport by any Person constitutes that Person's agreement to conform in all respects to the requirements of any grant agreements by the City/County with the State of Texas, the United States, or any other governmental entity.

Section 1.11. Liability of City/County.

Neither the City/County nor the Airport Board are responsible or liable for any loss, injury or damage to Persons or property on the Airport for any reason, including but not limited to, fire, civil disorder, criminal activity, theft, vandalism, winds, flood, earthquake, collision, act of third parties or otherwise, and/or acts contrary to this Code or any regulations promulgated hereunder.

Section 1.12. Indemnification.

To the fullest extent permitted by law, any Person accessing or using the Airport or any of its facilities, or any of the Person's successors, assigns and guarantors, shall indemnify, defend, pay and hold the Airport Board, the City/County, the Contractor, any of their agents, employees, officials, managers, officers, boarders and representatives harmless from and against all claims, demands, charges, penalties, obligations, fines, administrative and judicial actions or proceedings, suits, liabilities, judgments, damages, losses, costs and expenses of any kind or nature (including, but not limited to, attorney fees and expenses, expert witness and consultant fees and expenses, arbitration fees, court costs and the cost of appellate proceedings) arising from said access or use, or from any other act or omission of said Person (or anyone for whose acts or omissions said Person may be liable) including, without limitation, the discharge of any duties or the exercise of any rights or privileges pursuant to this Code or any Airport Rules and Regulations or Minimum Operating Standards promulgated hereunder. This Section applies, without limitation, to claims of personal injury, bodily injury, sickness, disease or death, and to claims of property damage (including City/County property), destruction or other impairment of every description without limitation, loss of use, and to claims of

environmental property damage (including, without limitation, cleanup, response, removal and remediation costs).

Section 1.13. Forms.

The Airport Board shall have authority to specify forms to be used for applications, permits, payments, reports and other documents required under this Article and to reject any documents not conforming to said forms.

Section 1.14. Supplementing information.

Within fifteen (15) calendar days upon discovery of a material misstatement, omission or other inaccuracy or material change in any information submitted in any application, report or other document provided to the Airport Board or the Airport Manager, the Person submitting the information shall inform the Airport Manager in writing of the inaccuracy or change and shall provide the Airport Manager with the correct information in writing.

Section 1.15. Payment of Fees and Charges.

Unless otherwise provided for in this Code, no Person shall perform any activity for which a fee or charge is imposed under this Code without first reporting the activity to the Airport Manager and paying the appropriate fee as identified in the Airport Rates and Charges schedule. Notwithstanding the preceding sentence, when a reporting procedure in this Code specifically provides for subsequent reporting, prior reporting is not required. Fees, rates and charges for use of any Airport facilities and for any service or accommodations provided by the Airport shall be as set by the Airport Board.

Section 1.16. Airport-related Fee Administration and Collection.

The Airport Manager shall be responsible for the administration and collection of Airport-related fees and charges.

Section 1.17. Payment of Bills and Default of Obligations.

All bills presented to Airport users by the Owners or their designee are payable upon presentation. When any Person is formally notified that he is in default of any written or implied obligation to the Airport, whether it be for breach of performance, services, covenants, or for nonpayment; the Person shall thereafter be billed for all losses of revenue and expenses incurred to reestablish performance or service and other costs, unless the Person files with the Airport Manager within ten (10) calendar days of receipt of the formal notification a statement that corrective or preventive measures have been initiated and are being diligently carried out. If the promises contained in the statement are not fulfilled, the Person will be considered in absolute default and the Airport

Manager may initiate appropriate lawful steps. Airport billings are to be made payable to the Airport and shall be delivered to the Airport Manager.

Section 1.18. Severability

If any section, subsection, sentence, paragraph, clause or phrase of this Ordinance is, for any reason, held to be unconstitutional or invalid, such holding shall not affect the validity of the remaining portions of this Code. The Airport Board hereby declares that it would have passed this Code and each section, subsection, sentence, clause, or phrase hereof irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared unconstitutional or invalid, and, to this end, the provisions of this Code are hereby declared to be severable.

Section 1.19. Use of City/County-owned Airport Property.

The Airport has been developed and improved with FAA Airport Improvement Program (AIP) grant assistance and the City/County and Airport Board are required to operate the Airport for the use and benefit of the public, and to make the Airport available for Commercial Aeronautical Activities in service to the public. The FAA's Grant Assurances require that Airport Aeronautical Properties, i.e., land, buildings, office space, counter space, aircraft storage facilities, are only leased to commercial enterprises that conduct aeronautical activities.

Aviation-Related Activities, as they relate to goods and services for passengers and cargo, are typically offered for leasing in airport areas so designed on the Airport Layout Plan (ALP) as "aviation or non-aviation industrial development" areas.

The Airport Board will act to conform with all Grant Assurances concerning the location or placement of Commercial Activities.

The Airport Manager shall have the authority to enter into a license, permit or other such agreement for the use of any City/County owned Airport property as authorized by the Airport Board, including but not limited to, land, buildings, office space, counter space, and Aircraft Storage facilities, subject to the following conditions: all Airport permits or licenses shall be in a form approved by the Airport Board and shall remain in effect until such time as the permittee requests cancellation in writing, or the permit is revoked pursuant to this Code.

Section 1.20. Access Codes/Devices.

Unless otherwise approved in writing by the Airport Manager, Persons who have been provided either a code or access device for the purpose of obtaining access to the Airport shall not divulge, duplicate or otherwise distribute the same to any other Person.

Section 1.21. Runway Weight-Bearing Capacities.

Aircraft exceeding maximum currently published Runway weight-bearing capacities may be permitted to operate from the Airport in an emergency or pursuant to Airport Manager consent.

Section 1.22. Permit not Transferable.

No lease, license, permit or agreement shall be assigned or transferred to another Person without the prior written consent of the Airport Board.

Section 1.23. Authority to Act**.**

In this Code, any authority granted to the Airport Board may be delegated to the Airport Manager, and where such authority has been so delegated, the Airport Manager has the same authority and power to act as though his act were the act of the Airport Board acting in its lawful capacity at a properly posted and called meeting.

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ARTICLE II MINIMUM OPERATING STANDARDS

Article IIA – Application of Minimum Operating Standards.

Section 2A.01. Applicable to All Users.

All Persons conducting Aeronautical Commercial Activities (Commercial Operators) at the Airport shall, as a condition of conducting such activities, comply with these Minimum Operating Standards and any amendments thereto. The requirements set forth herein are the minimum standards applicable to all Commercial Operators at the Airport, but the Commercial Operators are encouraged to exceed these minimums in conducting their activities. These Minimum Operating Standards shall be deemed to be a part of each Commercial Operator's Lease, license, permit or agreement with the Airport Board unless any such standards or provisions are expressly waived or amended by the Airport Board.

Section 2A.02. Requirements of all Commercial Operators.

Each Commercial Operator Shall:

(a) Comply with the Airport Code, and any other regulations approved by the Airport Board for the safe, orderly and efficient operation of the Airport;

(b) have use of sufficient space in an existing facility, through lease or other agreement, to accommodate the proposed operation, or shall lease a minimum of one-half (1/2) acre of contiguous Airport property of which 85 percent must be developed, in the form of buildings, parkings lots, ramps, etc., sufficient to accommodate the proposed operation;

(c) Maintain insurance as required by the Airport Code;

(d) Pay all applicable established fees and charges when due;

(e) Prior to commencing any operations, submit all applicable Airport Business Permit application(s) to the Airport Manager, and receive approval therefor;

(f) For its employees, provide adequate office space, adequate lounge, restroom, and automobile parking facilities;

(g) For its customers, where applicable, provide adequate Hangar/Patio Hangar facilities, use of a paved Aircraft parking Apron, use of paved automobile parking spaces, restrooms, and a lounge or waiting room;

(h) Employ a sufficient number of trained, on-duty personnel to provide for the efficient, safe, orderly and proper compliance with its obligations under its lease, license, permit or agreement;

(i) Control the conduct and demeanor of its personnel, subtenants, licensees and invitees and, upon objection by the Airport Manager concerning the conduct or demeanor of any such Person, shall immediately take all lawful steps necessary to remove the cause of the objection;

(j) Conduct its operations in a safe, orderly, efficient and proper manner so as not to unreasonably disturb, endanger or be offensive to others; and

(k) Shall do nothing that interferes with the effectiveness or accessibility of any public utility system, drainage system, sewer system, fire protection system, sprinkler system, alarm system or fire hydrant and hoses.

(l) On request, provide evidence of current financial solvency to the Airport Manager.

Section 2A.03. Multiple Activities by One Commercial Operator.

Whenever a Commercial Operator conducts multiple activities pursuant to one lease, license, permit or agreement with the Airport Board, the Commercial Operator shall comply with the Minimum Operating Standards set forth herein for each separate activity being conducted. If the Minimum Operating Standards for one of the Commercial Operator's activities are inconsistent with those for another of the Commercial Operator's activities, then the Minimum Operating Standards which are most beneficial to the Airport, and/or which are most protective of the public's health, safety and welfare, shall apply.

Section 2A.04. Activities not Covered by Minimum Operating Standards.

Any activities for which there are no specific minimum standards set forth herein shall be subject to such standards and provisions as are developed by the Airport Manager on a case-by-case basis and set forth in such Commercial Operator's written lease, license, permit or agreement with or from the Airport Board.

Section 2A.05. Waiver or Modification of Standards.

The Airport Board may waive or modify any portion of these Minimum Operating Standards for the benefit of any governmental agency performing non-profit public services, fire protection or fire-fighting operations. The Airport Board may grant to the Airport Manager the authority to waive or modify any portion of these Minimum Operating Standards for any Person when in his opinion such waiver or modification is in

the best interest of the Airport and will not result in unjust discrimination among Commercial Operators at the Airport.

Article IIB – Airport Business Permit Application Process

Section 2B.01. Airport Business Permit Applications.

Any Person who desires to conduct any Aeronautical Commercial Activities at the Airport shall, prior to conducting such activities, submit an Airport Business Permit application to, and receive approval thereof, from the Airport Manager, where applicable. In addition to the following requirements, the Airport Manager may require the applicant to provide additional information should it be necessary to ensure compliance with these Minimum Operating Standards. The applicant shall, at minimum, submit the following documentation with the application:

(a) A detailed description of the scope of the intended operations, including all services to be offered;

(b) The amount of land, office space, and/or Aircraft storage areas required for the operation;

(c) A detailed description of any improvements or modifications to be constructed or made to Airport property, including cost estimates and a construction timetable;

(d) The proposed hours of operation;

(e) Documentation of the applicant's financial capabilities to construct any improvements and to conduct any proposed activities;

(f) A detailed description and/or evidence of the applicant's technical abilities and experience in conducting the proposed activities, including Personal references;

(g) The commencement date for the applicant's activities and the term of the lease, license, permit or agreement sought, including all option periods;

(h) One of the following:

1. Corporate applicants shall provide a copy of the articles of incorporation as filed with the Secretary of State;

2. Limited Liability Company applicants shall provide a copy of the articles of organization as filed with the Secretary of State;

3. Limited Partnership applicants shall provide a copy of the certificate of limited partnership as filed with the Secretary of State; or

4. General Partnership applicants shall provide a certified copy of the written partnership agreement;

(i) A copy of a current certificate of insurance, in the amounts outlined hereunder, naming the Owners as additional insureds;

(j) A copy of a current lease/sublease or other agreement with the Airport Board or a bona fide Airport tenant;

(k) A rates and charges schedule of all services to be provided at the Airport; and

(l) Copies of all applicable Federal Aviation Administration (FAA) certificates.

Section 2B.02. Processing; Denial.

The Airport Board may approve or disapprove an application for a license, permit or agreement to conduct activities at the Airport. The Airport Board may approve any such application that meets the criteria stated in this Code. The Airport Board may deny any application if it determines that:

(a) The applicant does not meet the qualifications and standards set forth in the Airport Code;

(b) The proposed activities are likely to create a safety hazard at the Airport;

(c) The activities will require the City/County to expend funds, or to supply labor or materials as a result of the applicant's activities if either Owner chooses not to do so, or if it will result in a financial loss to the Airport;

(d) No appropriate space or land is available to accommodate the proposed activities;

(e) The proposed activities are not consistent with the Airport Master Plan.

(f) The proposed activities will result in a congestion of Aircraft or Buildings, a reduction in Airport capacity, or an undue interference with other operations at the Airport;

(g) The applicant or any of its principals has knowingly made any false or misleading statements in the course of applying for a license, permit or agreement;

(h) The applicant or any of its principals has a record of violating this Code or FAA regulations, or any other applicable laws, ordinances, rules or regulations; or

(i) The applicant has not submitted appropriate documentation supporting the proposed activity as required by Section 2B.01.

Section 2B.03. Appeal Process.

(a) An applicant may appeal denial of an application for an Airport Business Permit or the revocation of the same by providing written notice to the Airport Manager of intent to appeal within ten (10) calendar days of said denial.

(b) If the tenth day falls on a weekend or holiday, the notice of appeal shall be considered effective if it is delivered to the Airport Manager before 5:00 o'clock p.m. on the first regular business day following the expiration of the ten (10) days specified herein.

(c) The Airport Board shall hear and decide all appeals from the Airport Manager's decision to revoke or deny an application for an Airport Business Permit. Upon receipt of written notice of intent to appeal, the Airport Manager shall schedule a hearing on the appeal, which hearing shall be held no later than 10 days after notice of appeal is received by the Airport Manager.

(d) Applicant shall be notified in writing of the date, time and place of the scheduled appeal review by the Airport Board, and of the applicant's right to appear and participate in the appeal hearing.

(e) If Applicant fails to appear at the hearing, the appeal shall be deemed to have been waived by Applicant, and the denial of the permit shall become final.

(f) If the Applicant appears at the hearing, the Airport Board shall permit the applicant and the Airport Manager to present arguments and evidence, and may ask questions of each.

(g) The Airport Board shall render its decision in writing within ten (10) calendar days after the conclusion of the appeal hearing, and its decision shall be final.

Article IIC – General Contractual Provisions

Section 2C.01. Intent of Article.

These regulations prescribe Minimum Standards for the conduct of Aeronautical Commercial Activities at the Airport and specify certain clauses that will be included in lease, license, permit or concession agreements enabling the conduct of such activities.

The terms herein shall be applied uniformly to all Persons operating on or desiring to operate from the Airport.

Section 2C.02. Overriding Right of Airport Board.

Any clause herein to the contrary notwithstanding, the Airport Board reserves the right to develop and make any improvement to the Airport or to make any repairs to the Airport or any facility thereon that it deems is in its and the public's best interest. The Airport Board may make any change in any or all of the Minimum Operating Standards, Leases, licenses, permits or concessions, either retroactively or prospectively, when required by state or federal government agencies for compliance with the applicable grant provisions or related governmental policies.

Section 2C.03. All Leases, Licenses, Permits, and Agreements Subject to Certain Provisions.

Unless otherwise provided in the Airport Code, all leases, licenses, permits or agreements with the Airport Board are subject to the following provisions:

(a) Rights to engage in specific activities at the Airport are not Exclusive Rights;

(b) Airport users must agree to defend, indemnify and hold harmless the Airport Board, the City, the County, and their elected or appointed officials, officers, representatives, managers, commissioners, agents and employees from and against all damages, claims, suits, actions, losses and expenses (including, but not limited to court costs, costs of expert witnesses and reasonable attorney's fees) for Personal injury or death or for property damage or loss arising out of the use of the Airport, or from the operation or use of any vehicle owned by either the City or County;

(c) A termination clause allowing the Airport Board to terminate the Commercial Operator's lease, license, permit or agreement no later than thirty (30) days after notice of default is given to the Commercial Operator if the Commercial Operator fails to cure its default within the thirty (30) day period, and allowing the Airport Manager to terminate the Lease, license, permit or agreement immediately if the Commercial Operator fails to maintain the required insurance;

(d) No improvements or modifications to Airport property may be made without the prior written consent of the Airport Board, and without posting appropriate payment and performance bonds. Before commencing any improvements or modifications, the Commercial Operator shall submit detailed construction plans and specifications to the Airport Board for approval. Upon completion of the construction, the Commercial Operator shall provide the Airport Board two (2)

complete sets of detailed plans and specifications of the work as completed. All improvements or modifications made to Airport property shall become the property of the Airport, at no cost to the Airport upon termination of the Commercial Operator's lease, license, permit or agreement;

(e) No lease, license, permit, agreement, or any rights thereunder, shall be assigned without the prior written consent of the Airport Manager. The Airport Manager may require any potential assignee to submit biographical and financial information at least thirty (30) days prior to a proposed assignment; and.

(f) Must comply with all applicable FAA requirements.

Article IID – Insurance

Section 2D.01. General Insurance Requirements.

Each Commercial Operator shall at all times maintain in effect the following types and minimum amounts of insurance as applicable to the business to be conducted:

	Amount of Coverage (Combined Single Limit)
(a) FBO:	
Commercial general aviation liability policy with coverages for premises, operations and product/liability……	$1,000,000.00
Commercial General Liability……..	$1,000,000.00
Products Completed Operations……...$1,000,000.00	
Hangar keeper's liability……	$1,000,000.00
Personal Injury(including death)……..$1,000,000.00	
(b) Airframe and power plant repair; avionics, instrument or propeller repair:	
Commercial general aviation liability policy with coverages for premises, operations and product/liability……	$1,000,000.00
Hangar keeper's liability……..…	$1,000,000.00
(c) Air taxis and charter:	
Commercial general aviation liability policy with coverages for premises and operations……	$1,000,000.00
Aircraft liability with coverage for bodily injury and property	

damage, including passengers……..…… $1,000,000.00

(d) Aircraft rental; flight training; commercial Flying Club:

Commercial general aviation liability policy with coverages for premises and operations…… …… $1,000,000.00

Aircraft liability with coverage for bodily injury and property damage, including passengers……..…… …… $1,000,000.00

Student and renter's liability……..… $1,000,000.00

Amount of Coverage (Combined SingleLimit)

(e) Specialized commercial aeronautical activities:

Commercial general aviation liability policy with coverages for premises and operations…… $1,000,000.00

Aircraft liability (if Aircraft used in operation)……..… $1,000,000.00

(f) Clubs:

Commercial general aviation liability policy with coverages for premises and operations…… $1,000,000.00

(g) Hangar operation:

General liability policy…… $1,000,000.00

(h) Automobile Liability Coverage:

General liability policy…… $1,000,000.00

Hangar keeper's liability…… $1,000,000.00

(i) Special instructions:

Any Operator self-fueling shall have a minimum general liability policy ……..…… $1,000,000.00

Any Operator using service vehicles on Airport premises in support of its operations shall maintain the following additional coverage: Motor vehicle liability…… $1,000,000.00

(j) All insurance policies cited herein shall contain a waiver of subrogation rights endorsement with respect to the City and/or County.

Section 2D.02. Additional Insurance Required.

In addition to the types and amounts of insurance required by this Article, each Commercial Operator shall at all times maintain such other insurance as the Airport Board may reasonably determine to be necessary for such Commercial Operator's activities.

Section 2D.03. Form of Insurance.

All insurance shall be in a form and from an insurance company with a Best's financial rating of at least B ++ 6. All policies, except worker's compensation policy, shall name the City/County and their elected or appointed officials, officers, representatives, managers, commissioners, agents and employees as "Additional Insureds," and the Commercial Operator shall furnish to the Airport Manager certification of insurances evidencing the required coverage cited herein prior to engaging in any Commercial Activities. Such certificates shall provide for unequivocal thirty (30) day notice of cancellation, or material change of any policy limits or conditions.

Article IIE – General Operational Requirements.

Section 2E.01. Taxiway Access.

If not already provided, each Commercial Operator conducting Aeronautical Activities shall provide paved access from its Leased premises to the Airport's Taxi-Way/Taxi Lane/Apron/Ramp system. Such access shall meet all applicable FAA standards for the largest Aircraft type anticipated to use the Commercial Operator's premises.

Section 2E.02. Right-of-Entry Reserved.

The Airport Manager may, at all reasonable times, enter upon each Commercial Operator's premises for any lawful purpose, provided that such entry does not unreasonably interfere with the Commercial Operator's use of the premises.

Section 2E.03. Commercial Operator Rates and Charges.

Each Commercial Operator may determine the rates and charges for all of its activities and services, provided that such rates and charges are approved as provided for herein

and that they are reasonable and fairly applied to all of the Commercial Operator's customers.

Article IIF – Fixed Base Operators

Section 2F.01. Fueling.

Only an approved FBO may sell aviation fuel to the general public. A permit-holder for self-Fueling Operations shall not dispense Aircraft fuel to another Airport user.

Section 2F.02. Fuel Flowage Fees.

All fueling operators shall pay the Airport Fuel Flowage Fees. Airport Fuel Flowage Fees will be paid on all fuel (100LL, Jet A, Vehicle, Diesel etc. etc.) dispensed on Airport property. The fees shall be set by the Airport Board and published in the Airport Rates and Charges. Airport Fuel Flowage Fees may be revised periodically and adjusted as the market and competitors' prices dictate.

Section 2F.03. Land and Facility Requirements

(a) Apron: An FBO must have use of at least 96,000 square feet of either Airport property or tenant developed (not including any building area, automobile parking area, and fuel storage area) to support Aircraft operations. This area shall accommodate the following:

1. Airplane Design Group II Aircraft (wingspans up to seventy-nine (79) feet);

2. Transient Aircraft parking for twenty (20) jet Aircraft;

3. Circulation taxilanes to facilitate access to/from Aircraft parking and staging areas; and

4. Adequate area to simultaneously accommodate Transient Aircraft operations, towing of Aircraft to/from storage hangars/patio hangars, and staging of based Aircraft.

(b) Terminal Building: An FBO must have use of a terminal building, either Airport property or tenant developed, consisting of at least 2,000 square feet with a minimum of at least 1,500 square feet dedicated to customer service and support functions.

(c) Hangar Space: An FBO must have use of at least 24,000 square feet of Hangar space with at least 14,000 square feet dedicated to Aircraft Storage and at least 10,000 square feet dedicated to Aircraft Maintenance and Repair. Maintenance

Hangar floor space shall not be considered Aircraft Storage space for this requirement.

(d) Shop: An FBO must have use of at least 2,000 square feet of shop space to support Aircraft Maintenance and Repair activities, including the storage of parts and accessories.

Section 2F.04. Hours of Operation

An FBO shall provide Jet and Avgas for Aircraft fueling and line services seven (7) days per week, from half an hour before sunrise until half an hour after sunset.. Additionally, an FBO shall be open for Aircraft maintenance and repair open at least eight (8) hours per day, five (5) days per week. An FBO shall also be on-call twenty-four (24) hours per day with after-hours response times of one (1) hour or less.

Section 2F.05. Subcontracting Services, Subleasing; Restrictions

(a) An FBO shall not subcontract any activities except for Major Aircraft Alterations and Repair services and the retail sale of Aircraft parts and accessories, provided that such subcontractor meets the requirements of these Minimum Operating Standards as stated therein and operates from the FBO's premises and in such areas as are approved by the Airport Board.

(b) An FBO shall not sublease, permit or allow any other Person to operate as a Specialized Aircraft Repair Services Operator or as a Specialized Commercial Flying Services Operator within the FBO leased or permitted area, or to conduct any business venture which directly or indirectly relates to aeronautics or flight, without the prior written approval of the Airport Board.

Section 2F.06. Minimum Requirements of FBO Services.

(a) Aviation fueling:

1. An FBO shall comply with the International Fire Code, 2000 edition, as published by the International Code Council, Inc., and as amended by the City Council for the City of Kerrville, FAA Advisory Circular 150/5230-4, as amended, all requirements of the Airport Code, and all other applicable laws and regulations related to Aircraft fuel handling, dispensing and storage.

2. An FBO shall construct (or install) and maintain an on-Airport above ground fuel storage facility in a location approved by the Airport Manager. The fuel storage facility shall have total capacity for three days supply of aviation fuel for both Jet and Avgas serviced by the FBO. In no event shall the total storage capacity be less than:

- 12,000 gallons for Jet fuel storage;
- 12,000 gallons for Avgas storage; and
- An FBO shall demonstrate the capability to expand fuel storage capacity within a reasonable time period.

Nothing in this section shall preclude the construction and operation of a shared fuel farm by one or more FBO's.

3. An FBO shall not construct or modify any fuel storage or distribution facilities without the written consent of the Airport Board.

4. An FBO shall provide dispensing equipment sufficient to serve the needs of the Aircraft normally frequenting the Airport, including the provision of at least two Jet fuel refueling vehicles and one Avgas refueling vehicle. Jet fuel refueling vehicles shall have single-point and over-the-wing fueling capabilities and minimum capacity of 2,000 gallons. Avgas refueling vehicles shall have minimum capacity of 750 gallons. An FBO shall have access to a back-up Avgas refueling vehicle (with the same capabilities and minimum capacities). All equipment must be approved by the Airport Manager prior to its use for Airport Purposes. The metering devices shall be annually inspected, checked and certified by appropriate state and local agencies. The Airport Manager may inspect such equipment periodically to ensure compliance with all standards.

5. An FBO shall require all of its fuel-handling Personnel to attend training courses, obtain a fuel handler's permit, and receive periodic refresher training as required by the Airport Board and City Fire Department. An FBO shall develop a Standard Operating Procedure for aviation fueling activities and provide a current copy of the same to the Airport Manager. The City fire department, Airport Manager and/or FAA may periodically conduct inspections of the FBO's activities and Personnel to ensure adherence to safe practices.

(b) Aircraft line services:

1. An FBO shall employ and have on-duty during required hours of operation at least one properly trained and qualified employee capable of providing Aircraft fueling, Aircraft parking, and ancillary Aircraft ground services and related customer services and support.

2. An FBO shall have and maintain the equipment that is required to safely and efficiently move (tow) the Aircraft normally frequenting the Airport, including a tug and tow bars with rated draw bar pull sufficient for such Aircraft.

3. An FBO shall maintain tools, jacks, tugs, tire repair equipment, ground power units, emergency starting equipment, portable compressed air tanks, oxygen cart and supplies, fire extinguishers, chocks, ropes and tie-down supplies as are necessary for the servicing of Aircraft types expected to use the Airport.

(c) Major Aircraft Maintenance and Repair Services:

An FBO shall –

1. Provide major airframe, engine and accessory overhaul repair services for piston, turboprop, and turbine Aircraft;

2. Provide sufficient shop space, equipment, supplies and availability of parts equivalent to that required for certification by the FAA as an approved repair station; and

3. Have on-duty during normal business hours at least one Person who is currently certified by the FAA with ratings appropriate to the work being performed and holds an airframe, power plant, or Aircraft inspector rating.

(d) Sale of Aircraft parts and accessories:

An FBO shall provide retail sales of Aircraft parts and accessories as are necessary for the servicing of Aircraft types expected to use the Airport.

Section 2F.07. Monthly Fees.

(a) An FBO shall pay fees as prescribed by lease, license, permit or agreement, and as are published in the Airport Rates and Charges. At a minimum, said lease, license, permit or agreement shall include a monthly land rental payment commensurate with market rates, and the Airport Fuel Flowage Fee.

(b) All payments due the Airport shall be made payable to the Airport and shall be delivered to the Airport Manager.

Article IIG -- General Aviation Specialty Services

Section 2G.01. Hangar/Patio Hangar Leasing Services.

A Hangar Leasing Services Operator may engage in the business of constructing and operating Hangars and/or Patio Hangars to be leased. A Hangar Leasing Services Operator shall comply with the following:

(a) Lease sufficient land to accommodate the proposed number of hangars and/or Patio Hangars based on the following.

1. Compliance with any applicable FAA minimum standards for the storage of Aircraft for Hangars and Patio Hangars.

2. Hangar Leasing Services Operator shall register with the Airport Board only as many Aircraft to be based at the Airport as can be stored within the Operator's Hangars or Patio Hangars under all applicable minimum standards.

(b) The construction plans and specifications for any Hangars and/or Patio Hangars to be constructed are subject to the written approval of the Airport Board.

Section 2G.02. Aircraft Sales Services.

An Aircraft Sales Services Operator shall:

(a) Lease from an Airport Tenant or the Airport Board or have other access to a minimum of 100 square feet of office space.

(b) If conducting sales services, maintain an approved Aircraft dealer's certificate from the State of Texas.

(c) Ensure that all other fees and taxes applicable to the sale of Aircraft are paid to the appropriate parties.

Section 2G.03. Aircraft Maintenance and Repair Services.

An Aircraft Maintenance and Repair Services Operator shall:

(a) Provide sufficient shop space, equipment, supplies and availability of parts equivalent to that required for certification by the FAA as an approved repair station;

(b) Employ and have on-duty during normal business hours at least one Person who is currently certified by the FAA with ratings appropriate to the work being performed and who holds an airframe, power plant, or Aircraft inspector rating; and

(c) Not conduct Major Maintenance and Repair operations, or business activities at any time inside Hangars or other structures not designed for such activities. Specific lease agreement and/or fire codes shall determine what Hangars other structures shall be approved for Major Maintenance and repairs;

Section 2G.04. Aircraft Leasing or Rental Services.

An Aircraft leasing or rental services operator shall:

(a) Have use of appropriate office space; and

(b) Have at least one Person on-duty during normal business hours.

Section 2G.05. Flight Training Services.

A Flight Training Services Operator shall:

(a) Have use of appropriate office space and adequate classroom facilities either at the Airport or at such other off-Airport location as needed for proper operation of the Flight Training Services for the amount and type of training involved; and

(b) Have on-duty during normal business hours at least one instructor who is currently certified by the FAA to provide the type of training offered.

Section 2G.06. Specialized Aircraft Repair Services.

A Specialized Aircraft Repair Services Operator shall:

(a) Employ and have on-duty during normal business at least one Person who is currently certified by the FAA with ratings appropriate to the services offered; and

(b) Not conduct operations or business activities at any time inside Hangars other structures not designed for such functions. Specific lease agreements and/or fire codes shall determine what Hangars or other structures shall be approved for the Operator's Specialized Aircraft Repair Services;

Section 2G.07. Aircraft Charter Services.

An Aircraft Charter Services Operator shall:

(a) Have use of appropriate office space;

(b) Have on-duty during normal business hours at least one Person who holds current FAA commercial pilot and medical certificates and ratings appropriate for the Operator's flight activities. All flight crews shall be properly rated for the Aircraft operated, and the Operator shall provide reasonable assurance of the continued availability of qualified operating crews;

(c) Own or lease exclusively by written agreement Aircraft currently certified and continuously airworthy. All Aircraft shall meet the requirements of the FAA certificate held by the Aircraft Charter Service Operator; and

(d) Have and provide the Airport Manager with, appropriate and current FAR Part 135 Certificates or provisional FAR Part 135 Certificates.

Section 2G.08. Specialized Commercial Flying Services.

A Specialized Commercial Flying Services Operator shall:

(a) Have use of appropriate office space, either at the Airport or at such other off-Airport location as needed for proper operation of the Commercial Flying Services; and

(b) Have on-duty during normal business hours at least one Person who holds current commercial pilot and medical certificates with appropriate ratings for the Aircraft to be flown.

Section 2G.09. Mobile Aircraft Washing Services.

