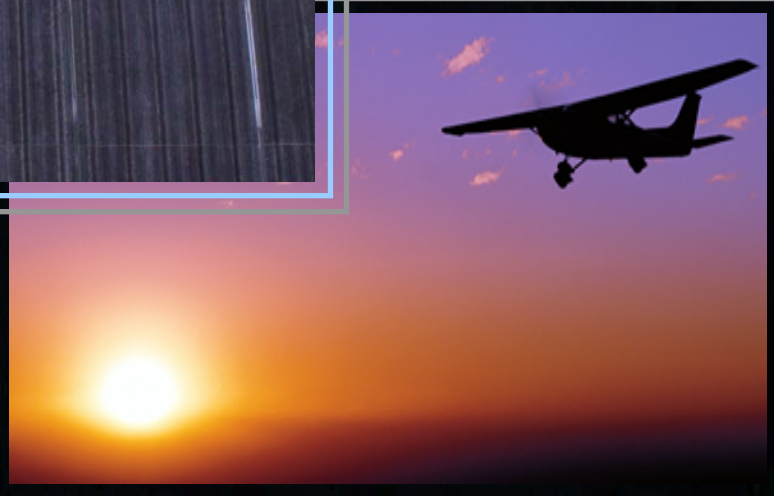
Taylor Municipal Airport
Taylor, AZ

Airport Master Plan Final Report 11/30/05



TAYLOR ARIZONA
1878 ★ 1978

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services

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Taylor Airport Master Plan
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Taylor Municipal Airport
Airport Master Plan

Introduction

The Town of Taylor, Arizona, as the Airport Sponsor, is continuing its effort to plan for future development of the Taylor Municipal Airport. This development is designed to enhance air and ground operations, improve safety, provide better airport services, and stimulate the local economy through business growth potential.

FIGURE 1. TAYLOR AIRPORT SIGN

PURPOSE

An airport master plan document describes and depicts the overall concept for the long-term development of an airport. It presents the concepts graphically in the airport layout plan (ALP) drawing set and reports the data and logic on which the concept is based in the airport master plan (AMP) report. The goal of the master plan report is to provide direction for future airport development that will satisfy aviation demand in a financially feasible manner and meet the needs of the community with respect to the airport.

OBJECTIVES

The primary objectives of the airport master plan are to produce an attainable phased development plan concept that will satisfy the airport needs in a safe, efficient, economical, and environmentally sound manner. The plan serves as a guide to decision makers, airport users, and the general public for implementing airport development actions while considering both airport and community concerns and objectives.

The primary objective of the Town of Taylor is to plan for the accommodation of the existing and future based and transient aircraft demand. Additional issues the Town has indicated it would like addressed in the master plan process include necessary land acquisition, development of adjacent compatible land uses and coordination with the planned business/industrial park adjacent to the airport.

Specific objectives of the Taylor Airport Master Plan include, but are not limited to:

- Clearly identify the present and future roles of the Taylor Municipal Airport;
- Depict design standards for the determined Airport Reference Code (ARC);
- Provide the basis for future federal, state, local government and private investment in the airport;
- Develop realistic, phased development and maintenance plans for the airport
- Provide an Airport Layout Plan (ALP) in accordance with the current FAA regional ALP checklist;
- Identify future land acquisition requirements;
- Prepare recommended Compatible Land Use and Height Restriction overlay zones;
- Prepare an Environmental Overview for proposed development indicating the nature of alternatives that must be reviewed;

- Develop an achievable financial plan for the airport to support the implementation schedule and operation and maintenance costs; and
- Present for public consideration, a plan which addresses the issues and satisfies local, state and federal regulations.