Aircraft washing is restricted to designated wash rack areas and/or other areas permitted under an approved Aircraft-washing plan. Mobile Aircraft Washing Services Operators shall submit Aircraft washing plans to, and receive approval from the Airport Manager prior to engaging in any Aircraft washing activity:

(a) An Aircraft washing plan that contains the following information:

1. Name of individual/company conducting washing services, contact name and phone number; and

2. A site map of the area in which washing will occur. The site map must contain the following;

i) An outline of the washing location to include location of runoff control structures;

ii) Approximate distance (in feet) from washing area to nearest drain(s);

iii) Reference to buildings, terminal, roads, etc.; and

iv) North arrow.

(b) A detailed description of washing method/operation, including the following details:

1. Wash water containment method(s), (ramp scrubber, containment boom, dry, etc.);

2. Amount of water used per wash and frequency of operation;

3. Name and amount of chemical(s) used per wash; and

4. If "dry" washing or waxing/coating operations are to be conducted provide affirmation that tarps will be used to collect residual material for its proper disposal and protect the ramp (if appropriate).

(c) Material safety data sheets (MSDS) for all chemicals to be used; and

(d) The method of disposal of retrieved wash/waste water. If water is to be disposed of on Airport property the following steps must be taken:

1. Disposal of wash/waste water must be done through an oil/water interceptor in to the sanitary sewer system; and

2. Approval for the discharge of wash/waste water on Airport property must be obtained from the Airport Manager. The approval letter must be included in the final washing plan.

Section 2G.10. Mobile Aircraft Maintenance and Repair Services.

(a) A Mobile Aircraft Maintenance and Repair Services Operator shall:

1. Employ at least one Person, to be on duty during normal business hours, who is currently certified by the FAA with ratings appropriate to the work

being performed and who holds an airframe, power plant, or Aircraft inspector rating; or

(2) Only conduct Aircraft maintenance and repair services on piston Aircraft weighing less than 12,500 pounds certificated maximum takeoff weight

.

(b) A Mobile Aircraft Maintenance and Repair Services Operator shall not conduct Mobile Aircraft Maintenance or Repairs or business activities at any time inside Hangars or other structures not designed for such function. Specific lease agreement and fire codes shall determine what Hangars or other structures shall be approved for Mobile Maintenance and Repairs.

Section 2G.11. Airport Rental Vehicle Concession Services.

For purposes of determining which of the Airport Rates and Charges apply to a Vehicle rental, a Vehicle shall be considered to be rented at the Airport if:

(a) The Vehicle is delivered to the customer at the Airport; or

(b) The rental agreement is entered into at the Airport even though the Vehicle is delivered elsewhere; or

(c) The customer is picked up at the Airport and transported to the Operators' off-Airport location for the purposes of renting a Vehicle.

(d) The Vehicle was reserved in advance at the Airport; or

(e) A Vehicle rented at the Airport is exchanged for another Vehicle at any location within twenty-five (25) miles of the Kerrville Airport for a time period running consecutively with the original rental agreement.

Section 2G.12. Airport Catering Services.

For purposes of determining which of the Airport Rates and Charges apply, catering services shall be considered to be airport catering services if catering is delivered to the customer at the Airport for the purpose of in-flight food service.

ARTICLE III – AIRPORT RULES AND REGULATIONS

Article IIIA General Rules And Regulations For Use Of Airport

Section 3A.01. Purpose of Rules and Regulations.

Airport Rules and Regulations provided in this document and any amendments thereto, adopted pursuant to the Airport Code, are intended for the safe, orderly and efficient operation of the Airport, and apply to all Persons using the Airport for any reason.

Section 3A.02. Conflicting Laws, Ordinances, Regulations and Contracts.

(a) In any case where a provision of these Regulations is found to be in conflict with any other of its provisions, or to be in conflict with a provision of any zoning, building, fire, safety, health or other ordinance, code, rule, or regulation of the City, County, or state the provision which establishes the higher standard for the promotion and protection of the health and safety of the public shall prevail.

(b) In cases where two or more provisions of Airport Rules and Regulations are in conflict, the most stringent or restrictive shall prevail.

(c) It is not intended by these regulations to repeal, abrogate, annul, or in any way impair or interfere with existing or future provisions of other laws, ordinances, codes, rules or regulations except those specifically repealed by this Code, or to excuse any Person from performing obligations to the City or County under any existing or future Lease or other contract, and compliance with these regulations does not excuse failure to comply with any other law.

Section 3A.03. Responsible party.

Any Person accessing the Airport shall be responsible for his actions and all actions of any Person to whom he provide access, whether directly or indirectly.

Section 3A.04. Minimum Operating Standards.

Prior to commencing any Aeronautical or Commercial Activities at the Airport, all Persons shall comply with all applicable requirements concerning such activities as are set forth in this Code.

Section 3A.05. Closing of Airport.

In the event that the conditions of the Airport are unsafe for Aircraft Operations, it shall be within the Airport Manager's authority to close the entire Airport or any part thereof for the time required to correct the unsafe conditions.

Section3A.06. Enforcement.

In the event that any Person violates these regulations, The Airport Board may call upon City or County law enforcement officers to impound property and/or impose fines as provided for under the Airport Code or other applicable laws. The Airport Board may also deny use of the Airport to any Person violating these regulations.

Section 3A.07. Appeals.

(a) An applicant may appeal any adverse action or decision of the Airport Manager by providing written notice to the Airport Manager of intent to appeal such within ten (10) calendar days of said action or decision.

(b) If the tenth day falls on a weekend or holiday, the notice of appeal shall be considered effective if it is delivered to the Airport Manager before 5:00 o'clock p.m. on the first regular business day following the expiration of the ten (10) days specified herein.

(c) The Airport Board shall hear and decide all appeals from Airport Manager decisions. Upon receipt of written notice of intent to appeal, the Airport Manager shall schedule a hearing on the appeal, which hearing shall be held no later than 10 days after notice of appeal is received by the Airport Manager.

(d) The appellant shall be notified in writing of the date, time and place of the scheduled review by the Airport Board, and shall be advised of his right to appear and participate in the appeal hearing.

(e) When required in the interests of fairness, the presiding officer of the Airport Board may grant a continuance of the hearing, but all hearings shall be heard not later than forty-five (45) days after the date that the notice of appeal was filed.

(f) The appellant may be represented by counsel at the hearing and the Airport Manager may be represented by the Contractor's attorneys. Both the appellant and the Airport Manager shall have the right to present evidence through testimony or exhibits and to cross-examine witnesses. The Airport Board shall preside over the proceedings and shall determine the order and manner of proof.

The Airport Board members may question the witnesses. The hearing shall be informal and the rules of evidence shall not apply.

(f) If the appellant fails to attend the hearing, the appeal shall be deemed to have been waived, and the Airport Manager's decision shall become final.

(g) The Airport Board may announce its decision orally at the conclusion of the hearing, but in any event shall render its decision in writing within ten (10) calendar days after the conclusion of the appeal hearing, unless all parties stipulate that additional time is required in order for the Airport Board to render a fair decision. The Airport Board's decision shall be based on a preponderance of the evidence found, and its decision shall be final.

(h) When a denial of use is the subject of an appeal under this Section, the denial of use shall not be effective unless it is sustained by the Airport Board. The denial of use shall be effective immediately when the ruling is made by the Airport Board at the time of the hearing, or upon mailing of the written notice of ruling as provided in this section, when the ruling is made at a time after the hearing is concluded

Section 3A.08. Aircraft Parking.

(a) No Person shall park any Aircraft at the Airport except within an Aircraft Parking or Storage area.

(b) No Person shall park an Aircraft in an Aircraft Parking and Storage area without first having obtained an Aircraft Storage permit if such a permitting process is then in effect.

(c) Any Person who parks an Aircraft in a transient Aircraft Parking and Storage area shall remit to the Airport Manager or FBO any applicable transient parking fees, as approved by the Airport Board.

(d) Any Aircraft parked in violation of this section that presents an operational or safety concern in any area of the Airport, shall be moved on order of the Airport Manager, the Owner's expense. The City/County shall not be liable for any damages that may result from the relocation of the Aircraft.

Section 3A.09. Aircraft Hangars.

(a) Aircraft storage Hangars shall only be used for the following purposes:

1. Storage and parking of Aircraft and associated Aircraft equipment and supplies as approved by the Airport Manager. Aircraft parked in

Hangars and Patio Hangars shall be parked in a manner so as to be completely contained in their designated space and not obstruct adjacent Aircraft Parking and Storage areas or Taxi-lanes, except for purposes of immediate and temporary staging and fueling of such Aircraft; and

2. Parking of non-Aircraft vehicles that display a valid Airport vehicle permit, should such a permitting process then be in effect.

(b) Use of Aircraft Hangars (including Patio Hangars) shall be subject to the following restrictions:

1. No Major Aircraft Alterations and Repairs shall be performed in Hangars except by properly licensed Persons.

2. Where no Personnel exit is provided, the sliding Hangar doors shall remain open as required by any applicable Fire Code(s) then in effect, and

3. Oily rags, oil wastes, rags and other rubbish and trash may only be stored in containers with self-closing, tight-fitting lids as approved by the Airport Manager.

(c) Aircraft Hangars shall be subject to inspections by the Airport Manager and City Fire Department to ensure compliance with all laws, ordinances and this Code.

(d) Requirement for Aircraft Hangar Construction: In no event shall the Airport Manager authorize construction or erection of a structure unless aircraft hangar is constructed of permanent metal and/or masonry construction, has a concrete slab floor, conforms to planning and zoning requirements and, as a minimum, meets applicable building, fire and other codes or standards applicable in the City and/or on the Airport. Any aircraft hangar constructed, including specifications and color, shall be approved by the Airport Manager.

Section 3A.10. Aircraft T-Hangars.

In addition to other provisions regarding Hangars contained herein, the following restrictions apply to T-Hangars:

(a) Major Aircraft Alterations and Repairs or Preventive Aircraft Maintenance shall not be conducted in or from any Hangar for any Aircraft not listed on the permit or lease for that Hangar without prior written approval from the Airport Manager.

(b) Oxygen or any combustible compressed gas in a cylinder or portable tank must be secured to a fixed location or secured to a portable cart designed for the cylinder(s) or tank(s). Compressed gas cylinders or tanks must have pressure relief devices installed and properly maintained. Cylinders or tanks not in use shall have a transportation safety cap installed; and

(c) Except for trickle chargers, batteries shall only be charged while the Owner, Operator or Tenant is in attendance. Aircraft batteries when installed in an Aircraft shall not be connected to a charger when the Aircraft is located inside or partially inside a Hangar.

Section 3A.11. Aircraft Patio-Hangars and Tie-Downs.

(a) Aircraft Patio Hangars and Tie-Downs shall only be used for the following purposes:

1. Storage and parking of the Aircraft listed on the Aircraft Storage Permit, if any, for that Patio-Hangar or Tie-Down permittee. Aircraft will be parked in a manner so as to be completely contained within the Aircraft parking space and not obstructing adjacent Aircraft Parking and Storage areas or Taxi Lanes, except for purposes of immediate and temporary staging and fueling of such Aircraft; and

2. Conducting Preventive Aircraft Maintenance on the Aircraft listed on the Aircraft Storage Permit, if any, for that Patio-Hangar or Tie-Down and in accordance with applicable regulations.

(b) Use of color-coded Tie-Downs, if any, shall be subject to the following restrictions:

1. Tie-Downs painted white are reserved tie-downs and shall not be used without the user first receiving an approved Aircraft Storage Permit; and

2. Tie-Downs painted yellow are Transient Aircraft Tie-Downs for the purposes of short-term or overnight parking. No Person shall park an Aircraft in a Transient Aircraft Tie-Down for a period greater than fourteen (14) consecutive calendar days unless identified by an FBO as a Transient Aircraft client. If any Aircraft is parked in violation of this section, or, in the determination of the Airport Manager, presents an operational or safety concern in any area of the Airport, the Airport Manager may cause said Aircraft to be delivered into the care of an FBO at the Airport at the Owner's/Operator's expense and without liability for damage which may result in the course of such moving.

Section 3A.12. Aircraft Maintenance Areas.

Aircraft maintenance areas as designated by the Airport Board, shall only be used for Preventive Aircraft Maintenance and in accordance with the posted rules at each maintenance area. Major Aircraft Alterations and Repairs shall only be conducted in designated Aircraft maintenance areas.

Section 3A.13. Wash Racks.

Wash racks shall be used for purposes of washing and polishing Aircraft, and any other purpose approved by the Airport Manager. Washing/cleaning materials and run-off shall be used and disposed of in compliance with all applicable federal, state, county and local laws and regulations.

Section 3A.14. Airside Roads.

Airside roads shall only be used by authorized Vehicles, which include all Airport administration vehicles, FBO fuel trucks, and other Vehicles with prior written approval from the Airport Manager.

Section 3A.15. Passenger Loading.

No Person shall enplane or deplane an Aircraft operated for the purpose of Commercial Activity that has a seating capacity greater than eight (8) passengers except at designated Gate Positions, or in other areas determined by the Airport Manager.

Section 3A.16. Terminal Gate Positions.

Terminal gate positions, if any, shall only be used for the parking of Aircraft for periods up to two (2) hours, unless otherwise authorized in writing by the Airport Manager. Additionally, no Person shall repair any Aircraft while it is parked at a terminal gate position, except when repairs are needed to relocate the Aircraft.

Section 3A.17. Smoking Areas.

No Smoking shall be permitted within fifty (50) feet of an Aircraft, fuel truck or fuel storage area, or any other location where smoking is prohibited by law, or any other location designated by the Airport Manager as a no-smoking area.

Section 3A.18. Restricted Areas.

(a) No Person shall enter the Airside area, except as necessary for the lawful use of an Aircraft thereon, or to conduct a permitted business activity, without prior consent of the Airport Manager.

(b) No Person shall enter any area posted as being closed to the public, except with the consent of the Airport Manager.

(c) No Person shall enter into, remain in, or place any object in, or remove any object from any Hangar, Patio-Hangar or other Building at the Airport without prior consent of either the Airport Manager, or the Person with the legal right of possession of such Hangar or Building.

Section 3A.19. Access Codes/Devices.

Persons who have been provided either a code or device for the purpose of obtaining access to the Airport shall not divulge, duplicate, or otherwise distribute the same to any other Person, unless otherwise approved in writing by the Airport Manager

Section 3A.20. Self-services.

(a) Persons are permitted to fuel, wash, repair, paint, or otherwise service their own Based Aircraft, provided there is no attempt to perform such services for others and further provided that such right is conditioned upon compliance with these Regulations and all applicable laws.

(b) An Aircraft owner may hire an individual or a Technical Specialist to provide, under his direction and supervision, services only on the owner's Based Aircraft.

(c) Aircraft owners shall notify the Airport Manager at least one (1) hour in advance of any Technical Specialist performing maintenance services on any Aircraft.

Section 3A.21. Major Aircraft Alterations and Repair.

Major Aircraft Alterations and Repairs are prohibited on the Airport except:

(a) By a Person holding a valid Airport Business Permit, if any, for such activity; or

(b) By the owner of the Aircraft in compliance with these regulations.

Section 3A.22. Maintenance of Premises.

All Persons having possession, control or use of any portion(s) of the Airport shall at all times maintain such premises in clean, serviceable, safe and operable condition and repair. No Person shall store or stock materials or equipment in such a manner as to be

unsightly or constitute a hazard to Personnel or property, as determined by the Airport Manager.

All lease holders shall, at all times, and at its own costs and expense, maintain the Leased Premises in good repair and condition, ordinary wear and tear and damage or taking by casualty or condemnation expected; provided, however, this Agreement shall not be deemed (a) to require Lessee to construct any improvement; (b) to require Lessee to repair or rebuild any improvement after any casualty or damage; or (c) to restrict Lessee's right to alter or demolish any of the improvements or to construct any new improvements, subject to Lessor's approval rights as otherwise described in this Agreement. All leaseholders specifically acknowledge its obligations, at its sole expense, to keep in good repair, condition, and appearance the Lessee's Buildings located on the Leased Premises. Lessee shall keep mowed and in a sightly condition all landscaping and grass areas within the Leased Premises. In addition, Lessee shall maintain the Leased Premises in a manner that lessens the amount of equipment and material stored outside or within the public's view. Lessor shall be the sole judge of the quality of Lessee's maintenance; provided, however, Lessor shall not unreasonably withhold, condition or delay acceptance of said repairs or maintenance, and such repairs and maintenance shall be deemed satisfactory if to the standard of similar repairs and maintenance on Lessor's remaining property. Upon written notice by Lessor to Lessee, Lessee shall be required to perform such reasonable maintenance as required under this Section as Lessor considers reasonably necessary. If such maintenance is not undertaken by Lessee within thirty (30) days after receipt of written notice, Lessor shall have the right to enter the Leased Premises and perform the necessary maintenance, the cost of which shall be borne by Lessee. Subject to provisions of this Section, other items of maintenance for which the Lessee shall be solely responsible shall include, but not be limited to, the following:

(a) Janitorial services, providing janitorial supplies, window washing, rubbish and trash removal;

(b) Supply and replacement of light builds in and on all buildings;

(c) Replacement of cracked or broken glass in all buildings;

(d) Cleaning of interior stoppages in interior plumbing fixtures and drain lines up to the first manhole or clean out outside of the exterior of the building where the stoppage occurred;

(e) Replacement of damaged floor covering, excluding wear and tear from normal use;

(f) Maintenance of all doors and door operating systems, including weather stripping and glass replacement;

(g) Painting, repairing, and replacement of damaged interior walls not resulting from structural failure, and excluding wear and tear from normal use;

(h) Landscaping and grass cutting services within the Leased Premises, including but not limited to, repair or replacement of exterior building flood lights and planter lights;

(i) Repair or replacement of heating, air conditioning, ventilation, electrical, plumbing, or mechanical systems, or their respective components.

On the last day of the Lease Term, or on any sooner termination, Lessee shall surrender the Leased Premises to Lessor in a clean condition and free of debris, except for fire and casualty damages or ordinary wear and tear and taking by condemnation.

Section 3A.23. Waste Containers and Disposal.

All Persons using the Airport shall dispose of all waste in appropriate waste containers. All waste disposal shall be in accordance with direction by the Airport Manager and all applicable laws and regulations.

Section 3A.24. Storage, Transfer and Cleanup Charges.

All leaseholders agree to cause to be removed from the Leased Premises, at its own expense, all waste, garbage, and rubbish, and agrees not to deposit same on the Leased Premises except temporarily in waste or garbage containers provided by Lessee at Lessee's expense. All lease holders further agree that Lessee will store all parts, supplies, and other materials on the interior of buildings located on the Leased Premises, provided, however, that any parts or supplies which must be kept outside because of volatility of the supply item or the size of the part shall be kept out of view of the public traveling on public rights of way or other surrounding tenants by installation of fencing or other means of screening approved by the Airport Manger.

The Airport Manager may call upon City or County law enforcement officers or other government officials to remove and impose storage, removal and transfer charges upon any property unlawfully located at the Airport. The Contractor may clean up any material unlawfully spilled, placed or otherwise deposited at the Airport and may assess the cost of the cleanup and any and all related expenses against the responsible Person.

Section 3A.25. Model Aircraft, Kites, Fireworks, etc.

Per FAA criteria, no Person shall fly, release or use a model Aircraft, rocket, kite, fireworks, laser, balloon, parachute, etc., within five (5) miles of the Airport if such activity would create a hazard to Aircraft Operations, or as otherwise determined to be hazardous by the Airport Manager or Airport Traffic Control Tower should one be active.

Section 3A.26. Commercial Photography.

No Person shall take still, motion or sound pictures, including digital images of, or at, the Airport for commercial purposes without first receiving written approval from the Airport Manager, and paying any applicable fees.

Section 3A.27. Advertisements.

No Person shall post, distribute or display signs, advertisements, circulars, printed or written matter at the Airport without permission from the Airport Manager.

Section 3A.28. Animals.

No Person shall enter the Airport with a dog or other animal unless the animal is, and remains restrained by a leash or properly confined as determined by the Airport Manager.

Section 3A.29. Disorderly Conduct, Intoxicating Liquors, etc.

(a) No Person shall:

1. Commit any disorderly, obscene, or unlawful act, or any nuisance on the Airport: or

2. Drink any alcoholic beverage upon any portion of the Airport open to the public except in such facilities as may be lawfully established for alcoholic beverage dispensing, or other place as shall be properly designated for alcoholic beverage dispensing by the Airport Manager for the purpose of a special event.

(b) No unauthorized Person shall enter upon or loiter on or about the Airport.

Section 3A.30. Property Damage, Injurious or Detrimental Activities.

No Person shall destroy, deface, injure or disturb in any way Airport property or conduct at the Airport activities that are injurious, detrimental or damaging to Airport property or to activities and business of the Airport. Any Person causing, or liable for, any damage shall be required to pay on demand the full cost of repairs.

Section 3A.31. Alteration of Airport Property.

No Person shall make alterations to any signs, Buildings, Aircraft Parking and Storage areas, Leased Areas or other Airport property, nor erect any signs, Buildings or other structures without prior written permission of the Airport Manager. Such Persons shall

comply with all building codes and permit procedures of the Airport and shall deliver to the Airport Manager as-built plans upon completion.

Section 3A.32. Lost articles.

Lost articles found in public areas of the Airport shall be turned in to the Airport Manager's Office or to an FBO staff member. Unclaimed articles will be disposed of as Abandoned Property according to law.

Section 3A.33. Abandoned Property.

No Person shall abandon any property on Airport property or in any Building on the Airport.

Section 3A.34. Flying Clubs.

A Flying Club ("Club") shall meet the following standards:

(a) At the time of applying for a lease, license, permit or agreement with or from the Airport Board to operate at the Airport, the Club shall furnish the Airport Manager with a copy of its documents of organization; the Club's list of members, including names of officers and managers; evidence of required insurance; a description of all Aircraft used; evidence that such Aircraft are properly certificated; evidence of Ownership of such Aircraft; and any operating rules of the Club;

(b) All Aircraft used by the Club shall be owned by the Club or leased exclusively by written agreement to the Club, and all Ownership or lease rights to such Aircraft must be vested on a pro-rata basis in all of the Club's members. The property rights of the Club members shall be equal, and no part of any revenues received by the Club shall inure to the direct benefit of any member (e.g., by salary or bonus). The Club shall not derive greater revenue from the use of its Aircraft than the amount necessary for the operation, maintenance and replacement of its Aircraft and facilities;

(c) The Club's Aircraft shall not be used by any Person other than the Club's members and shall not be used by any Person for hire, charter or air taxi. Flight instruction may be given in Club Aircraft; and

(d) The Club shall pay fees as prescribed by Lease, license, permit or agreement, and any applicable fees identified on the Airport rates and fees schedule.

Section 3A.35. Living Quarters.

No Person may make any temporary or permanent living quarters on Airport property.

Section 3A.36. Through-the-Fence Policy.

No Person shall be permitted direct ground access to or from the Airport by his Aircraft or his Vehicle from property adjacent to the Airport.

Article IIIB – Aircraft Rules

Section 3B.1. Landing and Takeoff of Aircraft.

(a) Except in an emergency, all fixed wing Aircraft landings and takeoffs shall be made on a Runway.

(b) Landing Aircraft shall clear the Runway as soon as practical, consistent with safety, taxiing ahead to the nearest turn-off.

(c) No Aircraft may take-off or land on a closed Runway.

Section 3B.2. Aircraft Wingspan Restrictions.

Aircraft with wingspans exceeding the wingspan for designated areas shall not occupy a Hangar, Patio-hangar or Tie-down, or operate in such areas of the Airport .

Section 3B.3. Traffic Patterns and Noise Abatement Procedures.

(a) Left traffic patterns shall be utilized for all landings and take-offs for all Runways.

(b) Runway 12 is the preferred Runway when winds are less than five (5) knots.

(c) Arrivals and departures to and from the Airport shall avoid flight over populated, residential, or noise sensitive areas whenever possible, consistent with safety. Aircraft operators are expected to follow appropriate noise abatement procedures.

(d) Formation takeoffs are prohibited, except with permission of the Airport Manager for special events.

Section 3B.4. Traffic Pattern Altitudes.

Traffic pattern altitudes above ground level (AGL) for Aircraft Operations at the Airport are as follows:

(a) Helicopters, five hundred (500) feet (AGL).

(b) Propeller (piston), one thousand (1,000) feet (AGL).

(c) Turbine-powered, one thousand five hundred (1,500) feet (AGL).

Section 3B.5. Disabled Aircraft.

Aircraft owners and operators shall be responsible for the prompt removal of disabled Aircraft and parts thereof, unless required or directed by the Airport Manager or the FAA or the NTSB to delay such action pending an investigation of an Accident. In the event of failure to promptly remove such disabled Aircraft, the Airport Manager may cause the Aircraft to be removed and bill the owners thereof for all charges incurred in the removal. The City/County shall not be responsible for damage to disabled Aircraft removed by the owner, the operator, or other Persons.

Section 3B.6. Ultra-light Aircraft.

No ultralight Aircraft may land or take off at the Airport without prior written permission of the Airport Manager and having complied with all sections of FAR Part 103.

Section 3B.7. Running of Aircraft Engines.

Aircraft engines shall only be run at idle when on the ground, except as may be necessary for safe taxiing operations, taking off, landing, preflight testing, and maintenance testing. At no time shall Aircraft engines be operated while the Aircraft is in a Hangar or Patio-Hangar. All Aircraft preflight engine run-ups shall be conducted in the appropriate run-up areas.

Section 3B.8. Exhaust and Propeller Blast.

No Aircraft engine shall be started or Aircraft taxied where the exhaust or propeller blast may cause injury to Persons, or do damage to property, or spread debris.

Section 3B.9. Taxiing of Aircraft.

No Person shall taxi an Aircraft without first taking all necessary precautions to prevent a collision with other Aircraft, Persons or objects. Aircraft shall not be taxied into or out of any Hangar, Patio-hangar, or other covered area. No Person shall taxi an Aircraft except on areas designated for taxiing. If it is impossible to taxi Aircraft in compliance with this section, then the engine must be shut off and the Aircraft towed.

Section 3B.10. Common Air Traffic Advisory Frequency.

Aircraft operators shall utilize the common air traffic advisory frequency, 122.7 MHz; to broadcast their intentions as provided in the Aeronautical Information Manual (AIM) Chapter 4.

Section 3B.11. Accident Reports.

Any Persons involved in an Aircraft Accident occurring on the Airport, shall make a full report thereof to the Airport Manager as soon after the Accident as practical, but in no event later than the time required for reporting the accident to the FAA, NTSB, or to any other governmental agency, or within forty-eight (48) hours of the accident, whichever is sooner. The report shall include the names and addresses of the Persons involved, and a description of the Accident and its cause. A copy of an accident report required by any federal or state law, regulation, or agency, shall also be submitted to the Airport Manager.

Section 3B.12. Interfering or Tampering with Aircraft Prohibited.

No Person shall interfere or tamper with any Aircraft, or use any Aircraft, Aircraft parts, instruments or tools without permission of the Owner, or under the specific direction of the Airport Manager in an emergency.

Article IIIC – Vehicles, Pedestrians, Etc.

Section 3C.1. General requirements.

No Person shall operate a Vehicle on the Airport except in accordance with the following rules, and all federal, state and local law:

(a) All Vehicles shall yield right of way to Aircraft in motion and emergency Vehicles;

(b) No Vehicle shall approach closer than one hundred (100) feet to any Aircraft whose engines are running, excluding ground service and emergency Vehicles; and

(c) All Vehicles, upon entering or exiting an Airport access gate, shall wait for the gate to completely close behind them before proceeding to their destination so as to not allow the entry of an unauthorized Vehicle.

(d) No Vehicle shall be operated on the Runways or Taxiways unless so authorized by the Airport Manager.

(e) Any Vehicle authorized to operate on the Airport Runways or Taxiways shall display a rotating or steady beacon that complies with FAA Advisory Circular 150/5210-5B.

(f) All Vehicles that are authorized to operate on Taxiways or the Runways must be equipped with a two-way aviation radio, and must receive a clearance from, and remain in continuous communications with, the Airport Traffic Control Tower (ATCT) should one be active. Regardless whether an ATCT is active, any Vehicle authorized to access the Taxiways or Runways is required to monitor 122.7, the common air traffic frequency for the Airport, and have the ability to communicate with Aircraft via a two-way aviation radio.

Section 3C.2. Licensing, Registration and Insuring of Vehicles.

(a) No Person shall operate a vehicle of any kind on the Airport without proper registration and a valid state operator's license.

(b) All vehicles shall maintain the appropriate type and amount of vehicle liability insurance required by state law.

Section 3C.3. Control of Vehicles.

No Person shall operate or park a Vehicle at the Airport in a manner prohibited by signs, pavement markings or other posted signals, or in violation of these Regulations.

Section 3C.4. Speed Limits.

All Vehicles shall be operated in compliance with any posted speed limits at the Airport. The maximum speed limit for all Vehicles in the Airside area, with the exception of authorized municipal vehicles in the performance their official duties, is fifteen (15) miles per hour, unless posted otherwise.

Section 3C.5. Authority to Remove Vehicles.

The Airport Manager may cause to be removed from any area of the Airport any Vehicle which is disabled, abandoned, parked in violation of these regulations, or which presents an operational problem to any area of the Airport, at the operator's expense and without liability for damage which may result in the course of such movement.

Section 3C.6. Scooters, Bicycles, and Miscellaneous Vehicles.

No Person shall use at the Airport any Vehicle not licensed or otherwise permitted by state law for operation on a public street or highway. This section does not pertain to City/County Vehicles or Vehicles used solely for tugging, marshaling, or refueling Aircraft. On a case-by-case basis, and with the prior written approval of the Airport Manager, other modes of transportation may be used on the Airport.

Section 3C.7. Motor homes, Boats and Recreational Vehicles.

Motor homes, boats, and recreational Vehicles shall not be stored anywhere on the Airport unless in accordance with an approved lease, or with the consent of the Airport Board.

Section 3C.8. Parking Restrictions.

(a) No Person shall park or leave any Vehicle standing, whether occupied or not, except within a designated parking area.

(b) Aircraft owners and operators may park their Vehicle in covered Aircraft Storage and Parking space designated for their Aircraft, provided that the Vehicle is parked in a manner so as to be completely contained in the Aircraft Parking or Storage Space and not obstruct adjacent areas or Taxi Lanes.

(c) All parked vehicles must display a valid Airport Vehicle Permit if parked in a designated restricted parking area.

Section 3C.9. Pedestrians in the Airside Area.

No Person shall walk, stand, or loiter in the Airside area where such activity may be an operational or safety concern.

Section 3C.10. Vehicle Repair.

No Person shall clean or make any repairs to Vehicles anywhere on the Airport, other than in designated shop areas, except those minor repairs necessary to remove such Vehicles from the Airport.

Article IIID -- Fueling, Flammable Fluids, and Safety

Section 3D.1. Fuel Safety.

All transportation, storage and other handling of Aircraft and Vehicle fuel shall comply with: the International Fire Code, 2000 Edition as published by the International Code Council, Inc. and as amended by the City Council for the City of Kerrville; FAA Advisory Circular 150/5230-4, as amended; all requirements of these Regulations; and all other applicable law or regulations.

Section 3D.2. Unauthorized Fuel Possession and Storage.

Except as expressly permitted by these Regulations, no Person shall possess fuel at the Airport.

Section 3D.3. Storage of Aircraft Fuel Trucks, Trailers and other Aircraft Refueling Devices.