MASTER PLAN PROCESS

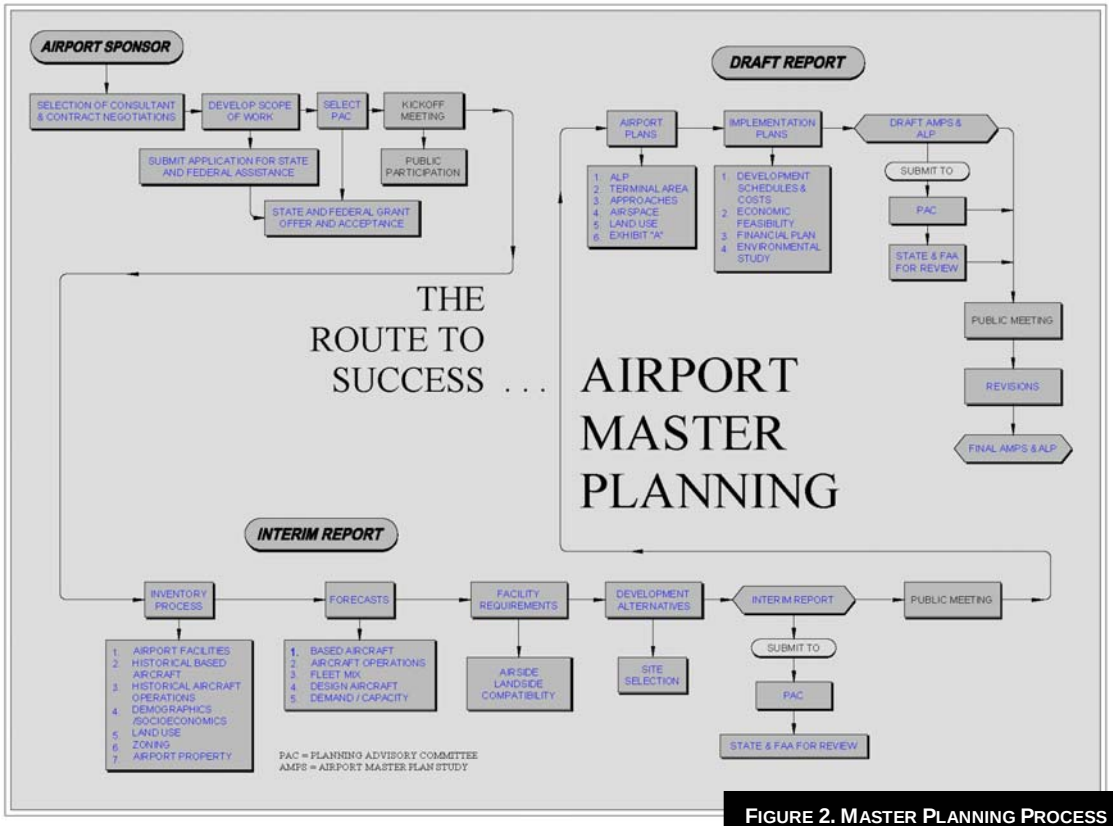


FIGURE 2. MASTER PLANNING PROCESS

Airport planning takes place at a national, state, regional, and local level. These plans are formulated on the basis of overall transportation demands and are coordinated with other transportation planning and comprehensive land use planning. The National Plan of Integrated Airport Systems (NPIAS) is a ten-year plan continually updated and published biannually by the Federal Aviation Administration (FAA). This publication lists developments at public use airports that are considered to be of national interest and thus eligible for financial assistance for airport planning and development under the Airport and Airway Improvement Act of 1982. Statewide Integrated Airport Systems Planning identifies the general location and characteristics of new airports and the general expansion needs of existing airports to meet statewide air transportation goals. This planning is performed by state transportation or aviation planning agencies. Regional Integrated Airport Systems Planning identifies airport needs for a large regional or metropolitan area. Needs are stated in general terms and incorporated into statewide system plans. Airport Master Plans are prepared by the operators of individual airports and are usually completed with the assistance of consultants. The Town of Taylor is completing this master plan with the assistance of Armstrong Consultants, Inc. The airport master planning process involves collecting data, forecasting demand, determining facility requirements, studying various alternatives and developing plans and schedules. The flow chart in Figure 2 depicts the steps in the master planning process. This process will take into consideration the needs and concerns of the airport sponsor, airport tenants and users, as well as the general public.

PLANNING ADVISORY COMMITTEE

The Taylor Planning Advisory Committee (PAC) consists of members representing varied interests in the airport and the community. Their involvement throughout the master planning process will help to keep interested parties informed and will foster consensus for future development actions.

PAC REPRESENTATIVES

- *Town of Taylor – Stephen Sturgell*
- *Taylor Town Council – Boyd Hatch*
- *Taylor Municipal Airport – Richard Prior*
- *Airport Users/Local Pilot – Ron Vance*
- *Airport Users/Local Pilot – Dave Smith*
- *Private Investor – Rod Mitchell*
- *Luke Air Force Base – Terry Hansen*
- *Arizona Aeronautics Division – Ray Boucher*
- *Federal Aviation Administration – Margie Drilling*

Chapter One
Inventory

Taylor Municipal Airport
Airport Master Plan

Chapter One
Inventory

INTRODUCTION AND AIRPORT HISTORY

The Taylor Municipal Airport (TYL) is a general aviation airport located in eastern Arizona, approximately 2 miles southwest of the Town of Taylor. The airport is 112 nautical miles northeast of Phoenix Sky Harbor International Airport, however, it is close to a 200-mile drive from Taylor to Phoenix. The airport was established at its present location in 1974 and was originally a 3,000 foot dirt strip. In 1975 the Town of Taylor became owner and sponsor of the airport, paved the 3,000 foot strip and built the existing box hangar. In 1985 Runway 3/21 was extended to 5,100 feet and the existing terminal building was constructed by the FBO at the time, Ponderosa Aviation. The five existing T-hangars were constructed in 1983 through 1984. In 1992 the runway was extended to 7,203 feet and a partial parallel taxiway was constructed to Runway 21. In 2004 the parallel taxiway was completed to the end of Runway 3.

The Town of Taylor is located in the valley of Silver Creek, on Arizona Highway 77. Surrounding land features include the Mogollon Rim and the White Mountains to the south and west of Taylor. The Town of Taylor is also located immediately south of its sister city, Snowflake, Arizona.

AIRPORT GRANT HISTORY

The original Airport Master Plan was completed in 1989 and this Airport Master Plan replaces the 1994 Airport Master Plan Update and subsequent revisions. A federal and state grant history for the capital improvements at the Taylor Municipal Airport is provided in Table 1-1. In Arizona, under the most recent FAA Airport Improvement Program legislation (Vision 100), capital improvement projects are typically funded at 95 percent Federal Aviation Administration (FAA), 2.5 percent State of Arizona and 2.5 percent by the sponsor.

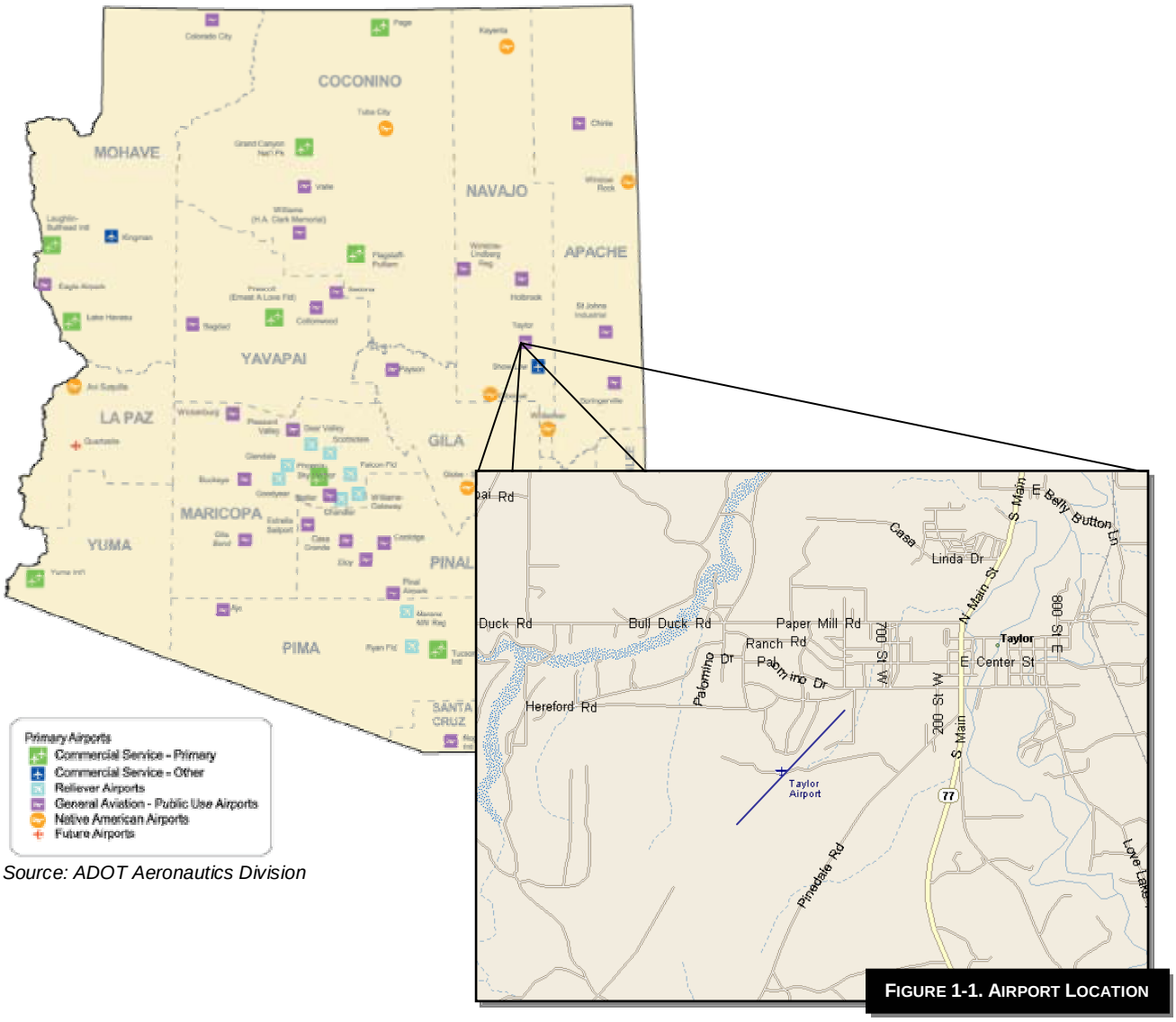
TABLE 1-1 GRANT HISTORY

Project No. & Date	Description of Work	Federal Amount
AIP-07 – 1995	Grade, Drain and Surface Taxiway	$437,088
AIP-08 – 2000	Rehab Runway 3/21	$620,000
AIP-09 – 2001	Parallel Taxiway Phase I	$569,125
AIP-10 – 2002	Apron Phase I	$150,000
AIP-11 – 2003	Parallel Taxiway Phase II	$1,006,462
AIP-12 – 2004	Update Airport Master Plan	$94,300
	TOTAL FAA AMOUNTS	$2,876,975
State Grant No. & Date		**State Amount**
N540 – 1994	Update Master Plan and ALP	$36,000
N640 – 1995	Grade, Drain and Surface Taxiway	$21,456
E9084 – 1998	Runway reconstruction (Design only)	$61,200
E9053 – 1998	Land Acquisition (25 acres)	$157,500
E1130 – 2000	Rehab Runway 3/21	$30,436
E1159 – 2001	Parallel Taxiway Phase I	$27,938
E3F55 – 2002	Apron Phase I	$7,363
E4F19 – 2003	Parallel Taxiway Phase II	$49,405
E5F35 – 2004	Update Airport Master Plan	$2,492
	TOTAL STATE AMOUNTS	$393,790