(a) Aircraft refueling Vehicles, other moveable Aircraft fuel containers and refueling devices shall be stored outside and not less than one hundred (100) feet from a Building, or such other distance as shall be approved by Airport Manager and City Fire Department.

(b) Aircraft refueling Vehicles shall be parked in a manner, which provides a minimum of ten (10) feet of separation between said Vehicle and any other Vehicle or Aircraft refueling device.

(c) No Aircraft refueling Vehicle, Aircraft fuel container, or other Aircraft refueling device, empty or otherwise, shall be brought into, kept or stored within any Building at the Airport unless the Building is used exclusively for that purpose.

Section 3D.4. Aircraft Fueling Locations.

All Aircraft fueling shall be performed outdoors. Aircraft being fueled shall be positioned so that Aircraft fuel system vents or fuel tank openings are not closer than twenty-five (25) feet from any Building, Patio-Hangar or Hangar unless otherwise approved by the Airport Manager and City Fire Department.

Section 3D.5. Fueling Requirements.

An FBO or self-fueling Operator shall not engage in Fueling Operations at the Airport without having first been issued a Fueling Operations Permit by the Airport Manager.

Section 3D.6. Applications; issuance and renewal:

(a) An application for the issuance or renewal of a Fueling Operations Permit shall be on file with the Airport Manager on an application form provided for that purpose, which must be signed by the applicant;

(b) When an application has been filed with the Airport Manager, he shall make an inspection of such applicant's site, equipment and fuel for the proposed Fueling Operations in order to ensure compliance with all applicable laws, ordinances or regulations;

(c) The Airport Manager shall issue or renew a Fueling Operations Permit within 30 days of receipt of an application unless one or more of the following is found to be true:

1. The applicant has failed to provide required information or has provided false information in his application;

2. The applicant's proposed Fueling Operations will violate an applicable law, ordinance or regulation;

3. The applicant has had Fueling Operations Permit revoked or suspended within the two years preceding the date of the application; or

4. The applicant has failed to meet the minimum requirements of this division; and

(d) A permitee shall display a Fueling Operations Permit issued by the Airport Manager in a conspicuous place on the permittee's premises at all times.

Section 3D.7. Maintenance of Fuel Servicing Vehicles.

Maintenance and servicing of Aircraft fuel servicing vehicles shall be performed outdoors or in a Building approved for that purpose.

Section 3D.8. Open flame.

There shall be no open flames in the Airside area, within fifty (50) feet of any Aircraft, fuel truck, and/or fuel storage area, or where specifically prohibited. The category of open flames and lighted open-flame devices shall include, but shall not be limited to, the following:

(a) Exposed flame heaters, liquid, solid or gaseous devices, including portable and wheeled gasoline or kerosene heaters and gas or charcoal grills;

(b) Heat-producing, welding, or cutting devices and blowtorches; and

(c) Flare pots or other open-flame lights.

Section 3D.9. Removal of Gas, Oil, Grease, etc.

In the event of spillage or dripping of gasoline, oil, grease or any other material which may be unsightly or detrimental to the Airport, the same shall be removed immediately and the affected area shall be restored to its condition prior to the spillage or dripping. The responsibility for such removal and restoration shall be assumed by the Operator or Owner of the equipment causing the same, or by the tenant or concessionaire responsible for the spillage or dripping. In the event of failure by the responsible Person to remove the material and restore the affected area, the Airport Manager may arrange for removal and restoration may charge the responsible Person for all resulting costs.

Section 3D.10. Fire Extinguishers.

(a) All Airport tenants, lessees, licensees and permittees shall supply and maintain such adequate and readily accessible fire extinguishers as may be required by applicable fire codes and regulations. Each fire extinguisher shall carry a suitable tag showing the date of most recent inspection.

(b) At least two (2) fire extinguishers, each having a rating of at least 20-BC, shall be available for use in connection with Aircraft Fuel Handling Operations.

Section 3D.11. Underground Tanks.

There shall be no underground fuel storage tanks at the Airport.

Section 3D.12. Moveable Fuel Storage Tanks.

Unless otherwise approved by the Airport Manager moveable fuel storage tanks are prohibited at the airport except for:

(a) Fuel trucks constructed, operated and maintained in all respects as required by law;

(b) Permanent fuel tanks in an operable Aircraft;

(c) Tanks not exceeding one-gallon capacity/county used solely for sampling and testing fuel, engines and fuel handling apparatus; and

(d) Tanks lawfully transporting fuel for immediate dispensing into a fuel storage tank permitted by these Regulations. Such vehicles shall access the Airport at a point approved by the Airport Manager and remain under escort by a representative of the company receiving the fuel.

Section 3D.13. Self-fueling.

Except as may be prohibited by other provisions of these Regulations and any other applicable law, Owners of Aircraft based at the Airport who desire to self-fuel their Aircraft, shall apply for and receive a self-fueling permit from the Airport Manager. The preceding sentence does not apply to the use of a self-service fuel facility provided by an FBO.

Section 3D.14. Vehicle fuel.

No Person shall possess vehicle fuel on the Airport except:

(a) Within the permanently installed fuel tank of a Vehicle for use only by that Vehicle; or

(b) Within above ground storage tanks with a capacity of not more than two thousand (2,000) gallons, lawfully installed and maintained in accordance with all applicable Federal Environmental Protection Agency (EPA) and Texsas Commission on Environmental Quality (TCEQ) rules and regulations, and all applicable fire codes.

ARTICLE IV. BUSINESS PERMITS AND FEES

Section 4.01. Airport Business Permit Requirements.

No Commercial Activity shall be conducted by any Person at the Airport without first being in possession of a valid Airport Business Permit, should such a permitting process be in place. Issuance of an Airport Business Permit does not entitle the holder to possess, occupy or exclusively use any portion of the Airport or City/County-owned property within the business, grant any Exclusive Right to conduct any business or activity, or authorize any conduct prohibited by zoning laws or any other applicable law.

Section 4.02. Airport Business Permit Applications.

(a) Except as specifically stated otherwise in this Code, an application for an Airport Business Permit shall be approved or denied by the Airport Manager as provided for, together with the appeal process, in the Minimum Operating Standards section of this Code. The Owners shall not be responsible or liable for any loss, injury, or damage as a result of the Airport Board's refusal to overrule the Airport Manager's denial of an Airport Business Permit.

(b) Notwithstanding subsection (a) above, the Airport Manager shall issue an Airport Business Permit to any Person lawfully engaged in a permitted Commercial Activity as of the effective date of commencement of an Airport Business Permitting process, once the Airport Manager receives and approves a completed Airport Business Permit application. A permit issued pursuant to this paragraph shall not be subject to further review by the Airport Board.

Section 4.03. Temporary Airport Business Permits.

The Airport Manager shall have authority to issue temporary Airport Business Permits and to establish procedures relating thereto. Such temporary permits shall cover a single period of not more than thirty (30) consecutive days identified on the permit. No more than one (1) temporary permit shall be issued to any Person in any twelve (12) month period. Each application for a Temporary Airport Business Permit shall be accompanied by a completed standard Airport Business Permit application, and any other applicable documentation as determined by the Airport Manager.

Section 4.04. Permit Display.

Each Person conducting Commercial Activity shall permanently post the Airport Business Permit in a conspicuous place in its business office.

Section 4.05. Monthly Airport Business Permit Fee Amount and Payment.

Monthly Airport Business Permit Fees, as indicated on the Airport Rates and Charges, are hereby imposed upon all Commercial Activity at the Airport. Monthly Airport Business Permit Fees shall be due and payable by the 10th day of the month following the month in which services were provided, and shall include the applicable monthly permit fee, late fees, interest and penalties.

Section 4.06. Phase-in for Certain Existing Leases.

(a) Unless otherwise expressly stated to the contrary in an existing Lease of Airport property, and subject to the provisions of subsection (b), below, existing lessees of Airport property (or authorized sub-lessees and their successors and assigns) are exempt from all monthly Airport Business Permit Fees, except the Airport fuel flowage fee identified in the Airport Rates and Charges schedule.

(b) The exemption established by this section shall terminate and expire automatically upon the termination, expiration, amendment or modification of the respective lease for any reason.

Section 4.07. Duration of Permit.

An Airport Business Permit shall remain in effect so long as the permittee complies with all of its terms, conditions, and covenants.

Section 4.08. Non-waiver of Defaults.

A waiver of any specific breach by the permittee of any term, covenant, or condition of a permit shall not constitue a waiver of any subsequent breach of the same or any other term, covenant, or condition of the permit. No term, covenant, or condition thereof can be waived except by the written consent of the Airport Manager. Forbearance or indulgence by Airport Manager, shall not constitute a waiver of the term, covenant, or condition to be performed by permittee; and until complete performance by permittee of the term, covenant, or condition, the Airport Manager may invoke any remedy available hereunder or by law, despite such forbearance or indulgence.

Section 4.09. General Conditions for all Permits.

Neither the City nor the County are (alone or together) joint venturers with, nor a partner or associate of, the permittee with respect to any manner provided for in the permit. Nothing herein contained shall be construed to create any such relationship between the

parties or to subject the City/County to any obligation of the permittee whatsoever. The permit is a license and not a lease.

Section 4.10. Payment Assurance.

In order to ensure that the Airport is receiving all of the fees to which it is entitled as provided by this Code, upon request all Commercial Operators shall provide sufficient documentation verifying that appropriate fees were paid to the Airport Manager. All Commercial Operators shall allow the Contractor, at reasonable times and places, to audit the Commercial Operator's pertinent records for the current fiscal year and the three (3) preceding fiscal years. No inspection will be made without reasonable notice given to the Commercial Operator.

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ARTICLE V. RULEMAKING

Section 5.01. Airport Rules and Regulations.

The Airport Board is authorized to establish and/or amend such Airport Rules and Regulations and Airport Minimum Operating Standards and Airport Rates and Charges as are necessary or useful to carry out or supplement the provisions of this Code and provide for the orderly and safe operation of the Airport. Notwithstanding any other provision in this Code, after initial approval of this Code by the Owners, provisions of or amendments to this Code shall be subject to review on request by the Owners, but shall be considered to be in effect after approval by the Board until and unless they are disapproved by the Owners.

Section 5.02. Limitation on Airport Rules and Regulations by Airport Manager.

(a) Except in an emergency, no Airport Rule and Regulation or Airport Minimum Operating Standard established by the Airport Board shall be effective until ten (10) calendar days after it is approved.. Any regulation established by the Airport Board shall be posted in the Terminal, if any, and FBO lobby or other area of the FBO open to the public during normal business hours for a period of not less than 72 hours prior to review by the Airport Board.

(b) All leaseholders shall be notified by mail of any revisions and/or new Airport Rules and Regulations.

(c) Creation or modification of any Airport Rates and Charges shall not be effective until approved by the Airport Board.

Section 5.03. Emergency Rules and Regulations.

Notwithstanding Section 5.02(c), the Airport Manager has authority to impose emergency regulations for the period of time that the emergency exists. Notice of such Emergency Rule or Regulation shall be posted at the Terminal, if any, and FBO. Each emergency rule or regulation shall be reviewed and acted on as a proposed permanent rule or regulation at the next Airport Board meeting.

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ARTICLE VI. ENFORCEMENT

Section 6.01. Violations.

It shall be unlawful for any Person to cause, facilitate, aid or abet any violation of any provision of this Code, or to fail to perform any act or duty required thereby.

Section 6.02. Joint and Several Liability

When two or more Persons have liability to the City/County or are responsible for a violation, their responsibility shall be joint and several.

Section 6.03. Enforcement of judgments.

Any judgment for abatement, restitution or civil sanctions taken pursuant to this article may be enforced as any other civil judgment.

Section 6.0.04. Violations not Exclusive.

Violations of this Code are in addition to any other violation of law and in no way limit the penalties, actions or abatement procedures that may be taken by the City and/or County under other applicable law.

Section 6.05. Each day separate Violation.

Each day any violation of any provision of this Code or the failure to perform any act or duty required by this Code continues shall constitute a separate offense.

Section 6.06. Penalty.

The Airport Board specifically finds that all rules and regulations adopted herein are adopted to promote the health and safety of Airport users and the public, and to promote safe, orderly, and appropriate development of the Airport property. Therefore, Whenever in this Code an act is prohibited or is made or declared to be unlawful or a misdemeanor, or whenever in such Code the doing of any action is required or the failure to do any act is unlawful and no specific penalty is provided therefore, the violation of such provision shall be punished by a maximum fine of $2,000.00.

Section 6.07. Inspections.

(a) The Airport Manager is hereby authorized and directed to make inspections in the normal course of job duties; or in response to a complaint that an alleged violation of the provisions of this Code may exist; or when there is a reason to believe that a violation of this Chapter has been or is being committed.

(b) The Airport Manager may enter onto any property, or into any Building or premises, at all reasonable times to inspect or to perform the duties imposed upon the Airport Manager by this Code, provided that if such property, Building or premises is occupied, the Airport Manager shall present credentials to the occupant and request entry. If such property, building or premises is unoccupied, the Airport Manager shall first make a reasonable effort to locate the owner or other Person having charge or control of the property, Building or premises and request entry. If entry is refused, the Airport Manager has recourse to every remedy provided by law to secure entry.

(c) It shall be a violation of this Code for any Person to interfere with, prevent, or attempt to interfere with or prevent the Contractor, the Owners, the Airport Board, or the Airport Manager from investigating any alleged violation of this Code, or from correcting or abating a violation of this Code.

Section 6.08. False information.

It shall be a violation of this Code to intentionally or knowingly make a false or fraudulent statement, or knowingly misrepresent a fact, or mislead any authorized individual who is investigating, correcting or abating a violation of this Code.

Section 6.09. Service of Notices.

(a) Any notice required to be given by the Airport for any purposes under this Code shall be by having the Airport Manager hand-deliver the notice, mail the notice by certified mail, return receipt requested, or by any other reasonable means that will insure that the intended recipient receives actual notice.

(b) Notice is deemed effective on the date it is hand-delivered or deposited in the United States mail.

(c) Nothing herein shall preclude the Airport Manager from giving oral or written notice in addition to that required herein. If the Airport Manager does elect to give any additional notice in any instance, the Airport Manager shall not thereby become obligated to give such additional notice thereafter in the same or other situation.

Section 6.10. Grounds for Denial of Use.

(a) The Airport Board may deny access to, and the use and privileges of, the Airport or any of its facilities to any Person:

1. Who violates this Code or any Airport Rules and Regulations or Airport Minimum Operating Standards promulgated hereunder;

2. Whose action would place the Airport in violation of federal laws or regulations regarding disadvantaged business enterprises; or

3. Who violates any other conditions duly adopted by the Airport Board or any applicable federal statute or regulations hereafter enacted.

(b) The Person to whom the Aircraft is registered is responsible for the acts of all Persons (including, but not limited to, all agents, employees and pilots) to whom control, operation or any authority to use said Aircraft is granted. The involvement of said Aircraft in any act or omission that violates any of the above-enumerated laws, statutes, Airport Rules and Regulations, Airport Minimum Operating Standards or other conditions may result in the above-enumerated actions.

Section 6.11. Notice to Abate.

(a) If, after an inspection, the Airport Manager finds one (1) or more violations of this Code, and the Airport Manager elects to use the abatement process, the Airport Manager shall, in writing, notify the Person making the violation.

(b) The notice to abate shall set forth the following information:

1. The Person has fifteen (15) calendar days from the mailing of the notice to abate to correct the violation.

2. A statement of the violation in sufficient detail to allow a reasonable Person to identify and correct the violation(s).

3. Re-inspection date and time.

4. A warning stating that if the violations are not corrected within the fifteen (15) calendar day period, the Airport Manager can abate the problem and assess the Person the cost of such abatement.

5. Appeal procedures.

6. The fifteen (15)-calendar day notice set forth in this section shall not apply to emergency abatements pursuant to Section 6.19.

(c) If any Person receiving a notice to abate fails to comply with such notice or order, the Airport Manager may take actions necessary to correct or abate the conditions.

(d) The Airport Manager shall prepare and deliver a verified statement as to the actual cost of correcting or abating the violation to the Person ordered to abate the condition. Such actual cost may include the cost of necessary inspections and other incidental costs associated with such inspections, not to exceed an additional five (5) percent of the actual costs of the abatement. The statement shall be hand-delivered or mailed, certified mail, return-receipt requested, to the Person the notice to abate or order was served upon. That statement shall further notify the recipient that he has fifteen (15) calendar days from the date of delivery or mailing of the statement to pay in full, and the statement shall further set out the requirements necessary for appeal.

Section 6.12. Procedure for Denial of Use or Access.

(a) Upon probable cause to believe that a Person has committed acts constituting grounds for denial of access, the Airport Board shall either follow the procedures for abatement set out elsewhere herein, or shall provide the affected party with notice of an order to show cause why access should not be denied. The notice shall give at least seventy-two (72) hours notice of the hearing date and list the grounds for the possible denial of access.

(b) Persons who have been denied use of or access to the Airport and its facilities shall be provided a hearing before the Airport Board as soon as reasonably practical but in no event shall said hearing be delayed more than ninety-six (96) hours after the effective time of the denial of access, except upon mutual agreement between the Airport Board and the affected party.

(c) All meetings of the Airport Board convened for the purpose of considering an appeal of a denial of Airport access shall be posted with an appropriate agenda under the same rules and conditions as regular and special meetings of the Airport Board for routine business.

(d) Notwithstanding the provisions of Section 6.10 or the preceding provisions of this section, the Airport Manager may summarily deny Airport access, to any Person as to whom probable cause exists to believe that he has committed an act or omission relating to dangerous refueling, dangerous Aircraft or Vehicle

operation, lack of insurance, theft of or damage to property, assault and battery or such other act or omission that constitute a danger to the health, safety, or welfare of any individual or the public in general. A person who has been summarily denied Airport access shall have the right to a hearing before the Airport Board upon request, under the timelines set out herein.

(e) This Section contains all the appellate relief to which an aggrieved party is entitled through this Code. Utilization of these remedies shall not preclude an aggrieved party from seeking any other remedies provided by law.

Section 6.13. Option to Proceed Civilly or Criminally.

No remedy provided for herein is exclusive, unless specifically identified as such, and enforcement may proceed both by criminal and civil process unless otherwise prohibited.

Section 6.14. Restitution.

In addition to any civil sanction or criminal penalty provided for in this article, any Person violating this Code shall be liable for all costs which may be associated with the correction or abatement of any violation of this chapter. The court shall require restitution in addition to any civil sanction or criminal penalty.

Section 6.15. Order Suspending Airport Access.

In addition to any other sanction or penalty provided for in this article, for good cause shown, a court may issue an order suspending the right of any Person violating this Code to use the Airport or any of its facilities for a period not to exceed three (3) years.

Section 6.16. License Revocation: Grounds.

The Airport Board may revoke any license or permit over which the Board has jurisdiction for the following reasons:

(a) violation of the terms of such license or permit, of any provision of this Code, or any Airport Rules and Regulations or Airport Minimum Operating Standards promulgated pursuant to this Code.

(b) falsification of any application or other information provided to the Airport Manager pursuant to this Code.

(c) any action which would place the Airport in violation of federal laws or regulations regarding disadvantaged business enterprises.

(d) violation of any other Airport Rules and Regulations, Airport Minimum Operating Standards or other requirements duly adopted by the Airport Board, or any applicable federal statute or regulation hereafter enacted.

Section 6.17. License Revocation: Procedure.

Upon probable cause to believe that the licensee or permittee has committed acts constituting grounds for revocation as provided in this Code, the Airport Manager shall provide the affected party with notice of an order to show cause why the license or permit should not be revoked.

Section 6.18. Abatement in Lieu of or in Addition to Other Actions.

In addition to or in lieu of denial of access or filing a civil or criminal action, the Airport Manager may file notice to abate any violation of this Code. Such abatement action shall proceed independently of any denial of access or civil or criminal violation filed pursuant to this Code.

Section 6.19. Emergency Abatement.

If a situation presents an imminent danger or threat to the health, safety or welfare of any Person or the public in general, the Airport Manager may issue a notice to abate directing the responsible Person to take such action as is appropriate to correct or abate the emergency. In addition, the Airport Manager may act immediately to correct or abate the emergency. In the event the Airport Manager is unable to contact the responsible Person, such inability in no way affects the Airport Manager's right to correct or abate the emergency. The responsible Person shall be granted a review before the Airport Board on the matter upon that Person's request, as soon as practicable, but such appeal shall in no case stay the abatement or correction of such emergency.

Section 6.20. Abatement Variances and Time Extensions.

(a) Any Person may request a variance or time extension of a notice to abate or assessment. Such request shall be made to the Airport Board.

(b) The same time limit for filing, requirement for written notice, and hearing procedures as provided for other appeals herein apply to this section.

(c) If a variance or time extension is granted by the Airport Board, the condition allowing the variance or time extension and the extent of the variance or time extension shall be explicitly stated.

(d) The Airport Board may grant one (1) extension of the time limit. Such extension shall not exceed one hundred eighty (180) calendar days. The

extension period granted by the Airport Board begins on the day the Airport Board issues its written decision. The Airport Board may grant such an extension only where it is shown that:

1. It would create a hardship to comply with the abatement order, and;

2. The requesting party presents a plan that is approved by the Airport Board, by which said party will comply with the abatement order within one-hundred eighty (180) calendar days.

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ARTICLE VII. DEFINITIONS

The following words and phrases, whenever used in the Airport Code, shall be construed as defined in this Article unless from the context a different meaning is intended, or unless a different meaning is specifically defined and more particularly ascribed to the use of such words or phrases. All definitions contained in 49 U.S.C. § 40101 et seq. (previously known as the Federal Aviation Act of 1958, hereinafter cited as "FAA Act") and all amendments thereto shall be considered as included herein; and all definitions shall be interpreted on the basis and intention of the FAA Act and amendments thereto unless from the context a different meaning is intended, or unless a different meaning is specifically defined and more particularly ascribed to the use of such words or phrases. All words and phrases shall be considered to be either singular or plural as required by the context in which they are used.

Words and phrases incorporated in these definitions are capitalized whenever they are used as defined in the Airport Code,

Abandoned Property
Means property not covered by any storage, parking, or tie-down arrangement that is left on Airport property without consent of the Airport Manager for forty-eight (48) hours without the owner claiming it.

Accident
Means a collision or other contact between any part of an Aircraft or a vehicle, Person, stationary object or other thing which results in property damage, Personal injury, or death; or an entry into or emerging from a moving Aircraft or vehicle by a Person which results in Personal injury or death to such Person, or some other Person, or which results in property damage.

Aeronautical Activity
Means any activity or service conducted on Airport Property, which involves, makes possible, or is required for the operation of Aircraft, or contributes to, or is required for, the safety of such operations.
Aeronautical Activities include, but are not limited to:

- General and corporate aviation
- Air taxi and charter operation
- Aerial photography
- Pilot training
- Aircraft rental
- Sightseeing
- Aerial surveying
- Crop dusting

- Air carrier operations (both airline passenger and air cargo)
- Aircraft sales and service
- Aviation fuel and oil sales (whether or not conducted in conjunction with other included activities)
- Repair and maintenance of aircraft
- Sale of aircraft parts
- Aviation fire suppression
- Aviation advertising
- Aircraft management
- Any other activities that, because of their direct relationship to the operation of aircraft can appropriately be regarded as an aeronautical activity.

The following are not aeronautical activities:

- Ground transportation (taxis, car rentals, limousines)
- Restaurants
- In-flight food catering
- Barber shops
- Auto parking lots

Air Traffic
Means Aircraft in operation anywhere in the air or, when under their own power, on the ground.

Aircraft
Means any device intended to fly in the air.

Aircraft Charter Services Operator
Means a Person engaged in the business of providing air transportation of Persons or property to the general public for hire, either on a charter basis, or as defined by the FAA under Part 135. Aircraft charter services may include the performance of Aircraft Management Services, as long as all requirements of such services are met.

Aircraft Fuel
Means all flammable substances expressly manufactured and blended for the purpose of operating an Aircraft engine.

Aircraft Leasing or Rental Services Operator
Means a Person engaged in the leasing or rental of Aircraft to the public.

Aircraft Management Services Operator
Means a Person performing one or more of the following services in the management of another Person's Aircraft: pilot staffing, records management, and other Aircraft-related services, except those services detailed in the Airport Minimum Operating Standards.

Aircraft management also encompasses the exercise of the privilege of FAR Part 91 on behalf of the Owner. Aircraft Management does not include the control of or operation of Aircraft under FAR Part 135.

Aircraft Operation
Means an Aircraft arrival at, relocation under its own power within, or departure from the Airport.

Aircraft Maintenance and Repair Services Operator
Means a Person providing one or more of the following services: airframe, engine or accessory overhaul; repair services on Aircraft; and sales of Aircraft parts and accessories.

Aircraft Maintenance Permit
Means, should such a permitting process be initiated at the Airport, administrative approval issued by the Airport Manager to a Person to perform Major Aircraft Alterations and Repair on an Aircraft located in a Parking or Storage Area. A form for requesting such approval is appended to the Airport Rules and Regulations.

Aircraft Parking and Storage Areas
Means those Hangar and Apron locations of the Airport designated by the Airport Manager for the parking and storage of Aircraft, and such areas of the Airport designated for Aircraft maintenance, engine run-up, and self-fueling. Aircraft Parking and Storage areas may be designated by the Airport Manager as either long-term or Transient.

Aircraft Sales Services Operator
Means a Person engaged in the sale or brokerage of new and/or used Aircraft.

Aircraft Storage Agreement
Means, should such a permitting process be initiated at the Airport, administrative approval issued by the Airport Manager to a Person to park or store an Aircraft at the Airport. A form for requesting such approval is appended to the Airport Rules and Regulations.

Airport
Means all of the City/County-owned or leased real or Personal property comprising Kerrville/Kerr County Airport, also known as Kerrville Muni/Louis Schreiner Field, as now exists or as may hereafter be expanded and developed.

Airport Businesses Permit
Means, administrative approval issued, where applicable, by the Airport Manager to a Person to conduct Commercial activity only in facilities at the Airport wherein such services are authorized. A form for requesting such approval is appended to this Code.

Airport Board
Means the seven-member Joint Airport Board as constituted under the Interlocal Agreement For Joint Management of Kerrville/Kerr County Airport executed by Kerr County and the City of Kerrville on August 10, 2004.

Airport Code
Means Joint Airport Board Resolution No. 024-2005 - adopted by the Kerrville/Kerr County Joint Airport Board on 03/01/05, and further approved by Joint Resolution by the Kerrville City Council on 03/22/05, and the Kerr County Commissioners Court on 03/28/05.

Airport Manager
Means manager of the Airport, or the manager's designee. The Airport Manager shall be an employee of the Contractor.

Airport Rates and Charges
Means a schedule of fees approved by the Airport Board payable by users and Operators at the Airport.

Airport Tenant
Means a Person who leases or uses property at the Airport solely for the purpose of storing Based Aircraft, and who is not engaged in any Commercial Activity.

Airport Traffic Control Tower (ATCT)
Means a control tower should one be located at the Airport.

Airside
Means the area of the Airport that is either contained within the Airport perimeter fence, or which requires access through a building located on or adjacent to Airport property, or which requires access through a controlled Airport access point.

Air Traffic Pattern
Means the traffic flow that is prescribed for Aircraft landing at, taxiing on, or taking off from the Airport.

AOA
Means Airport Operations Area, which is that area within the fenced area of the Airport in which movement of Aircraft is permitted.

Apron
Means the paved area in front of the Hangars and the FBO.

Aviation-Related Activities
Means any activity conducted on Airport Property that provides service or support to aircraft passengers or air cargo. Aviation-related activities include but are not limited to:

- Ground transportation
- Restaurants
- Auto parking lots
- Concessions
- Any other related service or support activities that can appropriately be called aviation related.

Aviation Use of Real Property (Aeronautical Property)
Means all property comprising the land, airspace, improvements and facilities used or intended to be used for the operational purpose related to, in support of, or complementary to the flight of aircraft to or from the landing area. It is not confined only to land areas or improvements eligible for development with Federal AIP grants or TxDOT Aviation Transportation grants or to property acquired from Federal sources. In addition to the areas occupied by the runways, taxiways, and parking aprons, Aeronautical Property includes any other areas used or intended to be used for supporting services and facilities related to the operation of aircraft. It also includes property normally required by those activities, which are complementary to flight activity or Aviation-Related such as conveniences concessions serving the public including, but not limited to shelter, ground transportation, food and personal services.

Based Aircraft
Means an Aircraft which the Owner physically locates and domiciles at the Airport intending that it remain for an undetermined period, and which, whenever it is absent from the Airport, the Owner intends to return it to the Airport.

Based Location
Means the location on the Airport which is listed as an Aircraft's Hangar, Patio-Hangar or Tie Down location as registered with the Airport Manager.

Building
Means the main portion of a structure, all projections or extensions there from, any changes or additions thereto, and shall include garages, outside platforms, docks, carports, canopies, eaves and porches.

Charter Brokerage Services Operator
Means a Person brokering another Person's Aircraft for use in charter operation or filling seats in an Aircraft for purposes of charter operation. Charter Brokerage Service does not include the control or operation of Aircraft under FAR Part 135.

City
Means the City of Kerrville, Texas.

City/County
Means the City of Kerrville, Texas and/or the County of Kerr, Texas.

Commercial Aeronautical Activity and/or Commercial Activity
Means an entity that leases land, structural property or space within a building that provides commercial aeronautical products and services to the public on Airport Property. Commercial Aeronautical Activity is typically conducted on properties depicted on the Airport Layout Plan (ALP) and Airport Master Plan in designated Airport areas for such aeronautical and aviation-related commercial activities. Areas so designed on the ALP/Master Plan or "Aviation and non-aviation industrial development" can, at the discretion of the Airport Board, be leased to any commercial activity so long as it conforms to compatible land use.

Commercial Operator
Means a Person engaged in Commercial Aeronautical Activity and/or Commercial Activity, which maintains a facility at the Airport for the purposes of conducting aeronautical, or aviation-related Business or services. An activity is considered Commercial Activity regardless of whether the business is non-profit, charitable, or tax exempt.

Compatible Land Use
Means the use of land (e.g., commercial, industrial, agricultural) that is normally compatible with aircraft and airport operations.

Contractor
Means the Person who has contracted with the Airport Board to provide specified services to the Airport.

County
Means the County of Kerr, Texas.

Driver/Vehicle Permit
Means, should a permitting process be initiated at the Airport, administrative approval issued by the Airport Manager to a Person to access, drive upon and park a vehicle at the Airport. A form for requesting such approval is appended to the Airport Rules and Regulations.

Entity
Means: an individual; a corporation, firm, partnership, association, organization, and any other group or Person acting as a unit; the state, county, and/or political subdivision of the state, or other governmental entity. Entity also includes a trustee, receiver, assignee or similar representative.

Exclusive Right/Exclusive Business Operations
Means a power, privilege, or other right excluding or debarring another from enjoying or exercising a like power, privilege or right. Exclusive rights are not permitted on this Airport due to FAA Grant Assurances.

FAA
Means the Federal Aviation Administration.

FAR
Means Federal Aviation Regulations.

FBO
Means Fixed Base Operator, an entity which maintains facilities at the Airport for the purpose of engaging in any of the following:
sale of aviation fuels and lubricants,
sale of Aircraft and/or Aircraft parts and accessories
Aircraft maintenance and repair
Aircraft Storage
provision of amenities and services to aviation users.