AIRPORT LOCATION

The Taylor Municipal Airport is located in the east-central portion of Arizona in southern Navajo County. The airport is situated in portions of Sections 3, 9 and 10, Township 12 North, Range 21 East of the Gila

and Salt River Meridian. Figure 1-1 provides a graphic depiction of the location of the airport. The airport is designated by the FAA as Site Number 00804.A and is a public airport. The airport location is Latitude 34° 27' 10.23" North and Longitude 110° 06' 53.37" West according to FAA Form 5010-1, Airport Master Record. The airport elevation is 5,820 feet and the airport currently has a B-II Airport Reference Code.



Source: ADOT Aeronautics Division

FIGURE 1-1. AIRPORT LOCATION

AIRPORT PROPERTY

The existing airport property line encompasses 180 acres according to the airport legal description. According to the Navajo County Assessor's office, the airport is contained within Parcel Number 205-04-019, owned in fee by the Town of Taylor. The Runway Protection Zone (RPZ) for Runway 3 is encompassed within the airport property line, however, the RPZ for Runway 21 is not, and should be acquired. The Town should also consider acquiring additional land west of the runway to protect the airport from incompatible land uses.

LAND USE PLANNING

The Town of Taylor is currently in the process of adopting an Airport Overlay Zoning Ordinance and Airport Zoning Maps showing the airport influence zone, the traffic pattern zone and the airport approach zone (see Appendix B). This overlay zoning is consistent with Apache County land use planning and the ADOT Highway plan for the area. Under the existing zoning regulations, the airport is zoned industrial and is surrounded by primarily agriculturally zoned land. The current Town of Taylor Zoning Map is shown in Figure 1-2. The Town of Taylor is also in the process of developing an airport disclosure map to be coordinated with the Arizona State Real Estate Department. The Town currently maintains a Storm Water Pollution Prevention (SWPP) Plan and is in the process of developing a Spill Prevention, Control and Countermeasure (SPCC) Plan for its fuel facility at the airport. The Town of Taylor is also planning to develop an Airport Operations Manual outlining the minimum standards and rules and regulations for the Taylor Municipal Airport. The airport is located less than 1 mile from Arizona Highway 77, however, there is no existing intermodal transportation network established in Taylor and there is insufficient demand for air freight activities at the airport.

The lack of past land use planning has allowed some incompatible land uses to occur in the vicinity of the Taylor Municipal Airport. The primary incompatible land use is the residence and trucking business located in the Runway Protection Zone (RPZ) for Runway 21. Correction of this incompatible land use is discussed in Chapter 4.