Flight Training Services Operator
Means a Person engaged in instructing pilots in dual and solo flight training, in fixed-wing and/or rotary-wing Aircraft, and providing such related ground school instruction as is necessary to complete training for the categories of pilot's licenses and ratings involved.

Flying Club
A Flying Club is a non-profit entity or organization organized solely for the purpose of providing its members with one or more Aircraft for their Personal use and enjoyment.

Fuel Handling
Means the transportation, delivery, and draining of fuel or fuel waste products, and the fueling of Aircraft.

Fuel Storage Area
Means any portion of the Airport designated temporarily or permanently by the Airport Manager as an area in which fuel may be stored or loaded.

Fueling Operations
Means fueling and other activity connected with the process of fueling Aircraft and ancillary equipment at the Airport.

Fueling Operations Permit
Means, should such a permitting process be initiated at the Airport, administrative approval issued by the Airport Manager to a Person to conduct Fueling Operations at the Airport in facilities or in areas where Fueling Operations are authorized.

Gate Position
Means a specific Aircraft Parking area that has been designated by the Airport Manager for purposes of enplanement and deplanement of passengers or cargo.

General Aviation
Means all phases of aviation other than Aircraft manufacturing, military aviation, and scheduled or non-scheduled commercial operations.

Governing Bodies
Means the City of Kerrville and the County of Kerr, the Owners of the Kerrville/Kerr County Airport and parties to the Interlocal agreement governing the operation of the Airport.

Hangar
Means a fully enclosed structure intended to house Aircraft, either for purposes of storage, or while undergoing maintenance and repair. (See Patio Hangar)

Hangar Leasing Services Operator
Means a Person engaged in the business of leasing, renting or licensing Hangar/Patio Hangar space to Aircraft Owners or Operators solely for Aircraft Storage purposes.

Hazardous Material
Means any hazardous or toxic substance, waste or material which is toxic, explosive, corrosive, flammable, infectious, radioactive, carcinogenic, mutagenic, teratogenic, or otherwise hazardous, and is or becomes regulated by any governmental authority, agency, department, board, board, agency or instrumentality of the United States, the State of Texas or any political subdivision thereof.

Improvements
Means all Buildings, structures and facilities, including pavement, fencing, signs and landscaping, constructed, installed or placed on, under or above any Leased area by or with the concurrence of a lessee.

Incompatible Land Uses
Incompatible land uses around General Aviation airports jeopardize the safety and efficiency of flying activities. Incompatible land uses include residential development, schools, community centers and libraries, hospitals, and buildings used for religious services and tall structures, smoke and electrical signal generators, landfills and other bird/wildlife attractants.

Landside
Means the general public common use areas of the Airport such as public Roadways, parking lots and buildings, which are not contained in the Airside area.

Lease
Means a written agreement between the Airport Board and a Person granting permission to use Airport land and/or Buildings, and/or authorizing the conduct of specified activities.

Local Aircraft Operations
Means Aircraft operating in the local Air Traffic Pattern or within sight of the Fixed Base Operator (FBO) or, should one be operating, in communication with an/or in sight of an Air Traffic Control Tower located at the Airport. Includes Aircraft making simulated instrument approaches or low passes at the Airport.

Major Aircraft Alterations and Repair
Means alterations and repairs as listed in FAR Part 43, Appendix A, Sections (a) and (b), as amended.

Mobile Aircraft Washing Services Operator
Means a Person engaged in the cleaning, detailing or washing of Aircraft either for the general public or for individual businesses, either at the Aircraft Based Location or within a designated Aircraft washing area on the Airport.

Mobile Aircraft Maintenance and Repair Services Operator
Means a Person providing one or more of the following services at the Aircraft Based Location or within a designated Aircraft maintenance areas on the Airport: airframe, engine or accessory overhaul; repair services on Aircraft; and sales of Aircraft parts and accessories.

Movement Area
Means the runway, taxiways and other areas of the Airport which require either a radio announcement prior to entering, or, should one be operating, permission from an Air Traffic Control Tower.

NTSB
Means the National Transportation Safety Board.

Operator of an Aircraft
Means a Person in charge or command of an Aircraft. The Operator may, or may not be the Owner of the Aircraft.

Owner of an Aircraft
Means a Person who holds legal title to an Aircraft, or any Person having exclusive right of possession of an Aircraft pursuant to a written lease for a minimum term of twelve (12) months.

Owners
Means City of Kerrville and County of Kerr, as joint owners of an undivided interest in the Kerrville/Kerr County Airport.

Park or Parking
Means the standing of an Aircraft or Vehicle, whether occupied or not.

Patio-Hangar
Means a roofed structure that is otherwise not fully enclosed which is intended to house Aircraft.

Permission or Permit
Means permission granted by the Airport Manager.

Person
Means: an individual; a corporation, firm, partnership, association, organization, agency, and any other group or entity acting as a unit; the state, county, and/or political subdivision of the state, or other governmental entity. Person also includes a trustee, receiver, assignee or similar representative.

Preventive Aircraft Maintenance
Means maintenance as listed in FAR Part 43, Appendix A, Section [c].

Public Area
Means those areas normally used by the general public, including structures and devices such as Roadways, sidewalks and terminal facilities that are maintained and kept at the Airport for use by the general public.

Ramp
Means a paved area suitable for Aircraft parking.

Repair Facility
Means a facility utilized for the repair of Aircraft to include airframe, power plant, propellers, radios, instruments and accessories. Such facility will be operated in accordance with pertinent local, state and FAA regulations.

Roadway
Means any street or road whether improved or unimproved, within the boundaries of the Airport and set aside or designated for use by Vehicles, whether dedicated or not.

Runway
Segments of land at the Airport prepared and marked for use by Aircraft in taking-off and landing.

Smoking
Means burning or carrying any lighted cigarette, tobacco or any other weed or plant, or placing any burning tobacco, weed or plant in an ashtray or other receptacle and allowing smoke to diffuse into the air.

Specialized Aircraft Repair Services Operator
Means a Person engaged in the business of repairing or replacing Aircraft radios, avionics, instruments, propellers, accessories, upholstery, paint and/or other similar Aircraft components. A Specialized Aircraft Repair Services operator sells new or used parts and components necessary for such repairs.

Specialized Commercial Flying Services Operator
Means a Person engaged in air transportation for hire for any of the following purposes: nonstop sightseeing flights that begin and end at the Airport, aerial photography or survey, power-line or pipeline patrol, fire-fighting or fire patrol, airborne mineral exploration, or any other operations specifically excluded from FAR Part 135, as amended.

Sublease
Means a Lease granted by a lessee, with permission from the Airport Board, to another entity for all or part of the leased property.

Taxi-lane
Means the portion of the Airport Apron area, or any other area, used for access between Taxiways and Aircraft Parking and Storage areas.

Taxiway
Means a defined path established for the taxiing of Aircraft from one part of the Airport to another.

Technical Specialist
Means a technical representative of an Aircraft manufacturer, Aircraft engine manufacturer, Aircraft appliance manufacturer, or a non-destructive inspection specialist.

Terminal
Means an Airport Building with both Airside and Landside access for Aircraft Operators and passengers. The Terminal, when completed, will provide restrooms, lounge areas, conference areas and rental office space, and will be the location of the Airport Manager's Office.

Tie-Down
Means an area within an open-air Aircraft Parking or Storage Area where Aircraft may be secured to the ground, either by use of fixed tie-down points, or by use of moveable anchors.

Transient Aircraft
Means an Aircraft that is not a Based Aircraft at the Airport.

Vehicle
Means a device, except Aircraft, in, upon, or by which any Person or property is or may be propelled or moved.

Vehicle Parking Area
Means any portion of the Airport designated and made available temporarily or permanently for the parking of vehicles.

ARTICLE VIII. FORMS

The following pages contain forms that have been approved for use by the Airport Board.

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KERRVILLE/KERR COUNTY AIRPORT AERONAUTICAL BUSINESS PERMIT

(Required to conduct commercial aeronautical activity on the Airport)

Business or activity to be conducted (Check all that apply):

☐ Aircraft Charter Services
☐ Aircraft Leasing or Rental Services
☐ Aircraft maintenance and Repair Services
☐ Aircraft Management
☐ Aircraft Sales Services
☐ Aircraft Mobile Maint. & Repair Services
☐ Specialized Aircraft Repair Services (list service)

_____

☐ Specialized Commercial Flying Services (list services)

_____

☐ Other

_____

☐ Aircraft Washing Service
☐ Hangar/Patio Hangar Leasing Services
☐ Flight Training Services
☐ Fixed Base Operator
☐ On-Airport Rental Car Concession
☐ Off-Airport Rental Car Concession

These activities are limited to the Airport by ordinance. Please refer to the Airport Minimum Operating Standards for further information on each type of business.

Applicant

_____

Authorized Representative: _____ Title: _____

Business Address: _____City, State, Zip: _____

Billing Address: _____ City, State, Zip: _____

Phone: (work): _____ (fax:) _____ (emergency): _____

The Applicant hereby requests the above action(s) from the Airport Board for the privilege of conducting commercial Aeronautical Activities on the Airport.

The undersigned representative certifies he/she is authorized to sign for the business and acknowledges receipt of a copy of this permit.

_____

Authorized Representative's Signature Date Signed

Approved by

_____

Airport Manager Date Signed

KERRVILLE/KERR COUNTY AIRPORT
AIRCRAFT MAINTENANCE PERMIT

(Required for conductingMmajor Alterations and Repairs at theBbased Aircraft Hangar location)

Aircraft Owner's Name:_____Contact Phone Number:_____

Maintenance Mechanic's Name:_____Contact Phone Number:_____

Aircraft Storage Location/Hangar Address:_____

Aircraft Make/Model:_____FAA Registration No:_____

Duration of Work-Start Date:_____End-Date:_____

The Applicant requests approval to conduct maintenance of based Aircraft on the Airport and agrees to the following:

PERMIT'S LIMITATIONS:

- This permit may not be assigned or transferred.
- This permit may be extended past the duration stated above by contacting the Airport Manager with the new ending date prior to the original end date, not to exceed thirty (30) days.

STIPULATIONS: The Applicant must abide by the following stipulations in order to conduct maintenance:

- No smoking shall be permitted with fifty (50) feet of an Aircraft, fuel truck and/or fuel storage area.
- Aircraft must have battery cables disconnected.
- Aircraft must have gas caps taped for vapor seal protection.
- A copy of the permit is required to be on site at all times.
- A fire extinguisher with a U/L classification of at least 2A/40BC must be on site while conducting maintenance.

APPROVAL: All applicable signatures must be provided prior to conducting maintenance at that location.

INDEMNIFICATION: *See on reverse side*

COMPLIANCE WITH THE LAW: The applicant shall comply with all applicable laws, ordinances, rules and regulations.

The undersigned Aircraft owner and agrees to abide by all of the provisions of this permit.

_____

Aircraft owner's signature/Date Applicant's signature/Date

_____

Airport Manager's Signature/Date

****

INDEMNIFICATION: To the fullest extent permitted by law, Aircraft owner and applicant, jointly and severally, shall pay, defend, indemnify and hold harmless Owners, their agents, representatives, officers, directors, managers, officials and employees from and against all allegations, demands, proceedings, suits, actions, claims, damages, losses, expenses, including but not limited to, attorney fees, court costs, and the cost of appellate proceedings, and all claim adjusting and handling expense, related to, arising from, or out of, or resulting from any actions, acts, errors, mistakes or omissions caused in whole or part by Aircraft owner and or applicant relating to work or services addressed by Aircraft Maintenance Permit, including but not limited to, any subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable and any injury or damages claimed by any employees of Aircraft owner, applicant and any subcontractor.

KERRVILLE/KERR COUNTY
AIRPORT DRIVER/VEHICLE
PERMIT

(*Required to access, drive upon, and park a vehicle on Kerrville Airport)*

Application for:

☐ Driver/Vehicle permit

☐ Aircraft service/government vehicle permit

☐ Change of information

Applicant:_____

Authorized Representative:_____Title:_____

Phone: (work/home):_____ (fax):_____ (emergency):_____

Business/Local Address: _____

City, State, Zip: _____

Drivers license number & state: _____FAA Registration No:_____

Qualifying Use: ☐ Tenant _____ ☐ Aeronautical Permittee ☐ Tenant Employee

The Applicant hereby requests the above action(s) from the Owners for the privilege of accessing, driving upon, and parking a vehicle(s) on Kerrville Airport, and in consideration of this request being granted, agrees to the following:

PERMIT LIMITATIONS: This Permit may not be assigned or transferred, and only the applicant and vehicle(s) described above may access, or park such vehicle(s) on, Kerrville Airport.

INFORMATION CHANGES: The Applicant shall notify the Airport Manager's Office in writing within fifteen (15) days of any change to the information provided on this form.

RELEASE OF LIABILITY: Neither the Owners nor the Airport Board assume any liability for damage or loss to personal property while operating at Kerrville Airport. All vehicles and other personal property are stored and operated solely at the risk of the undersigned.

AIRPORT CODE: The applicant shall comply with all applicable provisions of the Airport Code.

COMPLIANCE WITH THE LAW: The Applicant shall comply with all applicable laws, ordinances, rules and regulations.

The undersigned representative certifies he/she is authorized to sign for the business and acknowledges receipt of a copy of this permit.

_____

Authorized Representative's Signature Date signed

Applicant to complete with vehicle information

Vehicle	Make	Year & Model	Color	License	State	Permit number
1						
2						
3						
4						
5						

********** **Airport Manager's Use Only** **********

Indicate documents provided to applicant

.

☐ **AIRPORT CODE**

□Article I
□ Article II
□ Article III
□ Article IV
□ Article V
□ Article VI
□ Article VII
□ Article VII

☐ Check #_____

☐ Airfield Driving Packet, if applicable

☐ Receipt for Fees/Deposit

****

AIRPORT MANAGERS'S COMMENTS

_____

_____

_____

Approved by

_____

Airport Manager Dated signed

KERRVILLE/KERR COUNTY AIRPORT
AIRCRAFT STORAGE AGREEMENT

(Required for storage of Aircraft in Airport-owned Hangars)

Application for: ☐ New ☐ Change of information

Applicant:_____

Authorized Representative:_____ Title:_____

Phone: (work):_____ (fax):_____ (emergency):_____

Business/LocalAddress:_____

City, State, Zip:_____

Billing Address:_____

City, State, Zip:_____

Aircraft Make/Model:_____ Storage Location:_____

FAA Registration No:_____ Aircraft Wingspan: _____

Aircraft Make/Model:_____Storage Location: _____

FAA Registration No:_____ Aircraft Wingspan: _____

The Applicant hereby requests the above type of Aircraft storage space from the city in which to store the above-listed Aircraft(s), and in consideration of this request being granted, agrees to the following:

- **PERMIT LIMITATIONS:** This Agreement may not be assigned or transferred. Periodic inspections will be conducted to ensure that the assigned space is only occupied by the Aircraft(s) listed above.

- **INFORMATION CHANGES:** The Applicant shall notify the Airport Manager's Office in writing within fifteen (15) days of any change to the information provided on this form.

- **RELEASE OF LIABILITY:** The Owners assume no liability for damage or loss to Personal property while operating at the Airport. The applicant acknowledges and understands the Aircraft wingspan limitations on the Airport.

- **COMPLIANCE WITH THE LAW:** The applicant shall comply with all applicable laws, Codes, ordinances, rules and regulations.

The undersigned representative certifies he/she is authorized to sign for the business and acknowledges receipt of a copy of this permit.

_____

Authorized Representative's Signature Date signed

********** **Airport Manager's Use Only** **********

Indicate documents provided to applicant

☐ **AIRPORT CODE**

□Article I
□ Article II
□ Article III
□ Article IV
□ Article V
□ Article VI
□ Article VII
□ Article VII

☐ Airfield Driving Packet, if applicable

☐ Pilot Guide

Attach copies of applicable documents

☐ FAA Aircraft Registration ☐ Driver/Vehicle Permit

****

AIRPORT MANAGER'S COMMENTS

_____

_____

_____

_____

Approved by

_____

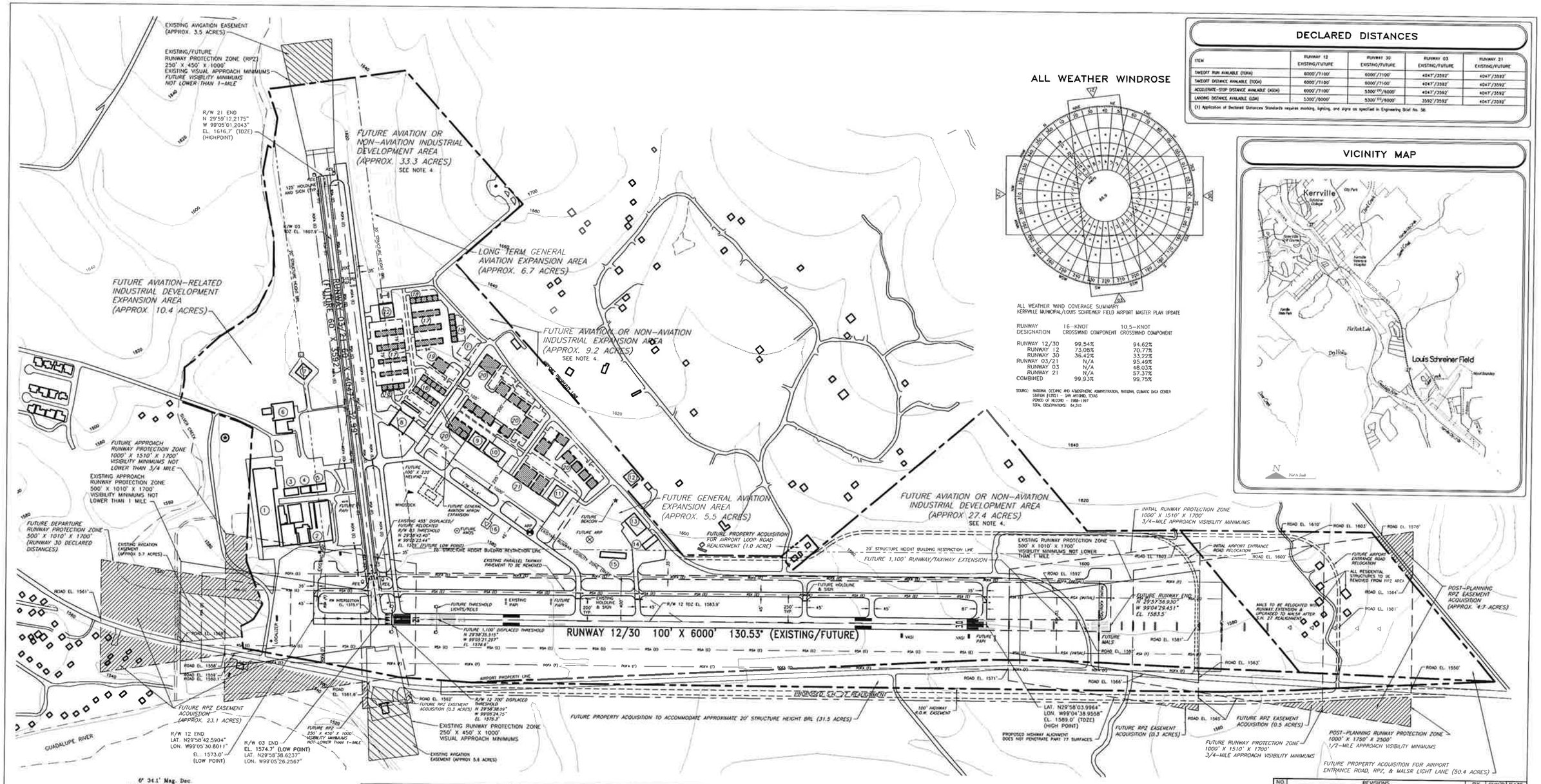
Airport Manager Date signed

Appendix F
KERV 2003 ALP

Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE
ERV
KERR COUNTY
LOUIS SCHREINER FIELD



DECLARED DISTANCES

ITEM	RUNWAY 12 EXISTING/FUTURE	RUNWAY 30 EXISTING/FUTURE	RUNWAY 03 EXISTING/FUTURE	RUNWAY 21 EXISTING/FUTURE
TAKEOFF RUN AVAILABLE (TORA)	6000'/7100'	6000'/7100'	4047'/3592'	4047'/3592'
TAKEOFF DISTANCE AVAILABLE (TODA)	6000'/7100'	6000'/7100'	4047'/3592'	4047'/3592'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	6000'/7100'	5300' (1)/8000'	4047'/3592'	4047'/3592'
LANDING DISTANCE AVAILABLE (LDA)	5300'/8000'	5300' (1)/8000'	3592'/3592'	4047'/3592'

(1) Application of Declared Distances Standards requires marking, lighting, and signs as specified in Engineering Brief No. 58.

ALL WEATHER WINDROSE

ALL WEATHER WIND COVERAGE SUMMARY
KERRVILLE MUNICIPAL/LOUIS SCHREINER FIELD AIRPORT MASTER PLAN UPDATE

RUNWAY DESIGNATION	16-KNOT CROSSWIND COMPONENT	10.5-KNOT CROSSWIND COMPONENT
RUNWAY 12/30	99.54%	94.62%
RUNWAY 12	73.08%	70.77%
RUNWAY 30	36.42%	33.22%
RUNWAY 03/21	N/A	95.49%
RUNWAY 03	N/A	48.03%
RUNWAY 21	N/A	57.37%
COMBINED	99.93%	99.75%

SOURCE: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL CLIMATIC DATA CENTER
STATION (13721) - SAN ANTONIO, TEXAS
PERIOD OF RECORD - 1948-1997
TOTAL OBSERVATIONS: 84,310

VICINITY MAP

BUILDING LEGEND

#	DESCRIPTION	ELEVATION
1.	MOONEY AIRCRAFT MANUFACTURING	1619.24'
2.	MOONEY AIRCRAFT MANUFACTURING	1615.11'
3.	MOONEY AIRCRAFT MANUFACTURING	1604.56'
4.	MOONEY AIRCRAFT MANUFACTURING	1606.43'
5.	MOONEY AIRCRAFT MANUFACTURING	1603.37'
6.	MOONEY AIRCRAFT MANUFACTURING	1616.45'
7.	MOONEY AIRCRAFT MANUFACTURING	1622.35'
8.	COMMERCIAL AVIATION INC.	1630.74'
9.	KERRVILLE AVIATION (AIRCRAFT STORAGE)	1631.38'
10.	KERRVILLE AVIATION	1626.20'
11.	KERRVILLE AVIATION MAINTENANCE HANGAR	1617.08'
12.	MOONEY AIRCRAFT MANUFACTURING	1623.64'
13.	DUDOSH AIRCRAFT SERVICE	1628.45'
14.	DUDOSH AIRCRAFT SERVICE	1611.91'
15.	DUDOSH AIRCRAFT SERVICE	1610.73'
16.	HELIPAD (to be relocated)	
17.	FUTURE T-HANGAR DEVELOPMENT	
18.	FUTURE EXECUTIVE HANGAR DEVELOPMENT	
19.	FUTURE LARGE HANGAR DEVELOPMENT	
20.	FUTURE CORPORATE HANGAR DEVELOPMENT	
21.	FUTURE FBO/MAINTENANCE HANGAR DEV.	
22.	EXECUTIVE HANGAR	1635' est.

RUNWAY DATA

	RUNWAY 12/30 EXISTING	RUNWAY 12/30 FUTURE	RUNWAY 03/21 EXISTING	RUNWAY 03/21 FUTURE
APPROACH VISIBILITY MINIMUMS	1 MILE / 1 MILE	3/4 MILE / 3/4 MILE	V/A	1 MILE / 1 MILE
PART 77 APPROACH SURFACES	34:1/34:1	34:1/34:1	20:1/20:1	20:1/20:1
RUNWAY WIDTH AND LENGTH	100' X 6000'	100' X 7100'	60' X 4047'	60' X 3592'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	25 (S) 60 (D)	60 (D)	15 (S)	15 (S)
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	NON-PRECISION	NON-PRECISION/NON-PRECISION	BASIC	NPI
EFFECTIVE RUNWAY GRADIENT %	.27	.15	1.04	1.0
MAXIMUM GRADE WITHIN RUNWAY LENGTH	.368	.368	1.328	1.328
RUNWAY LINE-OF-SIGHT (R/W Visibility Zone)	Criteria NOT met	Criteria met (1)	Criteria met	Criteria met
ALL WEATHER WIND COVERAGE (16 KNOT, 10.5 KNOT)	99.54%/94.62%	99.54%/94.62%	not applicable/95.49%	not applicable/95.49%
VISUAL APPROACH AIDS	VASI/PAPI	PAPI/REILS/MALS	NONE	PAPI/REILS
INSTRUMENT APPROACH AIDS	VOR-DME (Near the GPS/ LOC/GS), NB	GPS/LPS/LOC/GS/LTER	NONE	GPS
AIRPORT REFERENCE CODE (ARC)	C-II	C-II	B-II (Small A/C only)	B-I (Small A/C only)
CRITICAL AIRCRAFT	GRUMMAN GULFSTREAM II	GRUMMAN GULFSTREAM II	Mooney (Typ.)	Mooney (Typ.)
RUNWAY SAFETY AREA	500' X 8000'	500' X 8100'	120' X 4527'	120' X 4072'
RUNWAY OBJECT FREE AREA	800' X 8000'	800' X 8100'	250' X 4527'	250' X 4072'
RUNWAY OBSTACLE FREE ZONE (No OFZ object penetrations)	400' X 6400'	400' X 7500'	250' X 4447'	250' X 3592'
TOUCHDOWN ZONE ELEVATIONS (TDZE)	1583.9'/1588.0	1583.9'/1588.0	1607.5'/1616.7'	1607.9'/1616.7'
THRESHOLD SITING CRITERIA	No threshold siting surface object penetrations			

NOTES: (1) Runway Visibility Zone deficiency is to be corrected with R/W 03 threshold relocation.

AIRPORT DATA

ITEM	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	1616.7'	1616.7'
AIRPORT REFERENCE POINT (ARP)	LAT. 29° 58' 38.248" LON. 99° 03' 08.447"	LAT. 29° 58' 38.248" LON. 99° 03' 08.283"
MEAN MAX. TEMP. HOTTEST MONTH	95°F	95°F
AIRPORT MAGNETIC VARIATION & DATE	6° 34.1° (7-20-00)	6° 34.1° (7-20-00)
NPIAS SERVICE LEVEL	GA	GA
TAXIWAY LIGHTING	NONE	MITL
TAXIWAY STRIPING	CENTERLINE	CENTERLINE
AIRPORT & TERMINAL NAVAIDS	VOR/DME/RNAV/GPS/LPS/LOC	VOR/DME/RNAV/GPS/LPS/LOC
UNICOM (MHz)	122.7	122.7
CONTROL TOWER (Y/N)	NONE	NONE
AIRPORT PROPERTY (ACRES)	APPROX. 504	APPROX. 585.9

LAYOUT PLAN LEGEND

ITEM	EXISTING	FUTURE
BUILDING RESTRICTION LINE	BRL	BRL
AIRPORT PROPERTY LINE		
FENCE		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDINGS		
AIRFIELD PAVEMENT		
FUEL STORAGE	F	F
BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
PRECISION APPROACH PATH INDICATOR(PAPI)		
RUNWAY END IDENTIFIER LIGHTS(REILS)		
RUNWAY SAFETY AREA (RSA)	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA (ROFA)	ROFA (E)	ROFA (F)
AUTOMATED WEATHER OBSERVATION STATION		
HOLDLINES & SIGNS		

NOTES:
1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. TOPOGRAPHICAL CONTOURS TAKEN FROM USGS QUADRANGLE MAPS.
3. RUNWAY BEARINGS RECORDED CLOCKWISE FROM TRUE NORTH.
4. FUTURE DEVELOPMENT OF AIRPORT PROPERTY FOR NON-AVIATION USES WILL REQUIRE PRIOR APPROVAL BY THE FAA AND TXDOT AVIATION DIVISION.
5. "INITIAL" REFERS TO INTERMEDIATE DEVELOPMENT PROJECTS IMPLEMENTED PRIOR TO THE COMPLETION OF THE 20 YEAR DEVELOPMENT PLAN.

NON-STANDARD CONDITIONS

ITEM	AIRPLANE DESIGN GROUP EXISTING/FUTURE	STANDARD EXISTING/FUTURE	NON-STANDARD CONDITION EXISTING/FUTURE	REMARKS
RUNWAY 12 SAFETY AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	REDUCED AT 300' R/W 12 THRESHOLD DISPLACEMENT AND IMPLEMENTATION OF DECLARED DISTANCES CRITERIA. TO BE REDUCED AT FUTURE 1,100' R/W 12 THRESHOLD DISPLACEMENT AND REVISION OF DECLARED DISTANCES CRITERIA. TO BE REDUCED BY RELOCATION OF AIRPORT ENTRANCE ROAD.
RUNWAY 12 OBJECT FREE AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	
RUNWAY 30 SAFETY AREA LENGTH	C-II/C-II	1000'/1000'	625'/NONE	
RUNWAY 30 OBJECT FREE AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	TO BE REDUCED W/ RELOCATION OF AIRPORT ENTRANCE ROAD AND REALIGNMENT OF S.H. 27. HOWEVER, S.H. 27 IS CONSIDERED A PERMANENT OBSTRUCTION TO THE RUNWAY 30 RPA DUE TO COST AND FEASIBILITY ASSOCIATED WITH RELOCATION.

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 OR 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY.

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 OR 5 PLUS THE CONDITIONS/COMMENTS IN LETTER DATED:

DIRECTOR, AVIATION DIVISION — DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE — DATE

SIGNATURE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

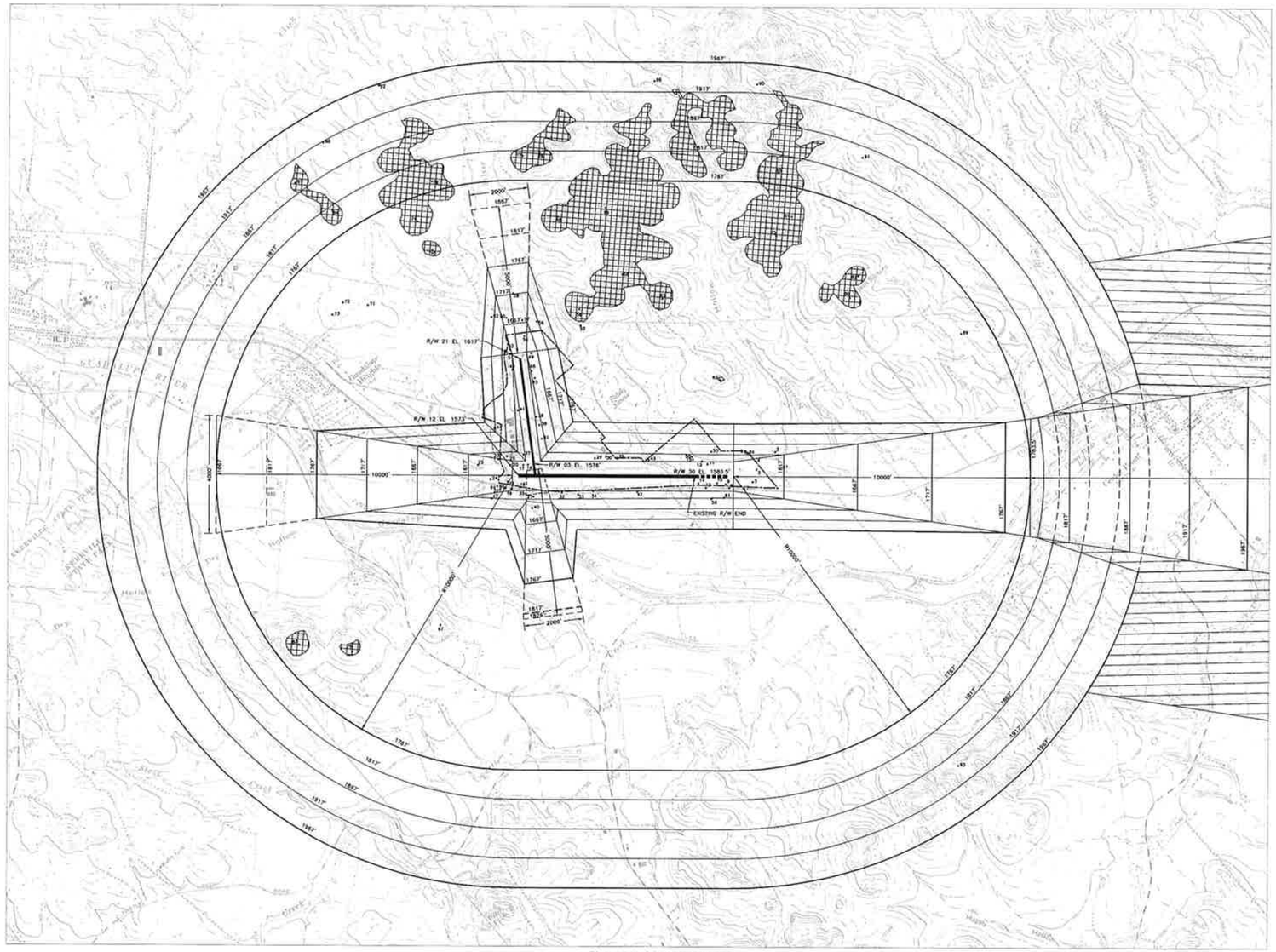
DESIGNED BY BDC — DATE 07/09/02
DRAWN BY — DATE
CHECKED BY — DATE

AIRPORT LAYOUT DRAWING
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

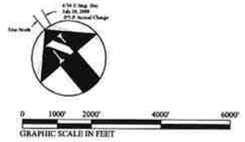
Texas Department of Transportation Aviation Division

SHEET 1 OF 11

Figure E1 Airport Layout Plan



PLAN VIEW CONICAL SURFACE



PART 77 OBSTRUCTIONS

OBS	DESCRIPTION	ELEVATION	PENETRATION	DISPOSITION
1	WINDMILL	1649	32	TO BE REMOVED
2	TREE	1648	18	TO BE REMOVED
3	TREE	1609	29	TO BE REMOVED
4	TREE	1639	41	TO BE REMOVED
5	TREE	1624	20	TO BE REMOVED
6	TREE	1644	16	TO BE REMOVED
7	TREE	1610	20	TO BE REMOVED
8	TREE	1612	29	TO BE REMOVED
9	TREE	1608	25	NONE
10	TREE	1605	21	NONE
11	FENCE	1596	11	TO BE RELOCATED
12	TREE	1609	24	TO BE TRIMMED OR REMOVED
13	ROAD	1608	24	TO BE RELOCATED
14	TREE	1597	12	TO BE TRIMMED OR REMOVED
15	TREE	1645	41	TO BE TRIMMED OR REMOVED
16	OL ON BLDG	1590	16	TO BE RELOCATED
17	FENCE	1583	10	TO BE RELOCATED
18	POLE	1598	25	NONE
19	POLE	1594	20	NONE
20	TREE	1590	16	TO BE TRIMMED OR REMOVED
21	ANT ON BLDG	1588	10	NONE
22	TREE	1606	21	NONE
23	POLE	1610	23	NONE
24	TREE	1611	16	NONE
25	TREE	1615	8	NONE
26	OL ON BUILDING	1602	26	NONE
27	POLE	1590	-8	NONE
28	TREE	1657	+41	NONE
29	WSK ON HANGAR	1616	25	NONE
30	SIGN	1620	22	NONE
31	OL ON LT2 WSK	1615	-12	NONE
32	POLE	1590	6	NONE
33	TREE	1607	12	NONE
34	POLE	1608	20	NONE
35	TREE	1631	39	TO BE TRIMMED OR REMOVED
36	ANT ON OL HANGAR	1638	30	NONE
37	ROD ON OL HANGAR	1619	30	NONE
38	TREE	1629	29	TO BE TRIMMED OR REMOVED
39	TREE	1608	9	NONE
40	TREE	1613	-1	NONE
41	OL ON HANGAR	1620	16	NONE
42	TREE	1618	34	NONE
43	TREE	1602	34	TO BE TRIMMED OR REMOVED
44	APBN ON TANK	1706	7	NONE
45	TREE	1636	26	TO BE TRIMMED OR REMOVED
46	TREE	1647	6	TO BE TRIMMED OR REMOVED
47	TREE	1623	19	NONE
48	TREE	1637	10	TO BE TRIMMED OR REMOVED
49	TREE	1662	7	TO BE TRIMMED OR REMOVED
50	TREE	1632	28	TO BE TRIMMED OR REMOVED
51	TREE	1646	22	TO BE TRIMMED OR REMOVED
52	TREE	1649	3	TO BE TRIMMED OR REMOVED
53	POLE	1792	25	NONE
54	TREE	1646	2	NONE
55	POLE	1646	15	NONE
56	POLE	1715	24	NONE
57	POLE	1670	-1	NONE
58	TREE	1898	121	AERONAUTICAL STUDY
59	TREE	1613	-2	NONE
60	TREE	1660	-19	NONE
61	TREE	1609	-7	NONE
62	POLE	1692	-10	NONE
63	TREE	1796	29	NONE
64	TREE	1644	19	TO BE TRIMMED OR REMOVED
65	TREE	1875	108	AERONAUTICAL STUDY
66	TREE	1851	124	AERONAUTICAL STUDY
67	TREE	1768	1	NONE
68	TREE	1890	123	AERONAUTICAL STUDY
69	TREE	1905	138	AERONAUTICAL STUDY
70	TREE	1803	56	NONE
71	POLE	1784	17	NONE
72	POLE	1793	26	NONE
73	POLE	1779	12	NONE
74	TREE	1903	136	AERONAUTICAL STUDY
75	TREE	1911	144	AERONAUTICAL STUDY
76	TREE	1808	41	NONE
77	TREE	1927	118	AERONAUTICAL STUDY
78	TREE	1925	111	AERONAUTICAL STUDY
79	TREE	1925	142	AERONAUTICAL STUDY
80	TREE	1862	95	NONE
81	TREE	1909	142	AERONAUTICAL STUDY
82	TREE	1881	114	AERONAUTICAL STUDY
83	OL CNT ON BLDG	1890	123	AERONAUTICAL STUDY
84	TREE	1905	97	AERONAUTICAL STUDY
85	TREE	1921	134	AERONAUTICAL STUDY
86	TREE	1751	16	NONE
87	TREE	1937	53	NONE
88	TREE	1920	5	NONE
89	TRNSN TWR	1767	0	NONE
90	TREE	1948	17	NONE
91	TRNSN TWR	1871	22	NONE
92	TREE	1906	22	NONE
93	TREE	1924	26	NONE
944	POLE	1590	2	NONE
954	POLE	1593	13	NONE

* NOT SURVEYED

NOTES

NOTES:
1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. SURFACES SHOWN ARE BASED ON FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE."
3. OBSTRUCTIONS TAKEN FROM NOS OBSTRUCTION CHART OC5E30 "KERRVILLE MUNICIPAL AIRPORT/LOUIS SCHREINER FIELD, KERRVILLE, TX. PUBLISHED SEPT. 1994.
4. USGS TOPOGRAPHICAL QUADRANGLE MAPS USED ARE BANDERA, CENTER POINT, COMFORT, FALL CREEK, KERRVILLE, LEGION, AND TURKEY KNOB, TX.
5. AIRPORT ZONING ORDINANCES ADOPTED JULY 1982.

TERRAIN OBSTRUCTIONS TO PART 77 SURFACES

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION
AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE CONDITIONS/COMMENTS IN LETTER DATED:

DIRECTOR, AVIATION DIVISION — DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE — DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

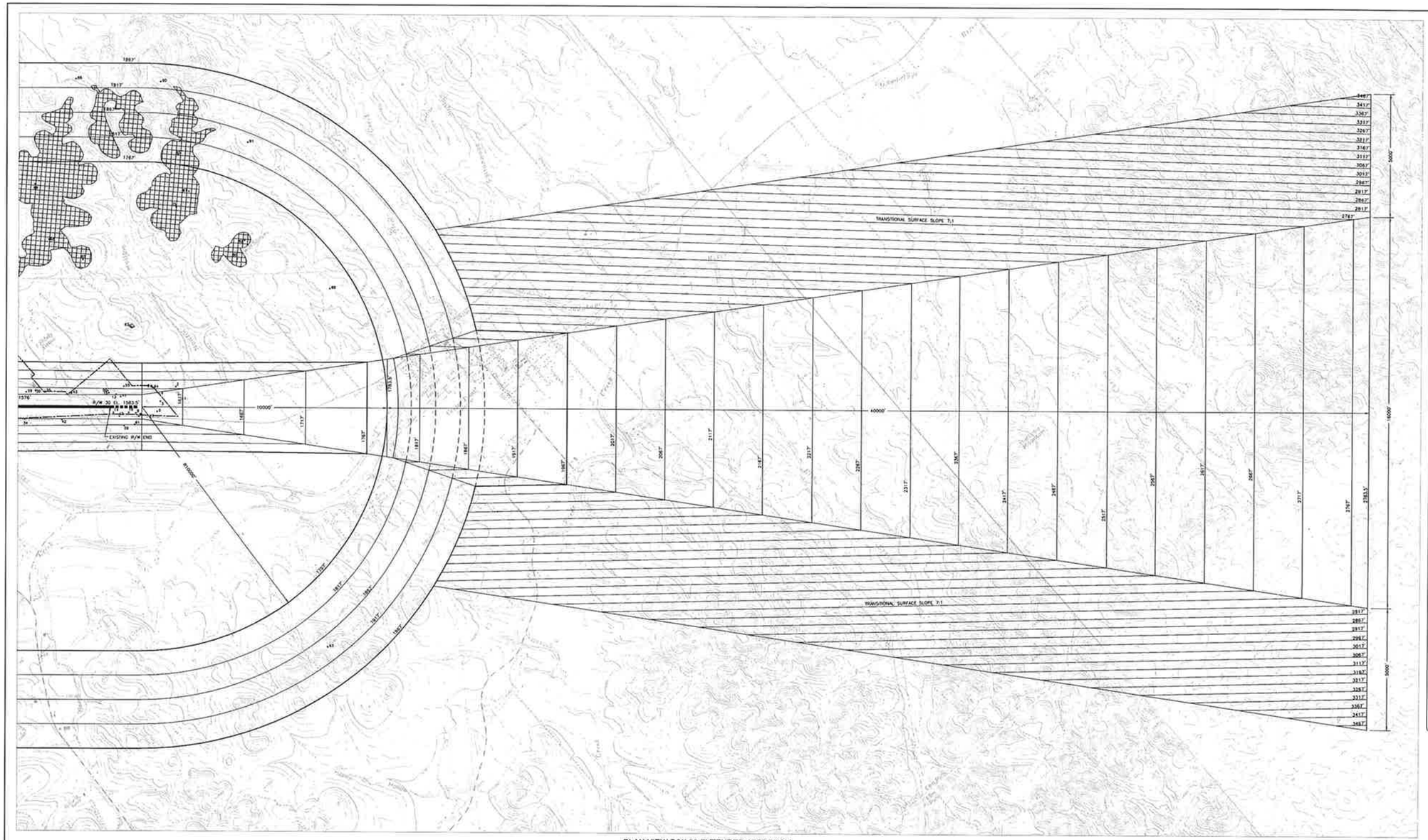
DESIGNED BY — DATE
RDC 07/09/02
DRAWN BY — DATE
CHECKED BY — DATE

PLAN VIEW CONICAL SURFACE
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

SHEET 2 OF 11

Figure E2 Airport Airspace Drawing/Plan View Conical Surface



PLAN VIEW R/W 30 EXTENDED APPROACH

PART 77 OBSTRUCTIONS

OBS	DESCRIPTION	ELEVATION	PENETRATION	DISPOSITION
1	WINDMILL	1649	32	TO BE REMOVED
2	TREE	1648	28	TO BE REMOVED
3	TREE	1628	29	TO BE REMOVED
4	TREE	1639	41	TO BE REMOVED
5	TREE	1624	28	TO BE REMOVED
6	TREE	1644	16	TO BE REMOVED
7	TREE	1610	20	TO BE REMOVED
8	TREE	1612	29	TO BE REMOVED
9	TREE	1608	25	NONE
10	TREE	1605	21	NONE
11	FENCE	1596	11	TO BE RELOCATED
12	TREE	1607	24	TO BE TRIMMED OR REMOVED
13	ROAD	1608	24	TO BE RELOCATED
14	TREE	1597	12	TO BE TRIMMED OR REMOVED
15	TREE	1625	41	TO BE TRIMMED OR REMOVED
16	DL ON BLDG	1590	16	TO BE RELOCATED
17	FENCE	1583	10	TO BE RELOCATED
18	POLE	1598	25	NONE
19	POLE	1594	20	NONE
20	TREE	1590	16	TO BE TRIMMED OR REMOVED
21	ANT ON BLDG	1588	10	NONE
22	TREE	1606	21	NONE
23	POLE	1610	23	NONE
24	TREE	1611	16	NONE
25	TREE	1615	8	NONE
26	DL ON BUILDING	1602	-06	NONE
27	POLE	1592	-18	NONE
28	TREE	1657	+41	NONE
29	WSK ON HANGAR	1616	07	NONE
30	SIGN	1620	22	NONE
31	DL ON L1B WSK	1613	+12	NONE
32	POLE	1590	6	NONE
33	TREE	1607	12	NONE
34	POLE	1608	20	NONE
35	TREE	1631	29	TO BE TRIMMED OR REMOVED
36	ANT ON DL HANGAR	1638	30	NONE
37	ROD ON DL HANGAR	1619	30	NONE
38	TREE	1603	09	TO BE TRIMMED OR REMOVED
39	TREE	1608	9	NONE
40	TREE	1612	-1	NONE
41	DL ON HANGAR	1620	16	NONE
42	TREE	1618	24	NONE
43	TREE	1602	34	TO BE TRIMMED OR REMOVED
44	APBN ON TANK	1706	7	NONE
45	TREE	1656	26	TO BE TRIMMED OR REMOVED
46	TREE	1647	6	TO BE TRIMMED OR REMOVED
47	TREE	1623	19	NONE
48	TREE	1637	10	TO BE TRIMMED OR REMOVED
49	TREE	1642	7	TO BE TRIMMED OR REMOVED
50	TREE	1632	28	TO BE TRIMMED OR REMOVED
51	TREE	1646	02	TO BE TRIMMED OR REMOVED
52	TREE	1649	3	TO BE TRIMMED OR REMOVED
53	POLE	1792	25	NONE
54	TREE	1646	-2	NONE
55	POLE	1646	15	NONE
56	POLE	1715	24	NONE
57	POLE	1670	-1	NONE
58	TREE	1808	121	AERONAUTICAL STUDY
59	TREE	1613	-2	NONE
60	TREE	1660	-19	NONE
61	TREE	1609	-7	NONE
62	POLE	1692	-10	NONE
63	TREE	1796	29	NONE
64	TREE	1644	19	TO BE TRIMMED OR REMOVED
65	TREE	1875	108	AERONAUTICAL STUDY
66	TREE	1891	124	AERONAUTICAL STUDY
67	TREE	1760	1	NONE
68	TREE	1890	123	AERONAUTICAL STUDY
69	TREE	1925	158	AERONAUTICAL STUDY
70	TREE	1823	56	NONE
71	POLE	1784	17	NONE
72	POLE	1793	26	NONE
73	POLE	1729	12	NONE
74	TREE	1903	136	AERONAUTICAL STUDY
75	TREE	1911	144	AERONAUTICAL STUDY
76	TREE	1808	41	NONE
77	TREE	1927	118	AERONAUTICAL STUDY
78	TREE	1925	111	AERONAUTICAL STUDY
79	TREE	1925	142	AERONAUTICAL STUDY
80	TREE	1862	95	NONE
81	TREE	1909	142	AERONAUTICAL STUDY
82	TREE	1881	114	AERONAUTICAL STUDY
83	DL CHY ON BLDG	1890	103	AERONAUTICAL STUDY
84	TREE	1905	97	AERONAUTICAL STUDY
85	TREE	1921	134	AERONAUTICAL STUDY
86	TREE	1951	16	NONE
87	TREE	1937	53	NONE
88	TREE	1920	5	NONE
89	TRMSN TWR	1767	0	NONE
90	TREE	1948	13	NONE
91	TRMSN TWR	1871	22	NONE
92	TREE	1906	22	NONE
93	TREE	1924	36	NONE
94*	POLE	1590	3	NONE
95*	POLE	1593	13	NONE

* NOT SURVEYED

NOTES

NOTES:
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2. SURFACES SHOWN ARE BASED ON FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE."
3. OBSTRUCTIONS TAKEN FROM NOS OBSTRUCTION CHART OCS490 "KERRVILLE MUNICIPAL AIRPORT/LOUIS SCHREINER FIELD, KERRVILLE, TX, PUBLISHED SEPT. 1994.
4. USGS TOPOGRAPHICAL QUADRANGLE MAPS USED ARE BANDERA, CENTER POINT, COMFORT, FALL CREEK, KERRVILLE, LEGION, AND TURKEY KNOB, TX.
5. AIRPORT ZONING ORDINANCES ADOPTED JULY 1992.

TERRAIN OBSTRUCTIONS TO PART 77 SURFACES

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION
AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY.

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DIRECTOR, AVIATION DIVISION — DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE — DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

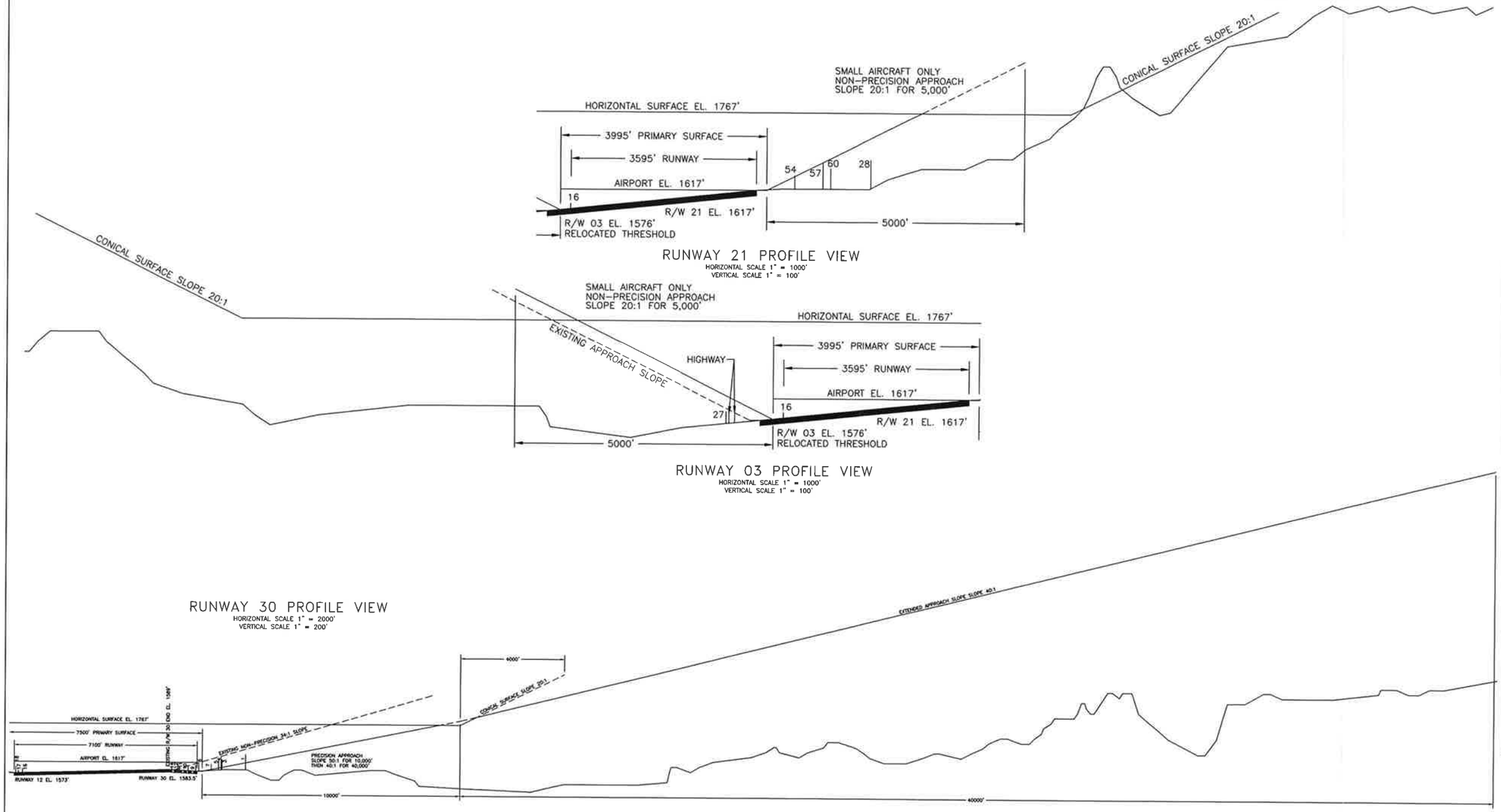
DESIGNED BY — DATE
BDC 07/09/02
DRAWN BY — DATE
CHECKED BY — DATE

PLAN VIEW R/W 30 APPROACH
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

SHEET 3 OF 11

Figure E3 Airport Airspace Drawing/Plan View Runway 30 Approach



PART 77 OBSTRUCTIONS

OBS	DESCRIPTION	ELEVATION	PENETRATION	DISPOSITION
1	WINDMILL	1649	32	TO BE REMOVED
2	TREE	1648	18	TO BE REMOVED
3	TREE	1628	29	TO BE REMOVED
4	TREE	1639	41	TO BE REMOVED
5	TREE	1624	28	TO BE REMOVED
6	TREE	1644	16	TO BE REMOVED
7	TREE	1610	20	TO BE REMOVED
8	TREE	1612	29	TO BE REMOVED
9	TREE	1608	25	NONE
10	TREE	1605	21	NONE
11	FENCE	1596	11	TO BE RELOCATED
12	TREE	1609	24	TO BE TRIMMED OR REMOVED
13	ROAD	1608	24	TO BE RELOCATED
14	TREE	1597	12	TO BE TRIMMED OR REMOVED
15	TREE	1625	41	TO BE TRIMMED OR REMOVED
16	OL ON BLDG	1590	16	TO BE RELOCATED
17	FENCE	1583	10	TO BE RELOCATED
18	POLE	1598	25	NONE
19	POLE	1594	20	NONE
20	TREE	1590	16	TO BE TRIMMED OR REMOVED
21	ANT ON BLDG	1588	10	NONE
22	TREE	1606	21	NONE
23	POLE	1610	23	NONE
24	TREE	1611	16	NONE
25	TREE	1615	8	NONE
26	OL ON BUILDING	1622	26	NONE
27	POLE	1582	-8	NONE
28	TREE	1657	+43	NONE
29	WSK ON HANGAR	1616	25	NONE
30	SIGN	1620	22	NONE
31	OL ON LTD WSK	1613	+12	NONE
32	POLE	1590	6	NONE
33	TREE	1607	12	NONE
34	POLE	1608	30	NONE
35	TREE	1631	39	TO BE TRIMMED OR REMOVED
36	ANT ON OL HANGAR	1638	30	NONE
37	ROB ON OL HANGAR	1619	30	NONE
38	TREE	1629	29	TO BE TRIMMED OR REMOVED
39	TREE	1608	9	NONE
40	TREE	1613	+1	NONE
41	OL ON HANGAR	1620	16	NONE
42	TREE	1610	34	NONE
43	TREE	1602	24	TO BE TRIMMED OR REMOVED
44	APSN ON TANK	1726	7	NONE
45	TREE	1656	26	TO BE TRIMMED OR REMOVED
46	TREE	1647	6	TO BE TRIMMED OR REMOVED
47	TREE	1623	19	NONE
48	TREE	1627	10	TO BE TRIMMED OR REMOVED
49	TREE	1642	7	TO BE TRIMMED OR REMOVED
50	TREE	1632	28	TO BE TRIMMED OR REMOVED
51	TREE	1645	22	TO BE TRIMMED OR REMOVED
52	TREE	1649	3	TO BE TRIMMED OR REMOVED
53	POLE	1792	23	NONE
54	TREE	1646	2	NONE
55	POLE	1646	15	NONE
56	POLE	1715	24	NONE
57	POLE	1670	+1	NONE
58	TREE	1808	121	AERONAUTICAL STUDY
59	TREE	1613	-2	NONE
60	TREE	1640	-19	NONE
61	TREE	1609	-7	NONE
62	POLE	1692	+10	NONE
63	TREE	1796	29	NONE
64	TREE	1644	19	TO BE TRIMMED OR REMOVED
65	TREE	1875	108	AERONAUTICAL STUDY
66	TREE	1891	124	AERONAUTICAL STUDY
67	TREE	1768	1	NONE
68	TREE	1890	123	AERONAUTICAL STUDY
69	TREE	1905	138	AERONAUTICAL STUDY
70	TREE	1823	56	NONE
71	POLE	1784	17	NONE
72	POLE	1793	26	NONE
73	POLE	1779	12	NONE
74	TREE	1903	136	AERONAUTICAL STUDY
75	TREE	1911	144	AERONAUTICAL STUDY
76	TREE	1808	41	NONE
77	TREE	1927	118	AERONAUTICAL STUDY
78	TREE	1929	111	AERONAUTICAL STUDY
79	TREE	1925	142	AERONAUTICAL STUDY
80	TREE	1862	93	NONE
81	TREE	1909	142	AERONAUTICAL STUDY
82	TREE	1881	114	AERONAUTICAL STUDY
83	OL ON OL BLDG	1890	123	AERONAUTICAL STUDY
84	TREE	1905	97	AERONAUTICAL STUDY
85	TREE	1901	134	AERONAUTICAL STUDY
86	TREE	1751	16	NONE
87	TREE	1937	53	NONE
88	TREE	1920	5	NONE
89	TANSN TWR	1767	0	NONE
90	TREE	1948	17	NONE
91	TANSN TWR	1871	22	NONE
92	TREE	1986	22	NONE
93	TREE	1924	36	NONE
94*	POLE	1590	2	NONE
95*	POLE	1593	13	NONE

* NOT SURVEYED

NOTES

NOTES:
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2. SURFACES SHOWN ARE BASED ON FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE."
3. OBSTRUCTIONS TAKEN FROM NOS OBSTRUCTION CHART OCS690 "KERRVILLE MUNICIPAL AIRPORT/LOUIS SCHREINER FIELD, KERRVILLE, TX. PUBLISHED SEPT. 1994.
4. USGS TOPOGRAPHICAL QUADRANGLE MAPS USED ARE BANDERA, CENTER POINT, COMFORT, FALL CREEK, KERRVILLE, LEGION, AND TURKEY KNOB, TX.
5. TERRAIN PROFILE REPRESENTS THE HIGHEST POINT ALONG THE LENGTH AND ACROSS THE WIDTH OF THE APPROACH SURFACE.

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION
AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY.