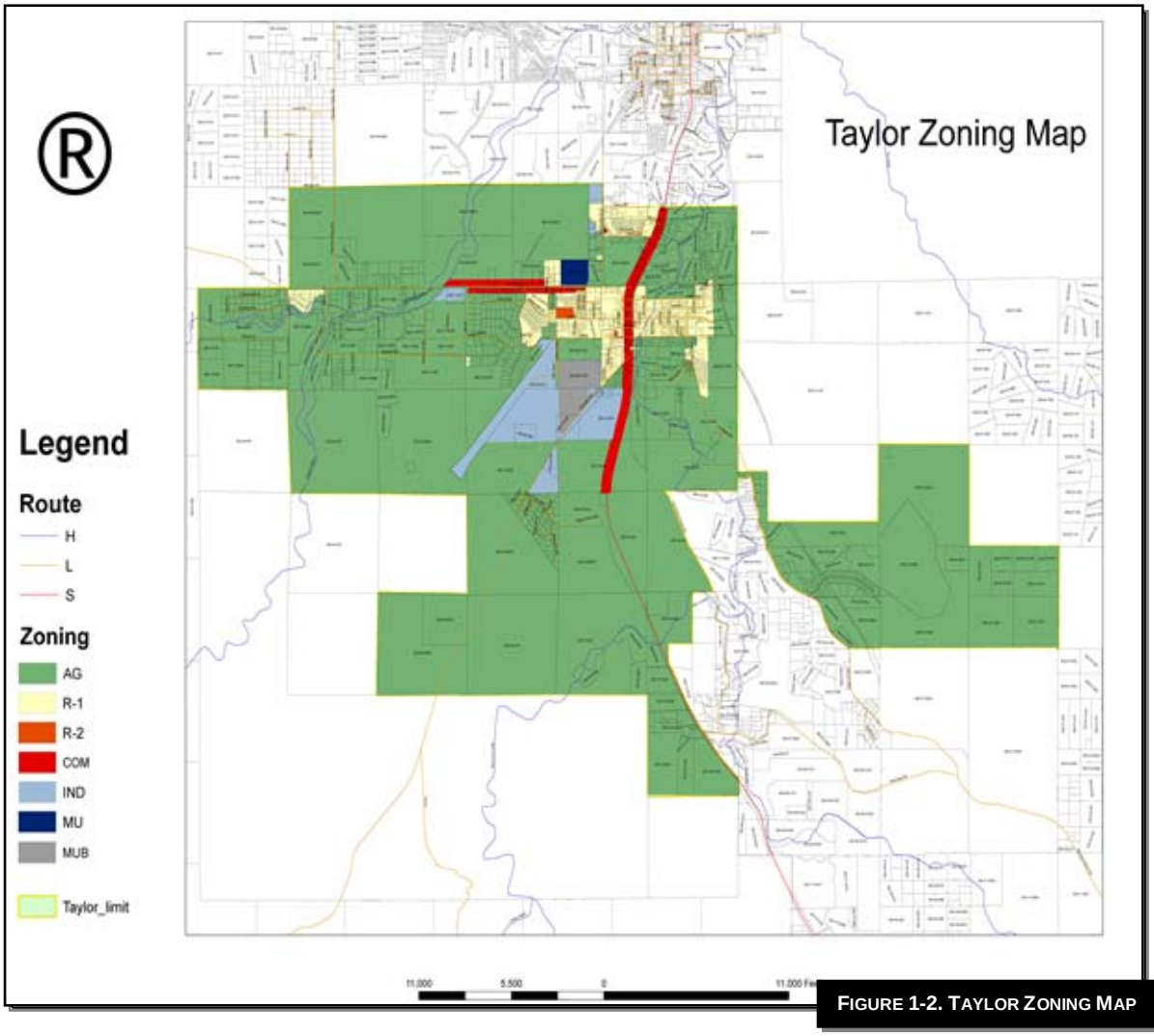


FIGURE 1-2. TAYLOR ZONING MAP

REGIONAL SETTING

The Town of Taylor is located on the banks of Silver Creek, in a broad, flat valley in east-central Arizona. The Mogollon Rim and White Mountains to the south and west form an almost continuous barrier protecting Taylor from severe winters and creating a simi-arid climate. As shown in Figure 1-3, Taylor is located immediately south of Snowflake, Arizona on State Route 77. Taylor is approximately 32 miles south of Holbrook, the Navajo County seat, and approximately 15 miles north of Show Low, Arizona.

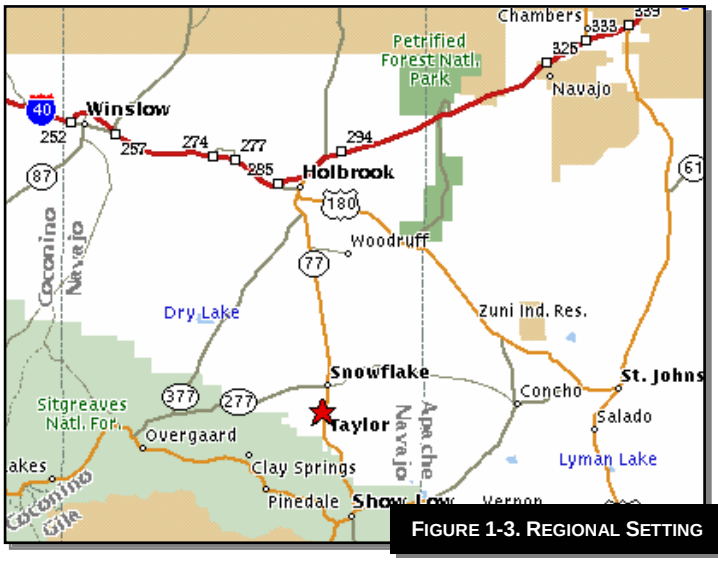


FIGURE 1-3. REGIONAL SETTING

RECREATION AND TOURISM

Taylor lies in an area of great contrast-barren desert to the north and mountain ranges to the south. The Petrified Forest National Park, North of Taylor, is one of the nation's most unique parks. Within the Petrified Forest National Park is the Painted Desert and north of the Park is the Navajo Indian Reservation with such attractions as Monument Valley and Oraibi, the oldest continually occupied village in the U.S. To the south and west of Taylor are high mountains and forests, including the White Mountains, Sitgreaves National Forest, and the Mogollon Rim. Many small lakes, perfect for trout fishing and swimming, are scattered throughout these mountains. The Sunrise Park Ski Resort is located 65 Miles south of Taylor on the Fort Apache Indian Reservation.

SOCIOECONOMIC CHARACTERISTICS

Examining the specific socioeconomic characteristics of the Town of Taylor and Navajo County will help determine the factors influencing aviation activity in the area and the extent to which aviation facility developments are needed in Taylor. Characteristics, such as employment, demographic patterns, and income, will help in establishing the potential growth rate of aviation within the town and the county. In other words, by analyzing the information in this Chapter, forecasts of aviation activity can be developed. Those forecasts will be provided in Chapter 2.

LOCAL PROFILE

Abitibi Consolidated Sales Corporation, Arizona's only pulp and paper mill, is Snowflake and Taylor's largest industry. Located on a 640-acre site 15 miles west of Taylor, it is one of the most modern and efficient facilities of its type in America. Its daily production of newsprint and kraft linerboard supplies the fast-growing Southwest region.