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DIRECTOR, AVIATION DIVISION — DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE — DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

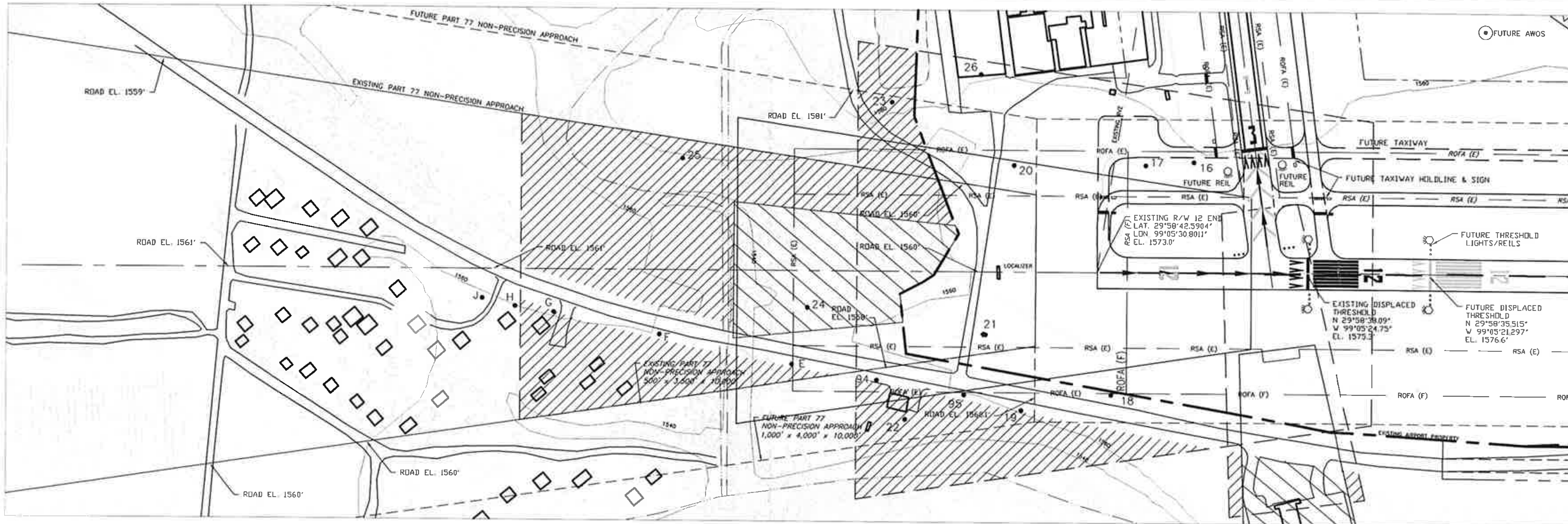
DESIGNED BY — DATE
BDC 07/09/02
DRAWN BY — DATE
CHECKED BY — DATE

AIRPORT AIRSPACE PROFILES
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

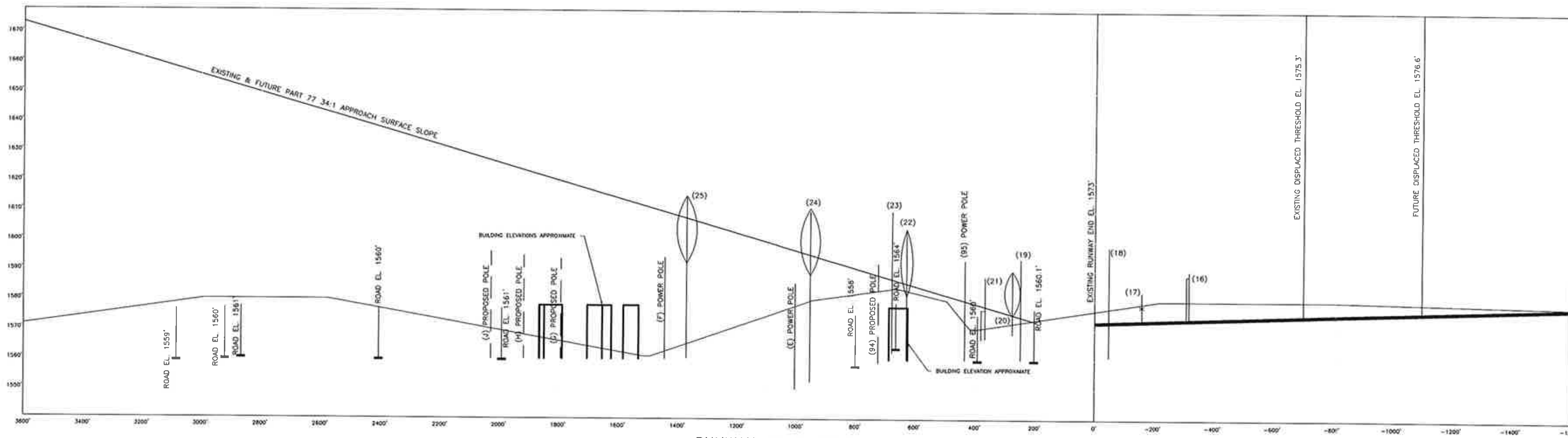
Texas Department of Transportation Aviation Division

SHEET 4 OF 11

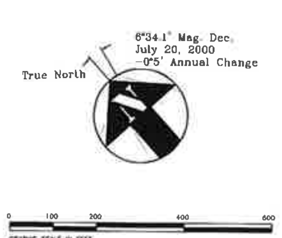
Figure E4 Airport Airspace Drawing/Runway Profile Views



RUNWAY 12 PLAN
1" = 200'



RUNWAY 12 PROFILE
1" = 200' HORIZONTALLY
1" = 20' VERTICALLY



PART 77 OBSTRUCTIONS

NO	ITEM	ELEVATION	SURFACE	FUTURE PENETRATION	DISPOSITION
16	OL ON BLDG	1590'	PRIMARY	16'	TO BE RELOCATED
17	FENCE	1583'	PRIMARY	9'	TO BE RELOCATED
18	POLE	1598'	PRIMARY	25'	NONE
19	POLE	1594'	EXIST. TRANS./FUT. APP	20'	NONE
20	TREE	1590'	EXIST. TRANS./FUT. APP	15'	TO BE TRIMMED OR REMOVED
21	ANT ON BLDG	1588'	APPROACH	10'	NONE
22	TREE	1606'	EXIST. TRANS./FUT. APP	20'	TO BE TRIMMED OR REMOVED
23	POLE	1610'	EXIST. TRANS./FUT. APP	23'	NONE
24	TREE	1611'	APPROACH	16'	TO BE TRIMMED OR REMOVED
25	TREE	1615'	APPROACH	9'	TO BE TRIMMED OR REMOVED
26	OL ON BLDG	1622'	TRANSITIONAL	16'	NONE
94*	PROPOSED POLE	1582'	EXISTING TRANSITIONAL FUTURE APPROACH	4'	NONE
95	POWER POLE	1593'	EXISTING TRANSITIONAL FUTURE APPROACH	13'	NONE

1. TERRAIN PROFILE REPRESENTS THE HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGTH OF THE FUTURE PART 77 APPROACH SURFACE.
2. NUMBERED ITEMS (1) ARE EXISTING PART 77 OBSTRUCTIONS. LETTERED ITEMS (A) TAKEN FROM SURVEY BY KERRVILLE PUBLIC UTILITY BOARD DATED 11-04-99.
3. 94* NEW OBSTRUCTION TO PART 77 APPROACH SURFACE, ELEVATION AND PENETRATION TO BE VERIFIED.

RUNWAY DATA

	RUNWAY 12/30		RUNWAY 03/21	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1 MILE / 1 MILE	3/4 MILE / 3/4 MILE	V/V	1 MILE / 1 MILE
PART 77 APPROACH SURFACES	34:1/34:1	34:1/34:1	20:1/20:1	20:1/20:1
RUNWAY WIDTH AND LENGTH	100' x 6000'	100' x 7100'	60' x 4047'	60' x 3582'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	35 (S)	60 (D)	15 (S)	15 (S)
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	NON-PRECISION	NON-PRECISION/NON-PRECISION	BASIC	NPI
EFFECTIVE RUNWAY GRADIENT %	.27	.15	1.04	1.0
MAXIMUM GRADE WITHIN RUNWAY LENGTH	.36%	.36%	1.32%	1.32%
RUNWAY LINE-OF-SIGHT (R/W Visibility Zone)	Criteria NOT met	Criteria met (1)	Criteria met	Criteria met
ALL WEATHER WIND COVERAGE (16 KNOT, 10.5 KNOT)	99.54%/94.06%	99.54%/94.06%	not applicable/95.45%	not applicable/95.43%
VISUAL APPROACH AIDS	VASI,PAPI	PAPI,REILS,MALS	NONE	PAPI/REILS
INSTRUMENT APPROACH AIDS	[illegible]	GPS/GPS,LOCALIZER	NONE	GPS
AIRPORT REFERENCE CODE (ARC)	C-II	C-II	B-I (Small A/C only)	B-I (Small A/C only)
CRITICAL AIRCRAFT	GRUMMAN GULFSTREAM II	GRUMMAN GULFSTREAM II	Mooney (Typ.)	Mooney (Typ.)
RUNWAY SAFETY AREA	500' x 8000'	500' x 9100'	120' x 4537'	120' x 4072'
RUNWAY OBJECT FREE AREA	800' x 8000'	800' x 9100'	250' x 4527'	250' x 4072'
RUNWAY OBSTACLE FREE ZONE (No OFZ object penetration)	400' x 6400'	400' x 7500'	250' x 4447'	250' x 3982'
TOUCHDOWN ZONE ELEVATIONS (TDZE)	1583.9'/1589.0	1583.9'/1589.0	1607.9'/1610.7'	1607.8'/1616.7'
THRESHOLD SITING CRITERIA	No threshold siting surface object penetrations			

NOTES: (1) Runway Visibility Zone deficiency is to be corrected with R/W 03 threshold relocation.

AIRPORT DATA

ITEM	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	1616.7'	1616.7'
AIRPORT REFERENCE POINT (ARP)	LAT. 29° 58' 36.246" LON. 99° 05' 08.447"	LAT. 29° 58' 32.367" LON. 99° 05' 04.283"
MEAN MAX. TEMP. HOTTEST MONTH	95°F	95°F
AIRPORT MAGNETIC VARIATION & DATE	6° 34.1' (7-20-00)	6° 34.1' (7-20-00)
NPIAS SERVICE LEVEL	GA	GA
TAXIWAY LIGHTING	NONE	MITL
TAXIWAY STRIPING	CENTERLINE	CENTERLINE
AIRPORT & TERMINAL NAVAIDS	VOR/DME,RNAV,NDB,GPS,LOC	VOR/DME,RNAV,NDB,GPS,LOC
UNICOM (MHz)	122.7	122.7
CONTROL TOWER (MHz)	NONE	NONE
AIRPORT PROPERTY (ACRES)	APPROX. 504	APPROX. 583.8

LAYOUT PLAN LEGEND

ITEM	EXISTING	FUTURE
BUILDING RESTRICTION LINE	BRL	BRL
AIRPORT PROPERTY LINE		
FENCE		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDINGS		
AIRFIELD PAVEMENT		
FUEL STORAGE		
BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
PRECISION APPROACH PATH INDICATOR(PAPI)		
RUNWAY END IDENTIFIER LIGHTS(REILS)		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (ROFA)		
AUTOMATED WEATHER OBSERVATION STATION		
HOLDLINES & SIGNS		

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2. TOPOGRAPHICAL CONTOURS TAKEN FROM USGS QUADRANGLE MAPS.
3. RUNWAY BEARINGS RECKONED CLOCKWISE FROM TRUE NORTH.
4. FUTURE DEVELOPMENT OF AIRPORT PROPERTY FOR NON-AVIATION USES WILL REQUIRE PRIOR APPROVAL BY THE FAA AND TXDOT AVIATION DIVISION.
5. "INITIAL" REFERS TO INTERMEDIATE DEVELOPMENT PROJECTS IMPLEMENTED PRIOR TO THE COMPLETION OF THE 20 YEAR DEVELOPMENT PLAN.

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY

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DIRECTOR, AVIATION DIVISION DATE

AIRPORT SPONSOR

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TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

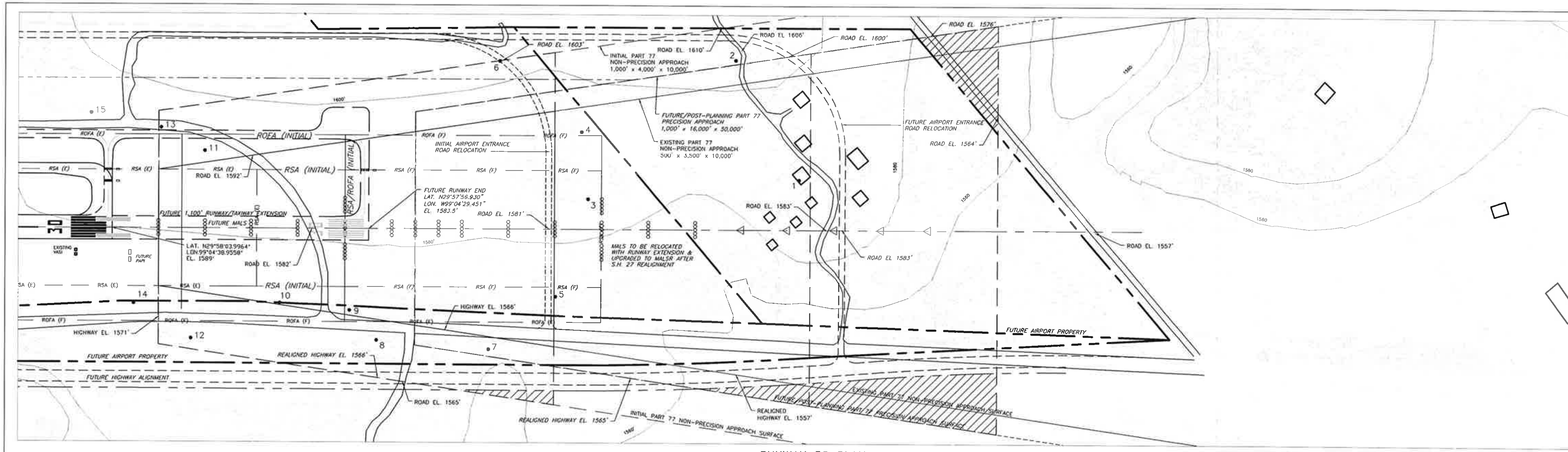
DESIGNED BY BDC DATE 07/09/02
DRAWN BY DATE
CHECKED BY DATE

RUNWAY 12 INNER APPROACH
PLAN & PROFILE
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

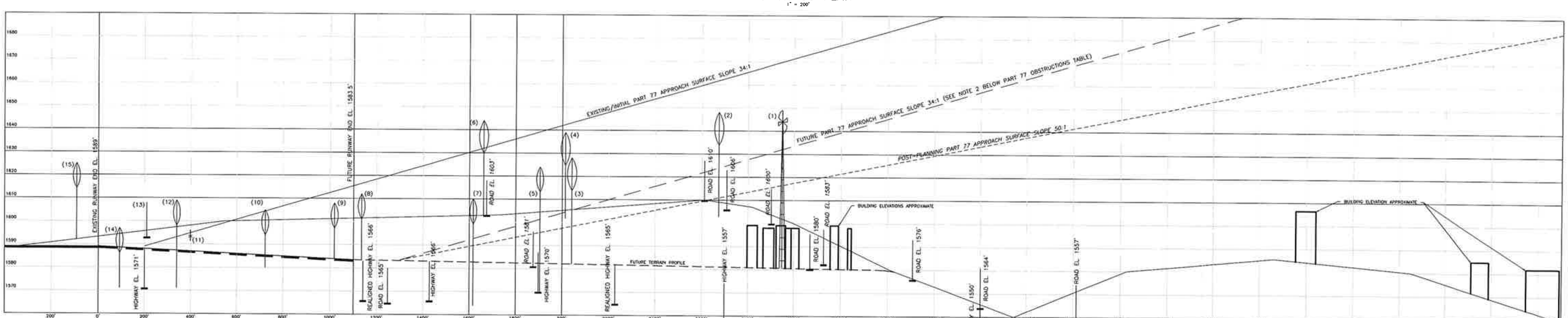
Texas Department of Transportation Aviation Division

SHEET 5 OF 11

Figure E5 Inner Approach Drawing/Runway 12 Plan & Profile



RUNWAY 30 PLAN
1" = 200'



RUNWAY 30 PROFILE
1" = 200' HORIZONTALLY
1" = 20' VERTICALLY

PART 77 OBSTRUCTIONS

NO	ITEM	ELEVATION	SURFACE	FUTURE PENETRATION	DISPOSITION
1	WINDMILL	1649'	APPROACH	5'	TO BE REMOVED
2	TREE	1640'	EXIST. TRANS./INT. APP./FUT. TRANS.	10'	TO BE TRIMMED OR REMOVED
3	TREE	1626'	APPROACH	3'	TO BE TRIMMED OR REMOVED
4	TREE	1638'	APPROACH	14'	TO BE TRIMMED OR REMOVED
5	TREE	1624'	APPROACH	1'	TO BE TRIMMED OR REMOVED
6	TREE	1644'	EXIST. TRANS./INT. APP./FUT. APP.	26'	TO BE TRIMMED OR REMOVED
7	TREE	1610'	EXIST. TRANS./INT. APP./FUT. APP.	-7'	NONE (NOT OBSTRUCTION)
8	TREE	1612'	EXIST. TRANS./INT. APP./FUT. PRIM.	4'	TO BE TRIMMED OR REMOVED
9	TREE	1608'	APPROACH	3'	TO BE TRIMMED OR REMOVED
10	TREE	1605'	APPROACH	6'	TO BE TRIMMED OR REMOVED
11	FENCE	1596'	EXIST. TRANS./INT. APP./FUT. PRIM.	3'	TO BE REMOVED
12	TREE	1609'	EXIST. TRANS./INT. APP./FUT. PRIM.	17'	TO BE TRIMMED OR REMOVED
13	ROAD	1608'(N)	EXIST. TRANS./INT. APP./FUT. PRIM.	19'	TO BE RELOCATED
14	TREE	1597'	EXIST. TRANS./INT. PRIM./FUT. PRIM.	8'	TO BE TRIMMED OR REMOVED
15	TREE	1625'	EXIST. TRANS./INT. PRIM./FUT. PRIM.	36'	TO BE TRIMMED OR REMOVED

NOTE: 1. (N) FIFTEEN FEET ADDED TO ELEVATION TO DETERMINE CLEARANCE.

1. TERRAIN PROFILE REPRESENTS THE HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGTH OF THE FUTURE PART 77 APPROACH SURFACE.
2. NUMBERED ITEMS (1) ARE EXISTING PART 77 OBSTRUCTIONS TAKEN FROM NOS OC 5690 DATED 01/94.

RUNWAY DATA

	RUNWAY 12/30		RUNWAY 03/21	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1 MILE / 1 MILE	3/4 MILE / 3/4 MILE	V/V	1 MILE / 1 MILE
PART 77 APPROACH SURFACES	34:1/34:1	34:1/34:1	20:1/20:1	20:1/20:1
RUNWAY WIDTH AND LENGTH	100' x 6000'	100' x 7100'	60' X 4047'	60' X 3592'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	25 (S)	60 (D)	15 (S)	15 (S)
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	NON-PRECISION	NON-PRECISION/NON-PRECISION	BASIC	NPI
EFFECTIVE RUNWAY GRADIENT %	.27	.15	1.04	1.0
MAXIMUM GRADE WITHIN RUNWAY LENGTH	.36%	.36%	1.32%	1.32%
RUNWAY LINE-OF-SIGHT (R/W Visibility Zone)	Criteria NOT met	Criteria met (1)	Criteria met	Criteria met
ALL WEATHER WIND COVERAGE (16 KNOT, 10.5 KNOT)	99.54%/94.06%	99.54%/94.06%	not applicable/95.49%	not applicable/95.49%
VISUAL APPROACH AIDS	VASI/PAPI	PAPI/REILS/MALS	NONE	PAPI/REILS
INSTRUMENT APPROACH AIDS	[illegible]	GPS/GPS/LOCALIZER	NONE	GPS
AIRPORT REFERENCE CODE (ARC)	C-II	C-II	B-I (Small A/C only)	B-I (Small A/C only)
CRITICAL AIRCRAFT	GRUMMAN GULFSTREAM II	GRUMMAN GULFSTREAM II	Mooney (Typ.)	Mooney (Typ.)
RUNWAY SAFETY AREA	500' X 8000'	500' X 9100'	120' X 4527'	120' X 4072'
RUNWAY OBJECT FREE AREA	800' X 8000'	800' X 9100'	250' X 4527'	250' X 4072'
RUNWAY OBSTACLE FREE ZONE (No OFZ object penetrations)	400' X 6400'	400' X 7500'	250' X 4447'	250' X 3992'
TOUCHDOWN ZONE ELEVATIONS (TDZE)	1583.9'/1589.0	1583.9'/1589.0	1607.9'/1616.7'	1607.9'/1616.7'
THRESHOLD SITING CRITERIA	No threshold siting surface object penetrations			

NOTES: (1) Runway Visibility Zone deficiency is to be corrected with R/W 03 threshold relocation

AIRPORT DATA

ITEM	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	1616.7'	1616.7'
AIRPORT REFERENCE POINT (ARP)	LAT. 29° 58' 36.246" LON. 99° 05' 08.447"	LAT. 29° 58' 32.187" LON. 99° 05' 04.283"
MEAN MAX. TEMP. HOTTEST MONTH	95°F	95°F
AIRPORT MAGNETIC VARIATION & DATE	6° 34.1' (7-20-00)	6° 34.1' (7-20-00)
NPIAS SERVICE LEVEL	GA	GA
TAXIWAY LIGHTING	NONE	MITL
TAXIWAY STRIPING	CENTERLINE	CENTERLINE
AIRPORT & TERMINAL NAVAIDS	VOR/DME,RNAV,NDB,GPS,LOC	VOR/DME,RNAV,NDB,GPS,LOC
UNICOM (MHz)	122.7	122.7
CONTROL TOWER (MHz)	NONE	NONE
AIRPORT PROPERTY (ACRES)	APPROX. 504	APPROX. 585.9

LAYOUT PLAN LEGEND

ITEM	EXISTING	FUTURE
BUILDING RESTRICTION LINE	BRL	BRL
AIRPORT PROPERTY LINE		
FENCE		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDINGS		
AIRFIELD PAVEMENT		
FUEL STORAGE		
BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
PRECISION APPROACH PATH INDICATOR(PAPI)		
RUNWAY END IDENTIFIER LIGHTS(REILS)		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (ROFA)		
AUTOMATED WEATHER OBSERVATION STATION		
HOLDLINES & SIGNS		

NOTES:
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2. TOPOGRAPHICAL CONTOURS TAKEN FROM USGS QUADRANGLE MAPS.
3. RUNWAY BEARINGS RECKONED CLOCKWISE FROM TRUE NORTH.
4. FUTURE DEVELOPMENT OF AIRPORT PROPERTY FOR NON-AVIATION USES WILL REQUIRE PRIOR APPROVAL BY THE FAA AND TXDOT AVIATION DIVISION.
5. "INITIAL" REFERS TO INTERMEDIATE DEVELOPMENT PROJECTS IMPLEMENTED PRIOR TO THE COMPLETION OF THE 20 YEAR DEVELOPMENT PLAN.

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY

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DIRECTOR, AVIATION DIVISION — DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE — DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

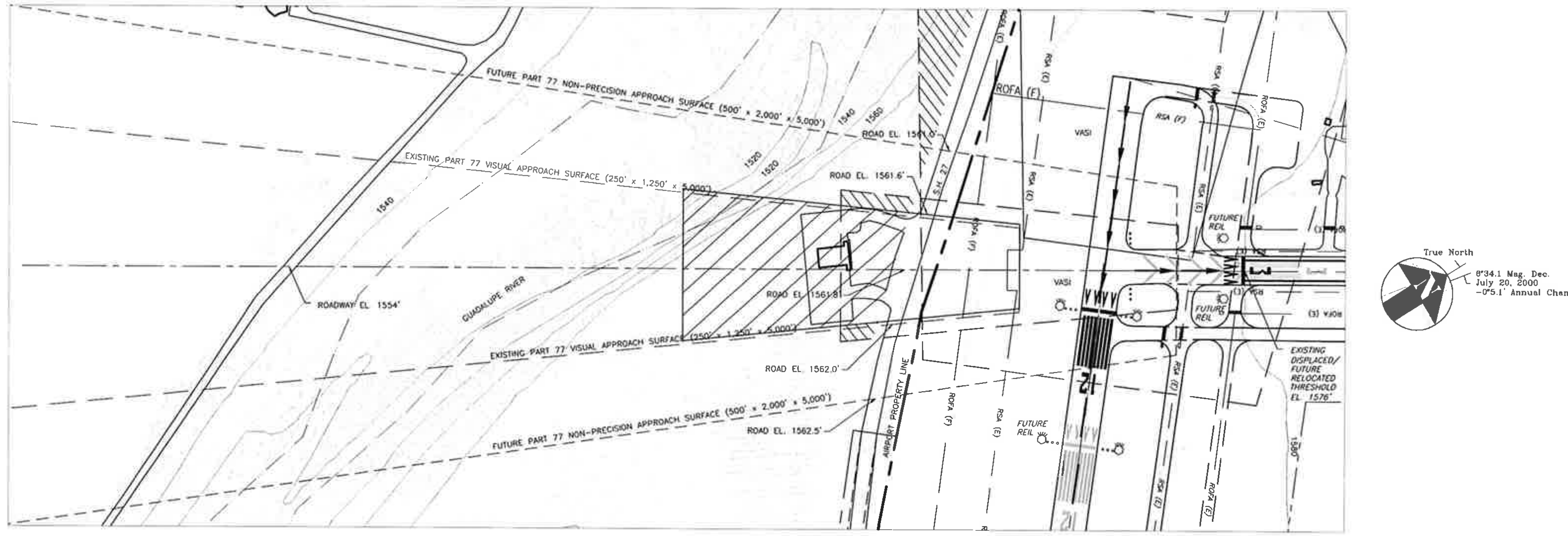
DESIGNED BY: BDC — DATE: 07/09/02
DRAWN BY — DATE
CHECKED BY — DATE

RUNWAY 30 INNER APPROACH
PLAN & PROFILE
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

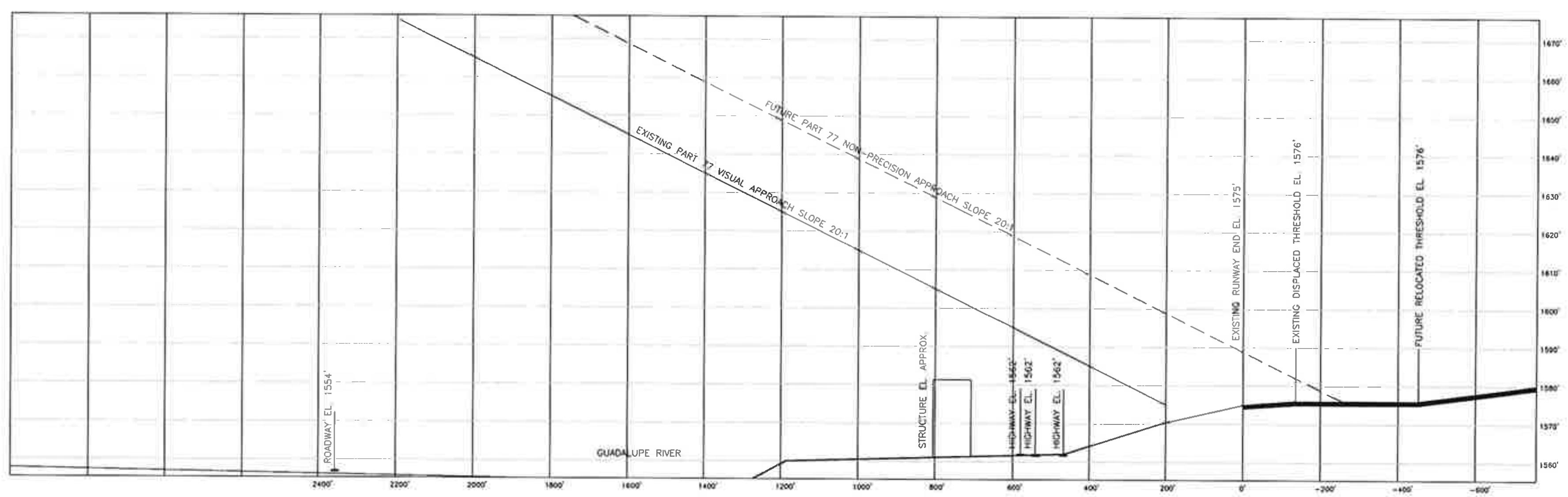
SHEET 6 OF 11

Figure E6 Inner Approach Drawing/Runway 30 Plan & Profile



RUNWAY 03 PLAN

SCALE 1" = 200'



RUNWAY 03 PROFILE

HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'

PART 77 OBSTRUCTIONS

NO.	ITEM	ELEVATION	SURFACE	PENETRATION	DISPOSITION
	NONE IDENTIFIED				

RUNWAY DATA

	RUNWAY 12/30		RUNWAY 03/21	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1 MILE / 1 MILE	3/4 MILE / 3/4 MILE	V/V	1 MILE / 1 MILE
PART 77 APPROACH SURFACES	34:1/34:1	34:1/34:1	20:1/20:1	20:1/20:1
RUNWAY WIDTH AND LENGTH	100' X 6000'	100' X 7100'	60' X 4047'	60' X 3592'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	35 (S)	60 (D)	15 (S)	15 (S)
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	NON-PRECISION	NON-PRECISION/NON-PRECISION	BASIC	NPI
EFFECTIVE RUNWAY GRADIENT %	.27	.15	1.04	1.0
MAXIMUM GRADE WITHIN RUNWAY LENGTH	.36%	.36%	1.32%	1.32%
RUNWAY LINE-OF-SIGHT (R/W Visibility Zone)	Criteria NOT met	Criteria met (1)	Criteria met	Criteria met
ALL WEATHER WIND COVERAGE (16 KNOT, 10.5 KNOT)	99.54%/94.06%	99.54%/94.06%	not applicable/93.49%	not applicable/93.49%
VISUAL APPROACH AIDS	VASI/PAPI	PAPI,REILS,MALS	NONE	PAPI/REILS
INSTRUMENT APPROACH AIDS	[illegible]	GPS/GPS,LOCALIZER	NONE	GPS
AIRPORT REFERENCE CODE (ARC)	C-II	C-II	B-I (Small A/C only)	B-I (Small A/C only)
CRITICAL AIRCRAFT	GRUMMAN GULFSTREAM II	GRUMMAN GULFSTREAM II	Mooney (Typ.)	Mooney (Typ.)
RUNWAY SAFETY AREA	500' X 8000'	500' X 9100'	120' X 4527'	120' X 4072'
RUNWAY OBJECT FREE AREA	800' X 8000'	800' X 9100'	250' X 4527'	250' X 4072'
RUNWAY OBSTACLE FREE ZONE (No OFZ object penetrations)	400' X 6400'	400' X 7500'	250' X 4447'	250' X 3992'
TOUCHDOWN ZONE ELEVATIONS (TDZE)	1583.9'/1589.0	1583.9'/1589.0	1607.5'/1616.7'	1607.6'/1616.7'
THRESHOLD SITING CRITERIA	No threshold siting surface object penetrations			

NOTES: (1) Runway Visibility Zone deficiency is to be corrected with R/W 03 threshold relocation.

AIRPORT DATA

ITEM	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	1616.7'	1616.7'
AIRPORT REFERENCE POINT (ARP)	LAT. 29° 58' 36.246" LON. 99° 05' 08.447"	LAT. 29° 58' 32.387" LON. 99° 05' 04.283"
MEAN MAX. TEMP. HOTTEST MONTH	95°F	95°F
AIRPORT MAGNETIC VARIATION & DATE	8° 34.1' (7-20-00)	8° 34.1' (7-20-00)
NPIAS SERVICE LEVEL	GA	GA
TAXIWAY LIGHTING	NONE	MITL
TAXIWAY STRIPING	CENTERLINE	CENTERLINE
AIRPORT & TERMINAL NAVAIDS	VOR/DME,RNAV,NDB,GPS,LOC	VOR/DME,RNAV,NDB,GPS,LOC
UNICOM (MHz)	122.7	122.7
CONTROL TOWER (MHz)	NONE	NONE
AIRPORT PROPERTY (ACRES)	APPROX. 504	APPROX. 585.9

LAYOUT PLAN LEGEND

ITEM	EXISTING	FUTURE
BUILDING RESTRICTION LINE	BRL	BRL
AIRPORT PROPERTY LINE		
FENCE		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDINGS		
AIRFIELD PAVEMENT		
FUEL STORAGE		
BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
PRECISION APPROACH PATH INDICATOR(PAPI)		
RUNWAY END IDENTIFIER LIGHTS(REILS)		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (ROFA)		
AUTOMATED WEATHER OBSERVATION STATION		
HOLDLINES & SIGNS		

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3. RUNWAY BEARINGS RECKONED CLOCKWISE FROM TRUE NORTH.
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NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION
AVIATION DIVISION

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DIRECTOR, AVIATION DIVISION DATE

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TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

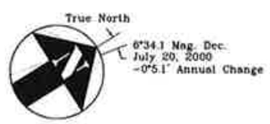
DESIGNED BY BDC DATE 07/09/02
DRAWN BY DATE
CHECKED BY DATE

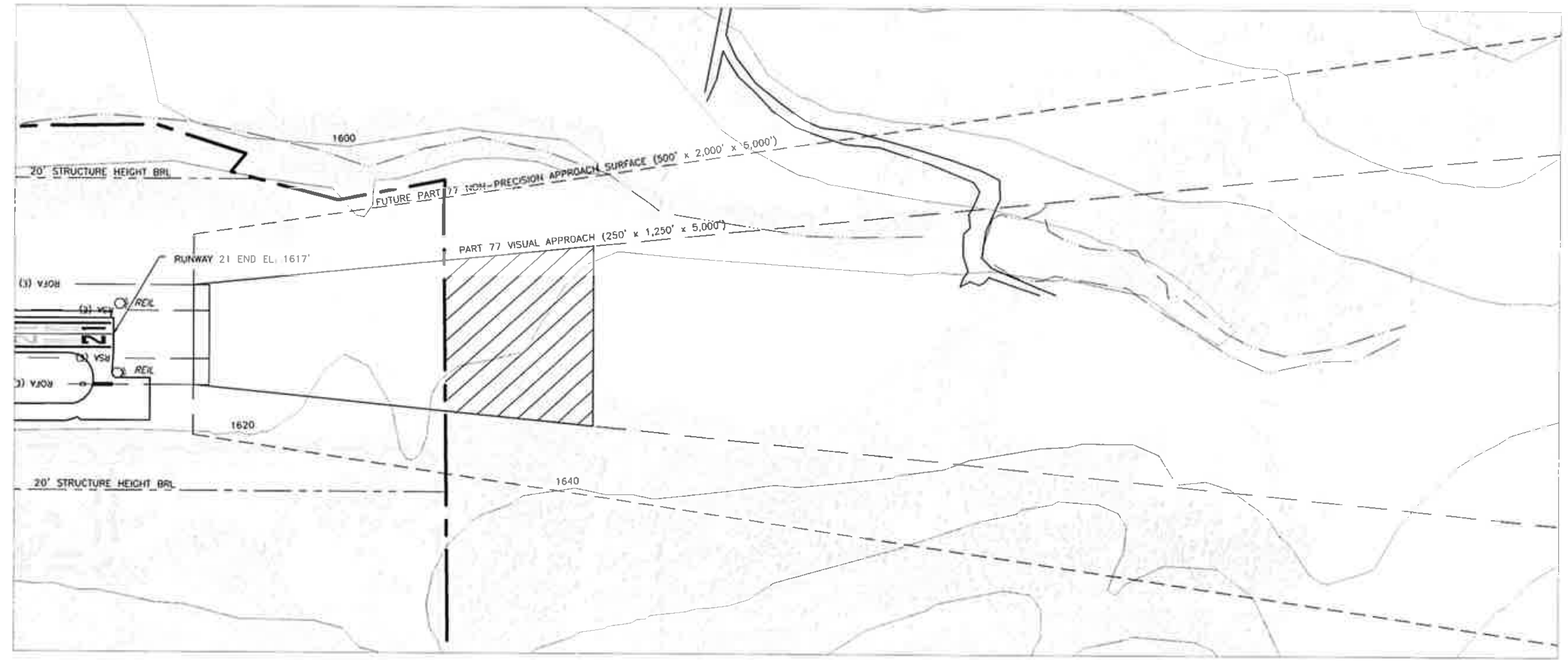
RUNWAY 03 INNER APPROACH
PLAN & PROFILE
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

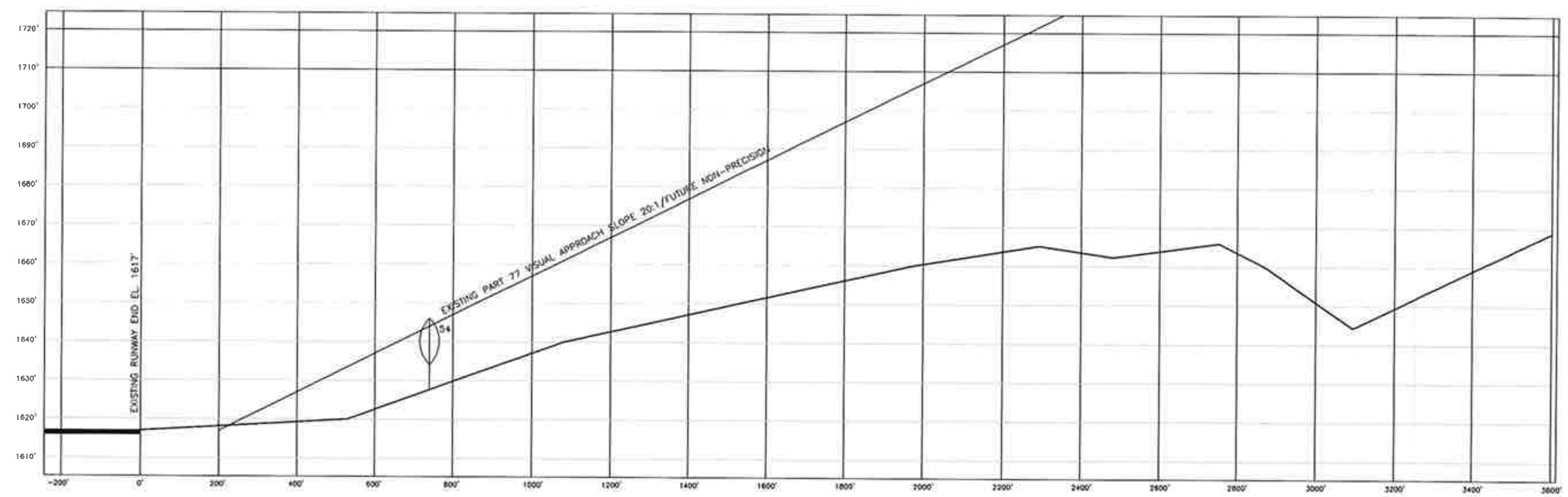
SHEET 7 OF 11

Figure E7 Inner Approach Drawing/Runway 03 Plan & Profile





RUNWAY 21 PLAN
SCALE 1" = 200'



RUNWAY 21 PROFILE
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'

PART 77 OBSTRUCTIONS

NO.	ITEM	ELEVATION	SURFACE	PENETRATION	DISPOSITION
54	TREE	1646'	APPROACH	13'	TO BE TRIMMED OR REMOVED

1. TERRAIN PROFILE REPRESENTS THE HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGTH OF THE FUTURE PART 77 APPROACH SURFACE.
2. NUMBERED ITEMS (1) ARE EXISTING PART 77 OBSTRUCTIONS TAKEN FROM NOS OC 5690 DATED 01/94.

RUNWAY DATA

	RUNWAY 12/30		RUNWAY 03/21	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1 MILE / 1 MILE	3/4 MILE / 3/4 MILE	V/V	1 MILE / 1 MILE
PART 77 APPROACH SURFACES	34:1/34:1	34:1/34:1	20:1/20:1	20:1/20:1
RUNWAY WIDTH AND LENGTH	100' X 6000'	100' X 7100'	60' X 4047'	60' X 3592'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	25 (S)	60 (D)	15 (S)	15 (S)
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	NON-PRECISION	NON-PRECISION/NON-PRECISION	BASIC	NPI
EFFECTIVE RUNWAY GRADIENT %	.27	.15	1.04	1.0
MAXIMUM GRADE WITHIN RUNWAY LENGTH	.36%	.36%	1.32%	1.32%
RUNWAY LINE-OF-SIGHT (R/W Visibility Zone)	Criteria NOT met	Criteria met (1)	Criteria met	Criteria met
ALL WEATHER WIND COVERAGE (15 KNOT, 10.5 KNOT)	99.54%/94.06%	99.54%/94.06%	not applicable/95.45%	not applicable/95.45%
VISUAL APPROACH AIDS	VASI/PAPI	PAPI,REILS,MALS	NONE	PAPI/REILS
INSTRUMENT APPROACH AIDS	VOR-DME, Right OR GPS/LOCALIZER, NDB	GPS/GPS,LOCALIZER	NONE	GPS
AIRPORT REFERENCE CODE (ARC)	C-II	C-II	B-I (Small A/C only)	B-I (Small A/C only)
CRITICAL AIRCRAFT	GRUMMAN GULFSTREAM II	GRUMMAN GULFSTREAM II	Mooney (Typ.)	Mooney (Typ.)
RUNWAY SAFETY AREA	500' X 8000'	500' X 9100'	120' X 4537'	120' X 4072'
RUNWAY OBJECT FREE AREA	800' X 8000'	800' X 9100'	250' X 4537'	250' X 4072'
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THRESHOLD SITING CRITERIA	No threshold siting surface object penetrations			

NOTES: (1) Runway Visibility Zone deficiency is to be corrected with R/W 03 threshold relocation.

AIRPORT DATA

ITEM	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	1616.7'	1616.7'
AIRPORT REFERENCE POINT (ARP)	LAT. 29° 58' 36.246" LON. 99° 05' 08.447"	LAT. 29° 58' 32.387" LON. 99° 05' 04.283"
MEAN MAX. TEMP. HOTTEST MONTH	95°F	95°F
AIRPORT MAGNETIC VARIATION & DATE	6° 34.1' (7-20-00)	6° 34.1' (7-20-00)
NPIAS SERVICE LEVEL	GA	GA
TAXIWAY LIGHTING	NONE	MITL
TAXIWAY STRIPING	CENTERLINE	CENTERLINE
AIRPORT & TERMINAL NAVAIDS	VOR/DME,RWY/NDB/SPLUX	VOR/DME,RWY/NDB/SPLUX
UNICOM (MHz)	122.7	122.7
CONTROL TOWER (MHz)	NONE	NONE
AIRPORT PROPERTY (ACRES)	APPROX. 504	APPROX. 585.9

LAYOUT PLAN LEGEND

ITEM	EXISTING	FUTURE
BUILDING RESTRICTION LINE	BRL	BRL
AIRPORT PROPERTY LINE		
FENCE		
AVIATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDINGS		
AIRFIELD PAVEMENT		
FUEL STORAGE		
BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
PRECISION APPROACH PATH INDICATOR(PAPI)		
RUNWAY END IDENTIFIER LIGHTS(REILS)		
RUNWAY SAFETY AREA (RSA)		
RUNWAY OBJECT FREE AREA (ROFA)		
AUTOMATED WEATHER OBSERVATION STATION		
HOLDLINES & SIGNS		

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NO.	REVISIONS	BY	CHK'D	DATE

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PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

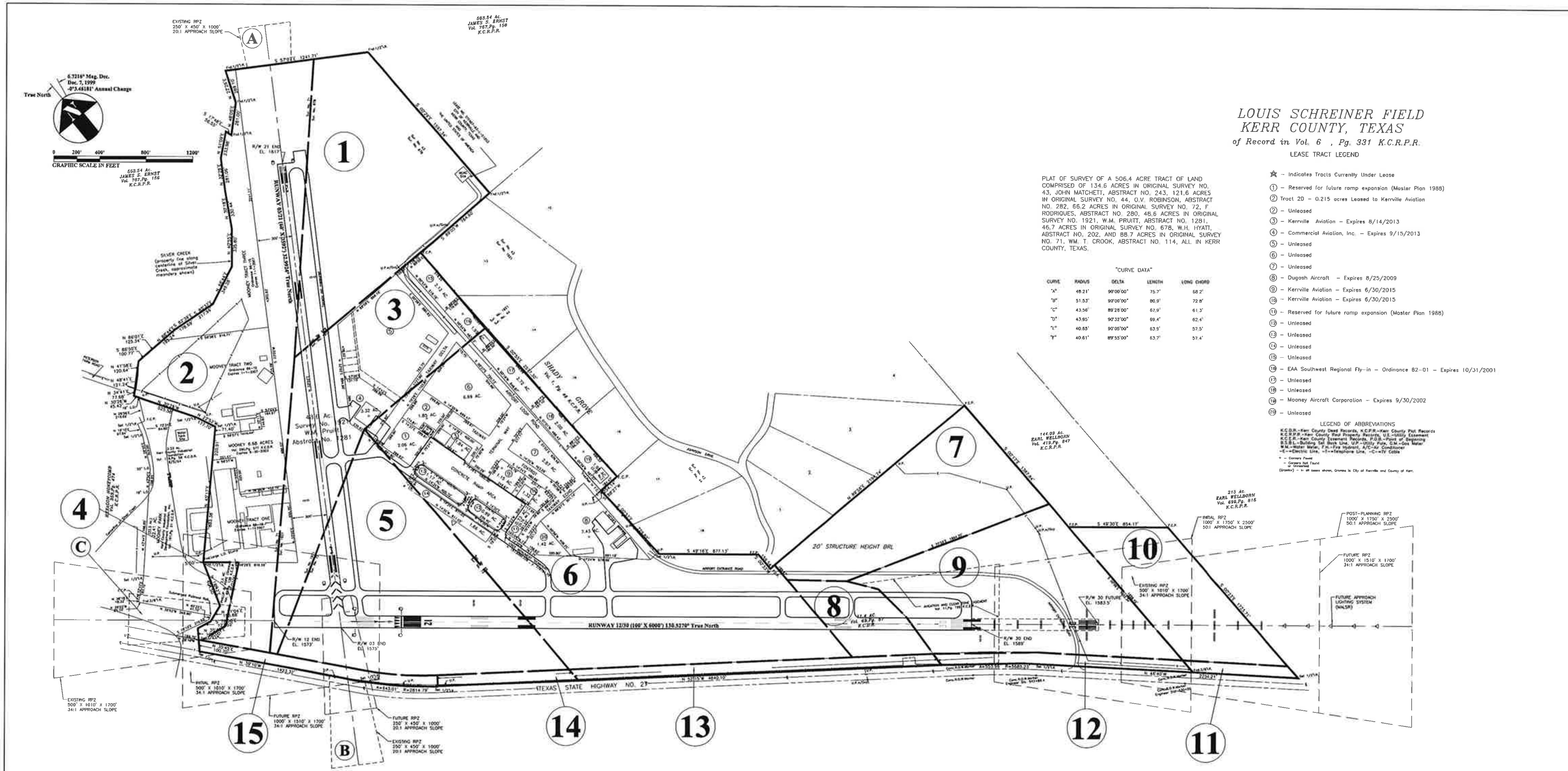
DESIGNED BY BDC — DATE 07/09/02
DRAWN BY — DATE
CHECKED BY — DATE

RUNWAY 21 INNER APPROACH
PLAN & PROFILE
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

SHEET 8 OF 11

Figure E8 Inner Approach Drawing/Runway 21 Plan & Profile



"CURVE DATA"

CURVE	RADIUS	DELTA	LENGTH	LONG CHORD
"A"	48.21'	90°00'00"	75.7'	68.2'
"B"	51.53'	90°00'00"	80.9'	72.8'
"C"	43.56'	89°28'00"	67.9'	61.3'
"D"	43.95'	90°32'00"	69.4'	62.4'
"E"	40.65'	90°05'00"	63.9'	57.5'
"F"	40.61'	89°55'00"	63.7'	57.4'

LAND PARCEL DATA

Tract	Acres	Title	Grantor/Remarks	County Record Vol./Page	Date	Funding
1	45.7	FEE TITLE	Ingenhuuett, et. al.	SURVEY NO. 678 W.H. HYATT ABSTRACT NO. 202, VOL.68, PG.302	8/16/41	
2	88.7	FEE TITLE	Ingenhuuell, et. al.	SURVEY NO. 71 WM. T. CROOK ABSTRACT NO. 114, VOL.68, PG.302	8/16/41	
3	48.6	FEE TITLE	Ingenhuuell, et. al.	SURVEY NO. 1921 W.M. PRUITT ABSTRACT NO. 1281, VOL.68, PG.302	8/16/41	
4	2.5	FEE TITLE	Philip Pope	VOL. 69, PG. 138 KCDR	12/23/41	
5	66.2	FEE TITLE	Ingenhuuell, et. al.	SURVEY NO. 72 F. RODRIQUEZ ABSTRACT NO. 280, VOL.68, PG.302	8/16/41	
6	121.6	FEE TITLE	Medora Goss, et. al.	SURVEY NO. 44 O.V. ROBINSON ABSTRACT NO. 282, VOL.69, PG.303	1/31/42	
7	39.5	FEE TITLE	J. T. Williams	SURVEY NO. 43 J. MATCHETT ABSTRACT NO. 243, VOL.257, PG.608	2/15/82	
8	11.4	FEE TITLE	J. T. Williams	VOL. 69 PG. 57	12/30/41	
9	45.05	FEE TITLE	J. T. Williams	VOL. 257, PG. 612	2/15/82	
10	23.22	FEE TITLE	Earl H. Wellborn	VOL. 581, PG. 764	2/15/91	
11	2.04	FEE TITLE	Earl H. Wellborn	VOL. 581, PG. 764	2/15/91	
12	4.92	FEE TITLE	J. T. Williams	VOL. 257, PG. 604	2/17/82	
13	7.22	FEE TITLE	Southern Pacific	VOL. 161, PG. 396	12/30/72	
14	± 2.4	FEE TITLE	Southern Pacific	VOL. 161, PG. 396	12/30/72	
15	± 4.7	FEE TITLE	Southern Pacific	VOL. 161, PG. 396	12/30/72	
A	± 3.3	EASEMENT	S. Frank & F. Ball	VOL. 5, PG. 626	7/29/69	
B	± 6.5	EASEMENT	Southern Pacific	VOL. 5, PG. 647	8/20/69	
C	± 5.9	EASEMENT	KC Ind. Found.	VOL. 5, PG. 597	7/21/69	

LAYOUT PLAN LEGEND

ITEM	EXISTING	FUTURE
AIRPORT PROPERTY BOUNDARY		
AIRPORT PROPERTY PARCELS		
RUNWAY PROTECTION ZONE		

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION AVIATION DIVISION

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SIGNATURE DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

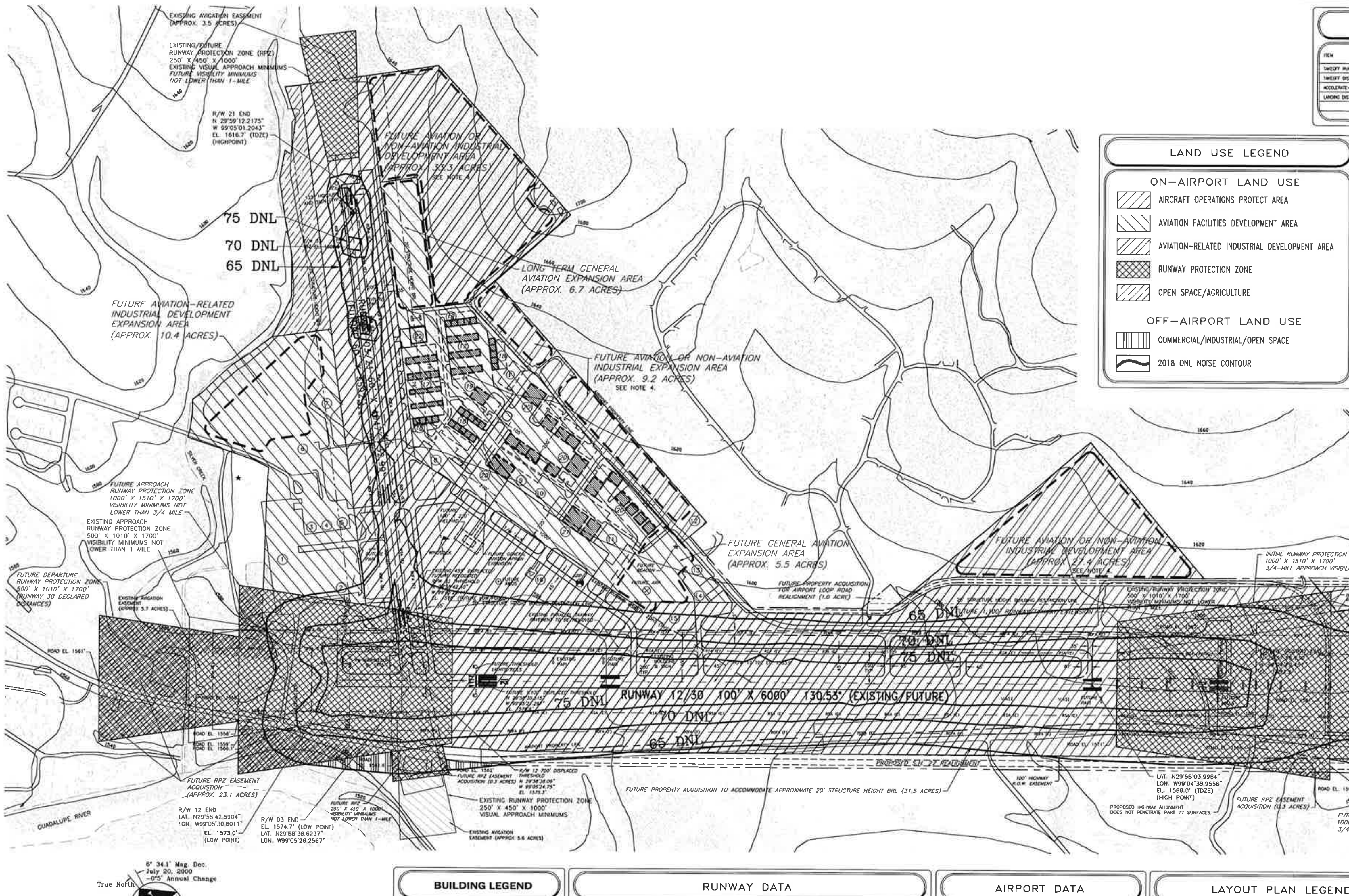
DESIGNED BY BDC DATE 07/09/02
DRAWN BY DATE
CHECKED BY DATE

EXHIBIT 'A' AIRPORT PROPERTY MAP
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

SHEET 10 OF 11

Figure E10 Airport Property Map



LAND USE LEGEND

ON-AIRPORT LAND USE

- AIRCRAFT OPERATIONS PROTECT AREA
- AVIATION FACILITIES DEVELOPMENT AREA
- AVIATION-RELATED INDUSTRIAL DEVELOPMENT AREA
- RUNWAY PROTECTION ZONE
- OPEN SPACE/AGRICULTURE

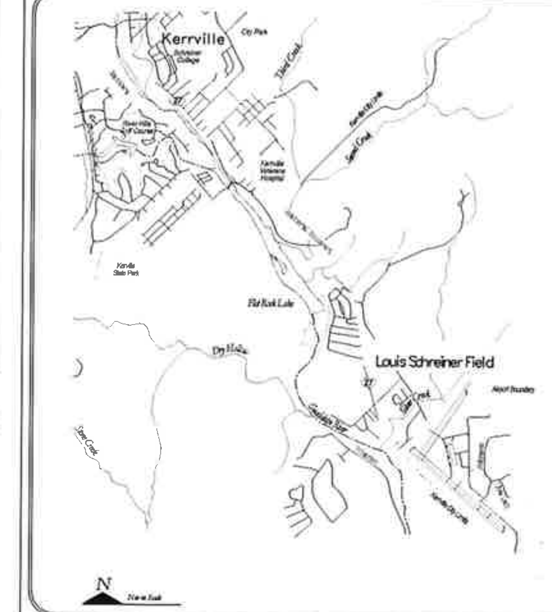
OFF-AIRPORT LAND USE

- COMMERCIAL/INDUSTRIAL/OPEN SPACE
- 2018 DNL NOISE CONTOUR

DECLARED DISTANCES

ITEM	RUNWAY 12 EXISTING/FUTURE	RUNWAY 30 EXISTING/FUTURE	RUNWAY 03 EXISTING/FUTURE	RUNWAY 21 EXISTING/FUTURE
TAKEOFF RUN AVAILABLE (TORA)	6000'/7100'	6000'/7100'	4047'/3592'	4047'/3592'
TAKEOFF DISTANCE AVAILABLE (TODA)	6000'/7100'	6000'/7100'	4047'/3592'	4047'/3592'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	6000'/7100'	5300'/6000'	4047'/3592'	4047'/3592'
LANDING DISTANCE AVAILABLE (LDA)	5300'/6000'	5300'/6000'	3592'/3592'	4047'/3592'

VICINITY MAP



NON-STANDARD CONDITIONS

ITEM	AIRPLANE DESIGN GROUP EXISTING/FUTURE	STANDARD EXISTING/FUTURE	NON-STANDARD CONDITION EXISTING/FUTURE	REMARKS
RUNWAY 12 SAFETY AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	RESOLVED W/ 700' R/W 12 THRESHOLD DISPLACEMENT AND IMPLEMENTATION OF DECLARED DISTANCES CRITERIA
RUNWAY 12 OBJECT FREE AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	TO BE RESOLVED W/ FUTURE 1,100' R/W 12 THRESHOLD DISPLACEMENT AND REVISION OF DECLARED DISTANCES CRITERIA
RUNWAY 30 SAFETY AREA LENGTH	C-II/C-II	1000'/1000'	625'/NONE	TO BE RESOLVED W/ RELOCATION OF AIRPORT ENTRANCE ROAD
RUNWAY 30 OBJECT FREE AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	TO BE RESOLVED W/ RELOCATION OF AIRPORT ENTRANCE ROAD AND REALIGNMENT OF S.H. 27, HOWEVER, S.H. 27 IS CONSIDERED A PERMANENT OBSTRUCTION TO THE RUNWAY 30 OFA DUE TO COST AND FEASIBILITY ASSOCIATED WITH RELOCATION

BUILDING LEGEND

#	DESCRIPTION	ELEVATION
1.	MOONEY AIRCRAFT MANUFACTURING	1613.24'
2.	MOONEY AIRCRAFT MANUFACTURING	1615.11'
3.	MOONEY AIRCRAFT MANUFACTURING	1604.56'
4.	MOONEY AIRCRAFT MANUFACTURING	1606.43'
5.	MOONEY AIRCRAFT MANUFACTURING	1603.23'
6.	MOONEY AIRCRAFT MANUFACTURING	1618.45'
7.	MOONEY AIRCRAFT MANUFACTURING	1622.35'
8.	COMMERCIAL AVIATION INC.	1630.74'
9.	KERRVILLE AVIATION (AIRCRAFT STORAGE)	1621.28'
10.	KERRVILLE AVIATION	1620.20'
11.	KERRVILLE AVIATION MAINTENANCE HANGAR	1617.06'
12.	MOONEY AIRCRAFT MANUFACTURING	1623.64'
13.	DUGOSH AIRCRAFT SERVICE	1628.45'
14.	DUGOSH AIRCRAFT SERVICE	1611.81'
15.	DUGOSH AIRCRAFT SERVICE	1610.73'
16.	HELIPAD (to be relocated)	
17.	FUTURE T-HANGAR DEVELOPMENT	
18.	FUTURE EXECUTIVE HANGAR DEVELOPMENT	
19.	FUTURE LARGE HANGAR DEVELOPMENT	
20.	FUTURE CORPORATE HANGAR DEVELOPMENT	
21.	FUTURE FBO/MAINTENANCE HANGAR DEV.	
22.	EXECUTIVE HANGAR	1635' est.

RUNWAY DATA

	RUNWAY 12/30		RUNWAY 03/21	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1 MILE / 1 MILE	3/4 MILE / 3/4 MILE	V/V	1 MILE / 1 MILE
PART 77 APPROACH SURFACES	34:1/34:1	34:1/34:1	20:1/20:1	20:1/20:1
RUNWAY WIDTH AND LENGTH	100' X 6000'	100' X 7100'	60' X 4047'	60' X 3592'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	25 (S)	60 (D)	15 (S)	15 (S)
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	NON-PRECISION	NON-PRECISION/NON-PRECISION	BASIC	NPI
EFFECTIVE RUNWAY GRADIENT %	.27	.15	1.04	1.0
MAXIMUM GRADE WITHIN RUNWAY LENGTH	.36%	.36%	1.32%	1.32%
RUNWAY LINE-OF-SIGHT (R/W Visibility Zone)	Criteria NOT met	Criteria met (1)	Criteria met	Criteria met
ALL WEATHER WIND COVERAGE (16 KNOT, 10.5 KNOT)	99.54%/94.06%	99.54%/94.06%	not applicable/93.49%	not applicable/93.49%
VISUAL APPROACH AIDS	VASI/PAPI	PAPI/REILS/MALS	NONE	PAPI/REILS
INSTRUMENT APPROACH AIDS	VOR-DME, NDB OR GPS/LOCALIZER, NDB	GPS/GPS/LOCALIZER	NONE	GPS
AIRPORT REFERENCE CODE (ARC)	C-II	C-II	B-I (Small A/C only)	B-I (Small A/C only)
CRITICAL AIRCRAFT	GRUMMAN GULFSTREAM II	GRUMMAN GULFSTREAM II	Mooney (Typ.)	Mooney (Typ.)
RUNWAY SAFETY AREA	500' X 8000'	500' X 9100'	120' X 4527'	120' X 4072'
RUNWAY OBJECT FREE AREA	800' X 8000'	800' X 9100'	250' X 4527'	250' X 4072'
RUNWAY OBSTACLE FREE ZONE (No OFZ object penetrations)	400' X 6400'	400' X 7500'	250' X 4447'	250' X 3992'
TOUCHDOWN ZONE ELEVATIONS (TDZE)	1583.9'/1589.0	1583.9'/1589.0	1607.9'/1616.7'	1607.9'/1616.7'
THRESHOLD SITING CRITERIA	No threshold siting surface object penetrations			

NOTES: (1) Runway Visibility Zone deficiency is to be corrected with R/W 03 threshold relocation.

AIRPORT DATA

ITEM	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	1616.7'	1616.7'
AIRPORT REFERENCE POINT (ARP)	LAT. 29° 58' 36.246" LON. 99° 05' 08.447"	LAT. 29° 58' 32.387" LON. 99° 05' 04.283"
MEAN MAX. TEMP. HOTTEST MONTH	95F	95F
AIRPORT MAGNETIC VARIATION & DATE	6° 34.1' (7-20-00)	6° 34.1' (7-20-00)
NPIAS SERVICE LEVEL	GA	GA
TAXIWAY LIGHTING	NONE	MITL
TAXIWAY STRIPING	CENTERLINE	CENTERLINE
AIRPORT & TERMINAL NAVAIDS	VOR/DME,BEACON,NDB,GPS,LOC	VOR/DME,BEACON,NDB,GPS,LOC
UNICOM (MHz)	122.7	122.7
CONTROL TOWER (MHz)	NONE	NONE
AIRPORT PROPERTY (ACRES)	APPROX. 504	APPROX. 585.9

LAYOUT PLAN LEGEND

ITEM	EXISTING	FUTURE
BUILDING RESTRICTION LINE	BRL	BRL
AIRPORT PROPERTY LINE	P	P.L.
FENCE		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDINGS		
AIRFIELD PAVEMENT		
FUEL STORAGE		
BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
PRECISION APPROACH PATH INDICATOR(PAPI)		
RUNWAY END IDENTIFIER LIGHTS(REILS)		
RUNWAY SAFETY AREA (RSA)	RW-RS	RW-RS
RUNWAY OBJECT FREE AREA (ROFA)	OFA-RW	OFA-RW
AUTOMATED WEATHER OBSERVATION STATION		

NOTES:
1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. TOPOGRAPHICAL CONTOURS TAKEN FROM USGS QUADRANGLE MAPS.
3. RUNWAY BEARINGS RECKONED CLOCKWISE FROM TRUE NORTH.
4. FUTURE DEVELOPMENT OF AIRPORT PROPERTY FOR NON-AVIATION USES WILL REQUIRE PRIOR APPROVAL BY THE FAA AND TXDOT AVIATION DIVISION.
5. "INITIAL" REFERS TO INTERMEDIATE DEVELOPMENT PROJECTS IMPLEMENTED PRIOR TO THE COMPLETION OF THE 20 YEAR DEVELOPMENT PLAN.

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY.