Livestock production in the Snowflake/Taylor area is significant. Recently, 32,000 head of cattle have grazed annually in the county, many of them in the Snowflake/Taylor area. Hog production has also greatly increased in importance, reaching 250,000 head annually.

POPULATION

As of the 2000 US Census, there were 3,176 people residing in Taylor, 4,460 residing in Snowflake and 97,470 residing in Navajo County. According to population estimates from the Arizona Department of Economic Security (ADES) and the U.S. Census Bureau, these populations substantially increased from 2000 to 2003. The Town of Taylor's population increased to 3,750 or 18%, the Town of Snowflake increased to 4,715, or 6% while the population of the County increased by approximately 6,320 residents. Table 1-2 shows this increasing population trend.

TABLE 1-2 POPULATION

	1990	2000	2003 (Estimated)
Taylor	2,148	3,176	3,750
Snowflake	3,679	4,460	4,715
Navajo County	77,658	97,470	103,790
Arizona	3,665,228	5,130,632	5,629,870

Sources: Arizona Department of Economic Security, US Census Bureau (June 2004)

The ADES, Research Administration, Population Statistics Unit developed population projections for all Arizona communities, counties and the state in 1997. Population projections as shown in Table 1-3 indicate a 42 percent population increase for the State of Arizona from 2003 to 2025. Navajo County, Taylor and Snowflake are growing at a faster rate than projected in 1997. Navajo County already exceeded its 2010 projection in 2003, while the Town of Taylor has exceeded its 2015 projection in 2003. Taylor is growing at a rate of 6 percent annually from 2000 to 2003 while Snowflake has grown at a rate of 2 percent annually. Because the area is obviously growing at a faster rate than was projected in 1997, a new projection was developed combining the populations of Taylor and Snowflake and projecting the existing population trend of 4 percent annually. At an average rate of 4 percent, the 2025 combined populations of both Towns will exceed 15,900 residents (Figure 1-4).

TABLE 1-3 POPULATION PROJECTIONS

	2010	2015	2020	2025
Taylor	3,431	3,723	4,019	4,301
Snowflake	4,888	4,999	5,143	5,319
Navajo Co.	99,975	105,850	111,950	117,925
Arizona	6,145,125	6,744,800	7,363,625	7,993,000
Taylor/Snowflake*	10,835	12,528	14,221	15,914

Source: Arizona Department of Economic Security, Research Administration, Population Statistics Unit (July, 1997)
**Combined: Armstrong Consultants, Inc. projection based on 4% annual growth rate*

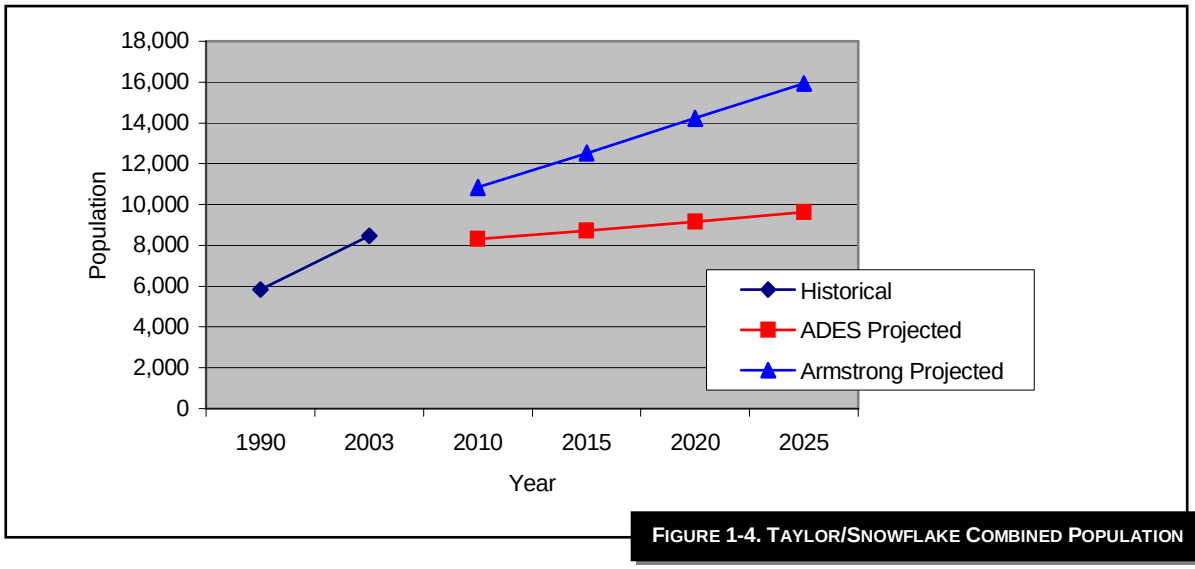


FIGURE 1-4. TAYLOR/SNOWFLAKE COMBINED POPULATION

EMPLOYMENT

As stated previously, Abitibi Consolidated Sales Corporation, Arizona's only pulp and paper mill, is Snowflake and Taylor's largest industry. Located on a 640-acre site 15 miles west of Taylor, it is one of the most modern and efficient facilities of its type in America. Its daily production of newsprint and kraft linerboard supplies the fast-growing Southwest region. The plant's permanent employees are supplemented by another large group who work as woodcutters, truckers, and in other plant-affiliated

jobs. The present annual payroll and substantial contribution to local taxes has contributed immensely to the economy and growth of the snowflake/Taylor area.