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE CONDITIONS/COMMENTS IN LETTER DATED:

DIRECTOR, AVIATION DIVISION DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

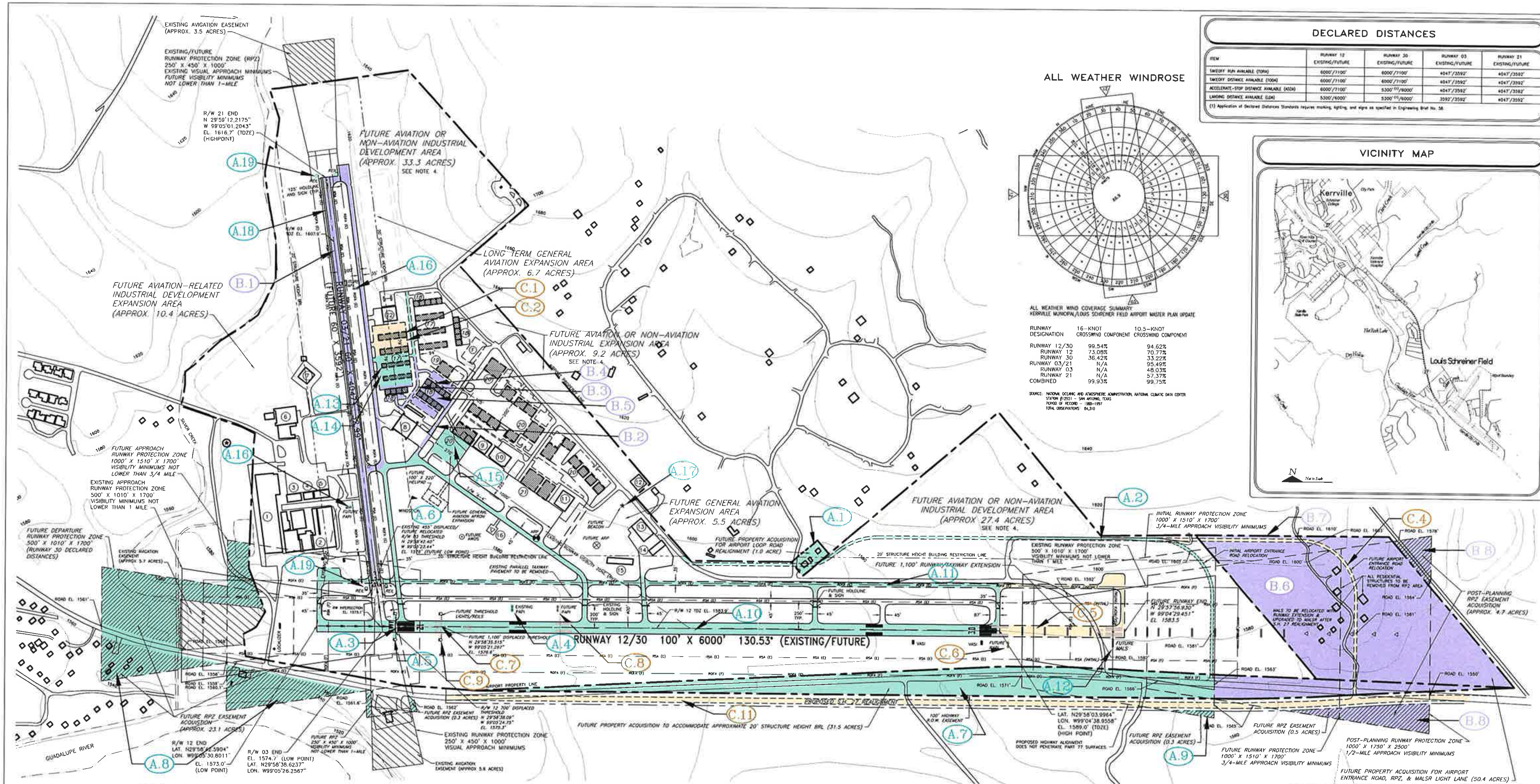
DESIGNED BY BDC DATE 07/09/02
DRAWN BY DATE
CHECKED BY DATE

LAND USE DRAWING
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

SHEET 11 OF 11

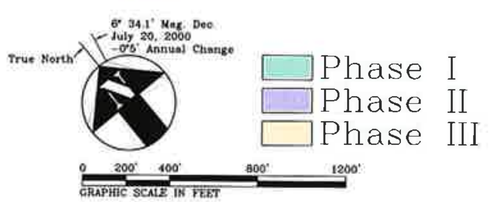
Figure E11 Land Use Drawing



DECLARED DISTANCES

ITEM	RUNWAY 12 EXISTING/FUTURE	RUNWAY 30 EXISTING/FUTURE	RUNWAY 03 EXISTING/FUTURE	RUNWAY 21 EXISTING/FUTURE
TAKEOFF RUN AVAILABLE (TORA)	6000'/7100'	6000'/7100'	4047'/3592'	4047'/3592'
TAKEOFF DISTANCE AVAILABLE (TODA)	6000'/7100'	6000'/7100'	4047'/3592'	4047'/3592'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	6000'/7100'	5300' (1)/6000'	4047'/3592'	4047'/3592'
LANDING DISTANCE AVAILABLE (LDA)	5300'/6000'	5300' (1)/6000'	3592'/3592'	4047'/3592'

(1) Application of Declared Distances Standards requires marking, lighting, and signs as specified in Engineering Brief No. 38.



NON-STANDARD CONDITIONS

ITEM	AIRPLANE DESIGN GROUP EXISTING/FUTURE	STANDARD EXISTING/FUTURE	NON-STANDARD CONDITION EXISTING/FUTURE	REMARKS
RUNWAY 12 SAFETY AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	RESOLVED W/ 700' R/W 12 THRESHOLD DISPLACEMENT AND IMPLEMENTATION OF DECLARED DISTANCES CRITERIA
RUNWAY 12 OBJECT FREE AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	TO BE RESOLVED W/ FUTURE 1,100' R/W 12 THRESHOLD DISPLACEMENT AND REVISION OF DECLARED DISTANCES CRITERIA
RUNWAY 30 SAFETY AREA LENGTH	C-II/C-II	1000'/1000'	625'/NONE	TO BE RESOLVED W/ RELOCATION OF AIRPORT ENTRANCE ROAD
RUNWAY 30 OBJECT FREE AREA LENGTH	C-II/C-II	1000'/1000'	300'/NONE	TO BE RESOLVED W/ RELOCATION OF AIRPORT ENTRANCE ROAD AND REALIGNMENT OF S.H. 27. HOWEVER, S.H. 27 IS CONSIDERED A PERMANENT OBSTRUCTION TO THE RUNWAY 30 OFA DUE TO COST AND FEASIBILITY ASSOCIATED WITH RELOCATION.

BUILDING LEGEND

#	DESCRIPTION	ELEVATION
1.	MOONEY AIRCRAFT MANUFACTURING	1619.24'
2.	MOONEY AIRCRAFT MANUFACTURING	1615.11'
3.	MOONEY AIRCRAFT MANUFACTURING	1604.56'
4.	MOONEY AIRCRAFT MANUFACTURING	1606.43'
5.	MOONEY AIRCRAFT MANUFACTURING	1603.33'
6.	MOONEY AIRCRAFT MANUFACTURING	1616.45'
7.	MOONEY AIRCRAFT MANUFACTURING	1622.35'
8.	COMMERCIAL AVIATION INC.	1630.74'
9.	KERRVILLE AVIATION (AIRCRAFT STORAGE)	1631.28'
10.	KERRVILLE AVIATION	1626.20'
11.	KERRVILLE AVIATION MAINTENANCE HANGAR	1617.08'
12.	MOONEY AIRCRAFT MANUFACTURING	1623.64'
13.	DUGOSH AIRCRAFT SERVICE	1628.45'
14.	DUGOSH AIRCRAFT SERVICE	1611.81'
15.	DUGOSH AIRCRAFT SERVICE	1610.73'
16.	HELIPAD (to be relocated)	
17.	FUTURE T-HANGAR DEVELOPMENT	
18.	FUTURE EXECUTIVE HANGAR DEVELOPMENT	
19.	FUTURE LARGE HANGAR DEVELOPMENT	
20.	FUTURE CORPORATE HANGAR DEVELOPMENT	
21.	FUTURE FBO/MAINTENANCE HANGAR DEV.	
22.	EXECUTIVE HANGAR	1635' est.

RUNWAY DATA

	RUNWAY 12/30		RUNWAY 03/21	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1 MILE / 1 MILE	3/4 MILE / 3/4 MILE	V/V	1 MILE / 1 MILE
PART 77 APPROACH SURFACES	34:1/34:1	34:1/34:1	20:1/20:1	20:1/20:1
RUNWAY WIDTH AND LENGTH	100' X 6000'	100' X 7100'	60' X 4047'	60' X 3592'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	25 (S)	60 (D)	15 (S)	15 (S)
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	NON-PRECISION	NON-PRECISION/NON-PRECISION	BASIC	NPI
EFFECTIVE RUNWAY GRADIENT %	.27	.15	1.04	1.0
MAXIMUM GRADE WITHIN RUNWAY LENGTH	.36%	.36%	1.33%	1.33%
RUNWAY LINE-OF-SIGHT (R/W Visibility Zone)	Criteria NOT met	Criteria met (1)	Criteria met	Criteria met
ALL WEATHER WIND COVERAGE (16 KNOT, 10.5 KNOT)	99.54%/94.06%	99.54%/94.06%	not applicable/95.49%	not applicable/95.49%
VISUAL APPROACH AIDS	VASI/PAPI	PAPI,REILS,MALS	NONE	PAPI/REILS
INSTRUMENT APPROACH AIDS	VOR-DME, RNAV OR GPS/LOCALIZER, NDB	GPS/GPS,LOCALIZER	NONE	GPS
AIRPORT REFERENCE CODE (ARC)	C-II	C-II	B-I (Small A/C only)	B-I (Small A/C only)
CRITICAL AIRCRAFT	GRUMMAN GULFSTREAM III	GRUMMAN GULFSTREAM III	Mooney (Typ.)	Mooney (Typ.)
RUNWAY SAFETY AREA	500' X 8000'	500' X 9100'	120' X 4527'	120' X 4072'
RUNWAY OBJECT FREE AREA	800' X 8000'	800' X 9100'	250' X 4527'	250' X 4072'
RUNWAY OBSTACLE FREE ZONE (No OFZ object penetrations)	400' X 6400'	400' X 7500'	250' X 4447'	250' X 3992'
TOUCHDOWN ZONE ELEVATIONS (TDZE)	1583.9'/1589.0	1583.9'/1589.0	1607.9'/1616.7'	1607.9'/1616.7'
THRESHOLD SITING CRITERIA	No threshold siting surface object penetrations			

NOTES: (1) Runway Visibility Zone deficiency is to be corrected with R/W 03 threshold relocation.

AIRPORT DATA

ITEM	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	1616.7'	1616.7'
AIRPORT REFERENCE POINT (ARP)	LAT. 29° 58' 36.246" LON. 99° 05' 08.447"	LAT. 29° 58' 32.367" LON. 99° 05' 04.283"
MEAN MAX. TEMP. HOTTEST MONTH	95°F	95°F
AIRPORT MAGNETIC VARIATION & DATE	6° 34.1' (7-20-00)	6° 34.1' (7-20-00)
NPIAS SERVICE LEVEL	GA	GA
TAXIWAY LIGHTING	NONE	MITL
TAXIWAY STRIPING	CENTERLINE	CENTERLINE
AIRPORT & TERMINAL NAVAIDS	VOR/DME,RNAV,NDB,GPS,LOC	VOR/DME,RNAV,NDB,GPS,LOC
UNICOM (MHz)	122.7	122.7
CONTROL TOWER (MHz)	NONE	NONE
AIRPORT PROPERTY (ACRES)	APPROX. 504	APPROX. 585.9

LAYOUT PLAN LEGEND

Items (with existing and future symbols): BUILDING RESTRICTION LINE; AIRPORT PROPERTY LINE; FENCE; AVIATION EASEMENT; RUNWAY PROTECTION ZONE; BUILDINGS; AIRFIELD PAVEMENT; FUEL STORAGE; BEACON; LIGHTED WIND CONE & SEGMENTED CIRCLE; PRECISION APPROACH PATH INDICATOR(PAPI); RUNWAY END IDENTIFIER LIGHTS(REILS); RUNWAY SAFETY AREA (RSA); RUNWAY OBJECT FREE AREA (ROFA); AUTOMATED WEATHER OBSERVATION STATION; HOLDLINES & SIGNS.

NOTES:
1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. TOPOGRAPHICAL CONTOURS TAKEN FROM USGS QUADRANGLE MAPS.
3. RUNWAY BEARINGS RECKONED CLOCKWISE FROM TRUE NORTH.
4. FUTURE DEVELOPMENT OF AIRPORT PROPERTY FOR NON-AVIATION USES WILL REQUIRE PRIOR APPROVAL BY THE FAA AND TXDOT AVIATION DIVISION.
5. "INITIAL" REFERS TO INTERMEDIATE DEVELOPMENT PROJECTS IMPLEMENTED PRIOR TO THE COMPLETION OF THE 20 YEAR DEVELOPMENT PLAN.

NO.	REVISIONS	BY	CHK'D	DATE

TEXAS DEPARTMENT OF TRANSPORTATION AVIATION DIVISION

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE REQUIREMENTS OF A FAVORABLE ENVIRONMENTAL FINDING PRIOR TO THE START OF ANY LAND ACQUISITION OR CONSTRUCTION AND AN FAA FORM 7460-1 SUBMITTED PRIOR TO ANY CONSTRUCTION ON AIRPORT PROPERTY

☐ ALP APPROVED ACCORDING TO FAA AC 150/5300-13 CH 5 PLUS THE CONDITIONS/COMMENTS IN LETTER DATED:

DIRECTOR, AVIATION DIVISION DATE

AIRPORT SPONSOR

CURRENT AND FUTURE DEVELOPMENT DEPICTED ON THIS ALP IS APPROVED AND SUPPORTED BY AIRPORT SPONSOR

TITLE, AIRPORT SPONSOR'S REPRESENTATIVE

SIGNATURE DATE

PREPARED BY:
Barnard Dunkelberg & Company
HDR Engineering, Inc.

DESIGNED BY BDC DATE 07/09/02
DRAWN BY DATE
CHECKED BY DATE

AIRPORT LAYOUT DRAWING
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS

Texas Department of Transportation Aviation Division

SHEET 1 OF 11

Figure F1 Phasing Plan

Appendix G
Glossary and Acronyms

Kerrville/Kerr County Airport – Louis Schreiner Field

Airport Master Plan

KERRVILLE ERV KERR COUNTY
LOUIS SCHREINER FIELD

GLOSSARY/ACRONYMS

TERMS:

Advisory Circular (AC): A series of external FAA publications consisting of all non-regulatory material of a policy, guidance, and informational nature.

Air Cargo: All commercial air express and air freight with the exception of air-mail and air parcel post.

Air Carrier: A commercial operator providing for the transport of passengers or property by aircraft for compensation or hire utilizing aircraft with greater than 30 seats and certificated in accordance with Federal Aviation Regulations (FAR) Parts 121 or 127.

Aircraft Mix: The numerical or percentage breakdown of aircraft into categories based on aircraft engine and weight.

Aircraft Operation: Any aircraft arrival or departure including touch-and-go operations.

Aircraft Type: A distinctive model of aircraft, as designated by the manufacturer.

Airline: A scheduled air carrier certificated by the Federal Aviation Administration under Part 121 of the Federal Aviation Regulations.

Airline Operations: Takeoffs and landings performed by aircraft operated by Part 121 or 127 airlines on scheduled and non-scheduled flights.

Airport: A landing area regularly used by aircraft for receiving or discharging passengers or cargo.

Airport Service Area: The geographic area that generates demand for aviation services at an airport.

Airport Surveillance Radar (ASR): A navigation instrument used to control air traffic within the immediate airport traffic areas.

Airspace: The area above the ground in which aircraft travel. It is divided into corridors, routes, and restricted zones for the control and safety of traffic.

Air Taxi: The transport of people or property for compensation or hire by a commercial operator (not an air carrier) in an aircraft having a maximum seating capacity of 30 or less and certified under Federal Aviation Regulations Part 135.

Ambient: The sum total of existing environmental conditions for any given impact category.

Ambient Air Quality: The existing quality of the air.

Aquatic: Growing or living in or upon water.

Approach Surface: An imaginary inclined surface longitudinally centered on the extended centerline of a runway, extending outward and upward from the runway. It has a shallower gradient than the corresponding glide slope.

Apron: An area on an airport designated for the parking, loading, fueling, or servicing of aircraft.

Aviation Easement: A form of limited property right purchase that establishes legal land-use control prohibiting incompatible development of areas required for airports or aviation-related purposes.

Based Aircraft: Aircraft stationed at the airport on a permanent basis.

Beacon: See rotating beacon.

Biotic Community: Recognizable assemblages of vegetation and wildlife organisms generally functioning as a unit.

Building Restriction Line (BRL): An imaginary line that identifies suitable building area locations on airports. The BRL is also dependent upon the Runway Visibility Zone (RVZ) and ATCT line-of-sight capabilities.

Capacity: The airport operating level, expressed as the number of aircraft movements that can occur at an airport over a specified time period.

Circling Approach: A descent used in an approved procedure to an airport for a circle to land maneuver.

Commercial Aviation: Aircraft activity licensed by state or federal authority to transport passengers and/or cargo on a scheduled or non-scheduled basis.

Community: A city, group of cities, or a Metropolitan Statistical Area receiving scheduled air service by a certificated route air carrier at an airport.

Commuter Airline: Commercial operators that operate aircraft with a maximum of 60 seats, and that provides scheduled service, or that carriers mail; commuters may be either air taxis or certified air carriers.

Condemnation: Proceedings under which a property interest may be forcibly acquired; government may condemn land through the power of eminent domain; an individual may apply inverse condemnation to obtain just compensation for a property interest taken by government without prior agreement.

Conical Surface: A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet and extending to a height of 350 feet above the airport elevation.

Critical Aircraft: The most demanding category or family of aircraft that performs 500 annual itinerant operations at an airport (Also referred to as the design aircraft).

Critical Habitat: An entire habitat or portion thereof, having any constituent element that is necessary to the normal needs or survival of an endangered or threatened species.

Decibel (dB): A unit of measurement used to describe sound pressure level. It is a dimensionless unit, which is commonly expressed as one-tenth of the logarithm of the ratio between two power levels, one of which is nominally a reference level. The human auditory response to a given increase in sound pressure is approximately proportional to the increase in sound pressure in comparison to the pressure already present.

Displaced Threshold: Actual touchdown point on specific runways designated due to obstructions that make it impossible to use the actual physical runway end.

Distance Measuring Equipment (DME): An airborne instrument that indicates the distance the aircraft is from a fixed point, usually a VOR station.

Draft Environmental Impact Statement: FAA's initial evaluation of the environmental impact of a proposed action when coordinated pursuant to Section 102(20Cc)) of NEPA is initiated.

Ecology: The science or study of the relationship between an organism and its environment.

Ecosystem: An ecological community together with its physical environment, considered as a unit.

Effective Runway Gradient: The maximum difference between runway centerline elevations divided by the runway length, expressed as a percentage.

Eminent Domain: Right of the government to take property from the owner, upon compensation, for public facilities or other purposes in the public interest.

Endangered Species: Those species in danger of extinction throughout all or a significant portion of their range.

Enplanement: A term applying to passengers and cargo which board a departing aircraft.

Enroute Airways: The route a flight follows from departure point to destination.

Express: Property transported under published air express tariffs.

Fauna: A collective term for the animal species present in an ecosystem.

Fixed Base Operator (FBO): A private enterprise engaged in services related to general aviation, such as fuel sales, aircraft maintenance, aircraft storage, aircraft rental and sales, flight instruction, and crop dusting.

Flora: A collective term for the plant species present in an ecosystem.

Floodplain: An area that would be inundated by storm-water runoff that occurs under a given recurrent frequency flood condition.

Fleet Mix: See Aircraft Mix.

Flight Service Station (FSS): FAA facility used for pilot briefings on weather, airports, altitudes, routes, and other flight planning data.

General Aviation (GA): All aviation activities except those performed by commercial air carrier or military.

General Aviation Aircraft: All civil aircraft except those owned by and classified as air carriers.

General Obligation Bond: A form of public indebtedness backed by the full faith and credit of the municipality or other appropriate public body.

Glide Slope (GS): Electronic vertical guidance provided the pilot while on the final approach to landing; usually an angle between two degrees and three degrees and intersecting the runway at the touch down area.

Global Positioning System (GPS): Satellite-based navigation capabilities utilizing a minimum of four (4) of 26 satellites orbiting the earth.

Horizontal Surface: A horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of specified radii from the center of each end of the primary surface of each runway and connecting the adjacent arcs by tangent lines.

IFR Conditions: Weather conditions below the minimum prescribed for flight under VFR.

Indirect Source: A facility, building, structure, or installation which attracts mobile air pollution source activity that results in emissions of a pollutant for which there is a national standard.

Instrument Landing System (ILS): A landing approach system that establishes a course and a descent path to align an aircraft with a runway for final approach.

Instrument Flight Rules (IFR): Rules that govern flight procedures when ceiling and visibility are below 1,000 feet and three miles respectively.

Instrument Approach: A landing approach using electronic aids and made without visual reference to the ground.

Itinerant Operations: Arrivals and departures of aircraft to or from an area greater than 20 miles from the airport. Itinerant operations may involve an aircraft based at the airport or an aircraft from another airport.

Local Area Augmentation System (LAAS): Intended to compliment Wide Area Augmentation System (WAAS) by meeting Category II/ III instrument approach requirements, as well as provide users with all weather surface navigation, surface navigation, and surface surveillance/ traffic management system capabilities.

Localizer (LOC): An electronic instrument that is part of an ILS and emits radio signals which provide the pilot with course guidance to the runway centerline.

Local Operations: Operations performed by aircraft that (1) operate in the local traffic pattern or within sight of the tower; (2) are known to be departing for or arriving from +/- light in local practice areas located within a 20 mile radius of the control tower; and (3) execute simulated instrument approaches or low passes at the airport.

Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR): A facility by which the pilot is provided visual reference t the instrument runway during transition from instrument to visual flight.

Microwave Landing System: An instrument landing system using VHF radio signals to guide the aircraft's approach instead of the VHF system still widely used. The microwave system provides for fewer ground reflections, takes up less space, and uses small aerials.

Minimum Descent Altitude (MDA): The lowest altitude, expressed in feet above MSL, to which descent is authorized on final approach or during circling-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided.

Middle Marker (MM): An electronic beacon that indicates a position approximately 3,500 feet from the landing threshold.

Military Operations: An operation by military aircraft.

Missed Approach: A prescribed procedure to be followed by aircraft that cannot complete an attempted landing at an airport.

Nautical Mile: A measure of lineal distance equal to one minute of a great circle at the equator and is the length of one minute of latitude (6,076.1155 feet). To convert to statute miles, multiply by 1.150779.

NAVAID: Any navigational aids, such as PAPI, MALS, REIL, etc.

Noise Contour: A line connecting points of equal noise exposure.

Non-precision Approach Procedure: A standard instrument approach procedure in which no electronic glide slope is provided.

Non-scheduled Service: Revenue flights that are not operated in regular scheduled service such as charter flights and all non-revenue flights incident to such flights.

Object Free Area (OFA): An area on the ground centered on the runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft gound maneuvering purposes.

Obstacle Free Zone (OFZ): The OFZ is the airspace below 150 feet (45m) above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or departing from the runway, and for missed approaches.

Operation: Any airborne arrival or departure of an aircraft at or from an airport. "Touch-and-go" practice landings are considered as two operations.

Origination: The initial enplanement of any passengers and cargo; total originations include all enplanements except transfers and stop-overs.

Outer Marker (OM): An electronic beacon that indicates a position at which aircraft will intercept the ILS glide path.

Parts 25 and 121 Criteria: Those applicable portions of the Federal Aviation Regulations within which criteria for operational takeoff flight paths are defined.

Part 77: The applicable portions of Federal Aviation Regulations which define obstructions to air navigation.

Peak Hour: Represents that highest number of operations or passengers during the busiest hour of an average day of a peak month.

Precision Approach Path Indicator (PAPI): A lighting system providing for visual flight path, within the airport approach zone, so that an approaching pilot can establish a positive controlled descent (also VASI).

Precision Instrument: The term used to describe an approach using both horizontal and vertical guidance. This term also describes the runway with this type of approach and the markings on the runway.

Primary Runway: That runway which provides the best wind coverage, etc.; this runway receives the most usage at an airport.

Primary Surface: A surface longitudinally centered on a runway. When the runway has a hard surface, the primary surface extends 200 feet beyond each runway end; but when there is no hard surface, or planned hard surface, the primary surface ends at the end of the runway. The width of the primary surface of a runway will be that width prescribed in FAA Part 77 for the most precise existing or planned approach to that runway end.

Revenue Bonds: A form of public indebtedness backed by the revenue generated by the facility for which the debt was incurred.

Rotating Beacon: A visual NAVAID displaying flashes of white and/or colored light used to indicate the location of an airport.

Runway (RW): A defined area on an airport prepared for landing and takeoff of aircraft.

Runway Protection Zone (RPZ): An area off the runway end to enhance the protection of people and property on the ground.

Runway Safety Area: A defined surface surrounding the runway prepared or suitable for reducing the risk of damage o aircraft in the event of an overshoot, undershoot, or excursion from the runway.

Runway Visibility Zone (RVZ): An acceptable runway profile permits any two points five feet (1.5m) above the runway centerline to be mutually visible for the entire runway length. Hence, a clear line-of-sight between the ends of the of intersecting runways is recommended. Finally, the RVZ is an area formed by the imaginary lines connecting the two runways' visibility points.

Scheduled Service: Transport service performed by a commercial operator on a regular basis.

Segmented Circle: An airport aid identifying the traffic pattern direction.

Socioeconomic: Data pertaining to the population and economic characteristics of a region.

Special Use Airspace: Airspace of defined dimensions, within which flight of aircraft, while not wholly prohibited, is subject to restrictions or to hazards that may exist to non-participating aircraft.

Straight-In Approach: A descent in an approach procedure in which the final approach course alignment and descent gradient permits authorization of straight-in landing minimums.

Student Activity: Any aviation activity by student pilots.

Taxiway (TWY): A defined area on an airport prepared for the surface movement of aircraft to and from the runway.

Terminal Airspace: The controlled airspace normally associated with aircraft departure and arrival patterns to or from airports within a terminal control system.

Terminal Building: That building on an airport which is used in making the transition between surface and air transportation.

T-Hangar: A T-shaped aircraft storage building that provides economical shelter for a single aircraft.

Threshold: The beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

Tie Downs: An area on an airport specifically designed for the outdoor storage of aircraft.

Total Operations: The total of all operations (domestic and international) performed at an airport.

Touch-and-Go Operations: An aircraft operation for practice or testing purposes characterized by a landing touch down and then continuing takeoff without stopping.

Traffic Pattern: The flow of traffic that is prescribed for aircraft landing at, taxiing on, or taking off from an airport.

Transition Surface: An imaginary surface extending to the sides of the approach surface and inclined at a specified gradient 90 degrees to the extended centerline of the runway. Any object penetrating this surface would be an obstruction to air navigation.

Turnaround: A pavement area designed for turning around or holding aircraft at the end of a runway when a full parallel taxiway is not provided.

UNICOM: A ground radio communications station that provides pilots with pertinent airport information at specific airports.

Visual Approach Slope Indicator (VASI): A lighting system providing a visual flight path, within the airport approach zone, so that an approaching pilot can establish a more positive controlled descent (also PAPI).

Vector: A heading issued to an aircraft to provide navigational guidance by radar.

Visual Flight Rules (VFR): Rules under which aircraft are operated by visual reference to the ground, and fly on a “see and be seen” principle.

Very High Frequency Omni-Directional Range (VOR): Air navigation aid that provides bearing information to aircraft.

Wide Area Augmentation System (WAAS): Planned as a GPS augmentation by providing users with the use of GPS for all phases of flight from the en route environment to Category 1 precision instrument approaches. Thereby, providing more direct routing of aircraft, saving time, fuel, and money.

Wind Cone (Sock): Conical wind direction indicator.

Wind Coverage: Refers to orientation of runway in relationship to direction of prevailing winds (concerns usability of runway for takeoffs and landings).

Wind Rose: A diagram indicating the prevalence of winds from various directions, at a specific place.

Wind Tee: A visual device used to advise pilots about wind direction.

ACRONYM

AC:	Advisory Circular
ADF:	Automatic Direction Finder
AGL:	Above Ground Level
AIP:	Airport Improvement Program
ASR:	Airport Surveillance Radar
ALP:	Airport Layout Plan
ALS:	Approach Lighting System
ARFF:	Aircraft Rescue and Fire Fighting
ARTCC:	Air Route Traffic Control Center
ASDA:	Accelerate – Stop Distance Available
ASV:	Annual Service Volume
ATC:	Air Traffic Control
ATCT:	Air Traffic Control Tower
AWOS:	Automated Weather Observing System
BRL:	Building Restriction Line
BWR:	Bucher, Willis & Ratliff Corporation
CAT:	Category
CWY:	Clearway
dB:	Decibel
DME:	Distance Measuring Equipment
DNL:	Day/Night Average Sound Level
DOT:	Department of Transportation
FAA:	Federal Aviation Administration
FAR:	Federal Aviation Regulation
FIS:	Federal Inspection Service
FBO:	Fixed Base Operator
FSS:	Flight Service Station
FTZ:	Foreign Trade Zone
GA:	General Aviation
GPS:	Global Positioning System
GVGI:	Generic Visual Slope Indicator
GS:	Glide Slope
HIRL:	High Intensity Runway Lights
HUD:	U.S. Department of Housing and Urban Development
IFR:	Instrument Flight Rules
ILS:	Instrument Landing System
IMC:	Instrument Meteorological Conditions
INM:	Integrated Noise Model
KHz:	Kilohertz
LAAS:	Local Area Augmentation System
LDA:	Landing Distance Available
LIRL:	Low Intensity Runway Lights
LOC:	Localizer
MALSF:	Medium Intensity Approach Lighting System
MALSR:	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
MDA:	Minimum Descent Altitude
MHz:	Megahertz
MIRL:	Medium Intensity Runway Lights
MITL:	Medium Intensity Taxiway Lights
MM:	Middle Marker
MOA:	Military Operations Area
MSA:	Metropolitan Statistical Area
MSL:	Mean Sea Level

NAVAID:	Navigational Aid
NDB:	Non-directional Beacon
NOS:	National Ocean Survey
NPI:	Non-precision Instrument
NPIAS:	National Plan of Integrated Airport System
NWS:	National Weather Service
OAG:	Official Airline Guide
OC:	Obstruction Chart
OFA:	Object Free Area
OFZ:	Obstacle Free Zone
OM:	Outer Marker
OPBA:	Operations Per Based Aircraft
PAPI:	Precision Approach Path Indicators
PIR:	Precision Instrument
PLASI:	Pulsating Light Approach Slope Indicator
RAIL:	Runway Alignment Indicator Lights
REIL:	Runway End Identifier Lights
RNAV:	Area Navigation
RPZ:	Runway Protection Zone
RVR:	Runway Visibility Range
RVZ:	Runway Visibility Zone
RW:	Runway
SSALF:	Simplified Short Approach Light System with sequenced Flasher Lights
SSALR:	Simplified Short Approach Light System with RAIL
TACAN:	Tactical Air Navigation
TAP:	Terminal Area Plan
TCA:	Terminal Control Area
TERPS:	Terminal Instrument Procedures
TVOR:	Terminal Very High Frequency Omni Range
TW:	Taxiway
UHF:	Ultra-High Frequency
USGS:	United States Geological Survey
VASI:	Visual Approach Slope Indicator
VFR:	Very High Frequency
VMC:	Visual Meteorological Conditions
VOR:	VHF Omni-Directional Range
WAAS:	Wide Area Augmentation System

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