Precision Pine and Timber maintains a sawmill in the Heber area (approximately 32 miles west of Taylor) that converts the logs into rough boards. Precision Pine and Timber Planer Mill Surfaces the rough lumber that is wholesaled to retailers and dealers needing finished lumber and also rough lumber for railroad ties, and all kinds of timber, posts. There are three molding companies that are large employers in the Snowflake/Taylor vicinity, manufacturing interior and exterior pine moldings. Livestock production in the Snowflake/Taylor area is also a significant industry. The principal industries of Navajo County include tourism, coal mining, manufacturing, timber production and ranching.

According to the Arizona Department of Economic Security, the unemployment rate in Taylor was 4.1% in 2000 and has decreased to 3.8% in 2003. The unemployment rate in Snowflake was 11.9% in 1990, 4.8% in 2000 and 4.4% in 2003. Navajo County employment distribution is shown in Table 1-4 and Figure 1-5.

TABLE 1-4 NAVAJO COUNTY EMPLOYMENT DISTRIBUTION

	1990	% of Total	2002	% of Total
Government	5,475	27%	10,950	41%
Construction	825	4%	1,325	5%
Trade	4,400	22%	5,775	21%
Agriculture	0	0%	229	1%
Mining	1,175	6%	825	3%
Manufacturing	1,825	9%	975	4%
Services	4,875	24%	4,700	17%
Transportation, Communication, & Public Utilities	1,650	8%	2,125	8%
Total	20,225	100%	26,904	100%

Source: Arizona Department of Economic Security

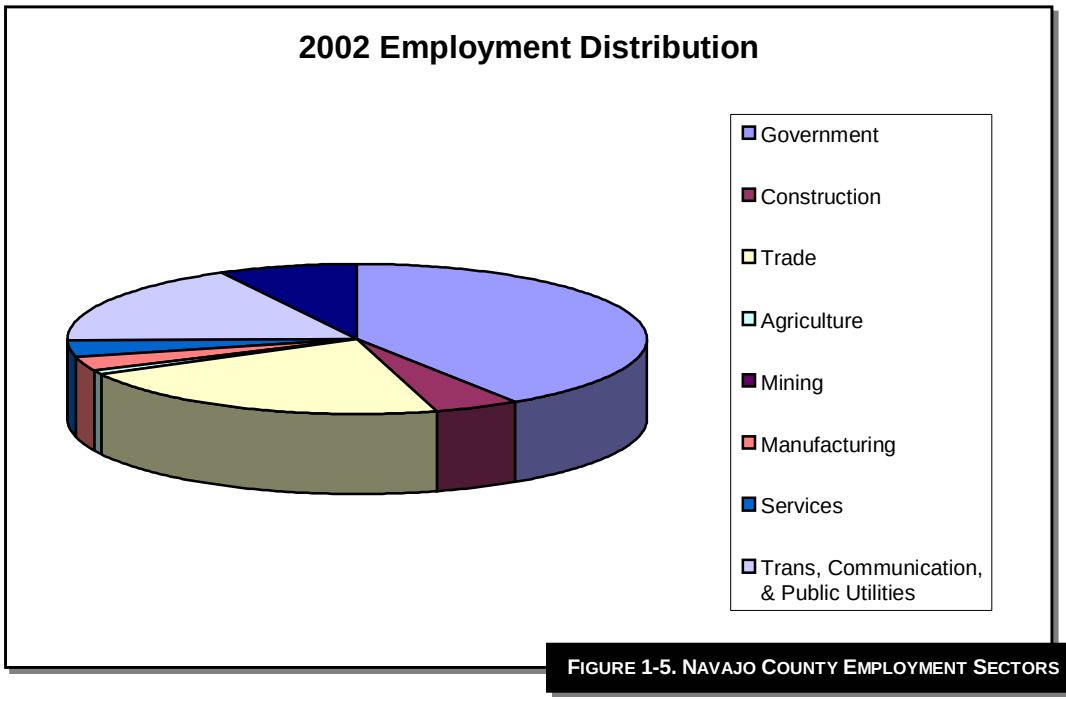


FIGURE 1-5. NAVAJO COUNTY EMPLOYMENT SECTORS

INCOME

According to the 2000 US Census, the median income for a household in Navajo County was $28,569, and the median income for a family was $32,409. The per capita income for the county in 2000 was $11,609. The percentage of the population living below the poverty line for the county was approximately 29.5 percent. The median income for a household in Taylor was $32,577 and the median income for a family was $36,518. The median income for a household in Snowflake was $37,439 and the median income for a family was $42,500.

GROWTH INDICATORS

Additional growth indicators include building permits, taxable sales and net assessed valuation. Building permits in the Town of Taylor increased from 64 in 2000 to 144 in 2003. According to the Arizona Tax Research Foundation, taxable sales have increased 35 percent in Taylor and 33 percent in Snowflake from 2000 to 2003 while net assessed property values have increased 38 percent in Taylor and 46 percent in Snowflake during the same time period.

As shown in previous paragraphs, the socioeconomic condition of the Town's of Taylor and Snowflake are very strong and growing steadily. This healthy socioeconomic growth for the area will enhance the Taylor Municipal Airport's ability to attract future aviation activity.

CERTIFICATED PILOTS AND REGISTERED AIRCRAFT

The FAA databases of certificated airmen and registered aircraft were reviewed to determine the current distribution of pilots and registered aircraft in Taylor and Snowflake. This data indicates that there are 2 certificated pilots and 2 aircraft registered in Taylor, Arizona and 9 certificated pilots and 6 aircraft registered in Snowflake, Arizona. Aircraft are not always based where they are registered, which explains why there are only 5 based aircraft at the Taylor Municipal Airport. Towns within a 45-mile radius were reviewed for certificated pilots and aircraft registrations and are listed in Table 1-5.

TABLE 1-5 CERTIFICATED PILOTS AND REGISTERED AIRCRAFT NEAR TAYLOR

	Aircraft Registered	Certificated Pilots
Show Low	27	35
Pinetop	4	11
Young	6	4
Heber	3	1
Overgaard	34	19
Holbrook	11	5

BASED AIRCRAFT AND OPERATIONS

Historically, based aircraft at the Taylor Municipal Airport have been much higher than existing numbers. After the closure of Ponderosa Aviation in June of 2002, the airport lost approximately 11 based aircraft virtually overnight. Currently, five aircraft are based at the Taylor Municipal Airport including a Cessna 172, 182 and 206, a Cherokee 180 and a BD-4 Experimental Aircraft. Annual operations were estimated from 12 months of activity reports by the airport manager from September of 2003 through September of 2004 at approximately 1,500.

INVENTORY OF EXISTING AIRPORT FACILITIES

AREA AIRPORT/SERVICE AREA

An airport service area is defined by the communities and surrounding areas served by the airport facility. For example, factors such as the airport's surrounding topographical features (mountains, rivers, etc.), proximity to its users, quality of ground access, required driving time to the airport, and the proximity of the facility to other airports that offer the same or similar services can all affect the size of a particular airport's service area. To define the service area for the Taylor Municipal Airport, the airports in the area and their specific services and facilities were reviewed. The approximately service area is shown in Figure 1-6 and the surrounding airports are listed in Table 1-6.

The nearest public airport with a paved surface is located approximately 13 nautical miles southwest in Show Low, Arizona. Runway 6/24 at Show Low is 7,200 feet long and 75 feet wide, while the crosswind runway at Show Low is 3,937 feet long by 66 feet wide. White Mountain Lake Airport is also located approximately 9 nautical miles southeast of Taylor between the Towns of Taylor and Show Low. Mogollon Airpark in Overgaard is located approximately 21 nautical miles west of Taylor. White Mountain Lake and Mogollon are private airports requiring owner permission to use. Cibecue and Whiteriver Airports are located south of Taylor on the Fort Apache Reservation and St. Johns Industrial Air Park is located in St. Johns, approximately 37 nautical miles east of Taylor.

FIGURE 1-6. TAYLOR AIRPORT SERVICE AREA

TABLE 1-6 AIRPORTS SURROUNDING TAYLOR

	Identifier	Distance (Nautical Miles)	Distance (Highway Miles)	NPIAS Status	Runway Length(s) Width(s)	Pavement Type	Instrument Approaches	Fuel
Show Low Municipal, Show Low, AZ	SOW	13 SE	15	OCS	7,200' x 75' 3,937' x 60'	asphalt	GPS/NDB	Yes
White Mountain Lake Airport	21 AZ	9 SE	10	PVT	4,000' x 50'	asphalt	VFR	No
Mogollon Airpark, Overgaard, AZ	AZ82	21 W	31	PVT	5,600' x 50'	asphalt	VFR	No
Holbrook Airport, Holbrook, AZ	P14	29 N	32	GA	6,698'x 75' 3,200' x 120'	asphalt dirt	VFR	Yes
Cibecue Airport, Cibecue, AZ	Z95	32 SW	60	GA	4,200' x 100'	dirt/gravel	VFR	No
St. Johns Industrial Air Park, St. Johns, AZ	SJN	37 E	49	GA	5,322' x 75' 3,400' x 60'	asphalt	GPS	Yes
Whiteriver Airport, Whiteriver, AZ	E24	40 S	52	GA	6,288' x 75'	asphalt	VFR	No

OCS: Other Commercial Service
GA: General Aviation
PVT: Private, not included in NPIAS

TOPOGRAPHY AND TERRAIN

Taylor Municipal Airport is at an elevation of 5,820 feet Mean Sea Level (MSL), based on a survey using U.S.G.S. datum. Surrounding land features include Silver Creek, which runs through the Town of Taylor, and the Mogollon Rim and White Mountains to the south and west of the town. This topography helps isolate Taylor in a broad, flat valley and creates a semi-arid climate for the area.

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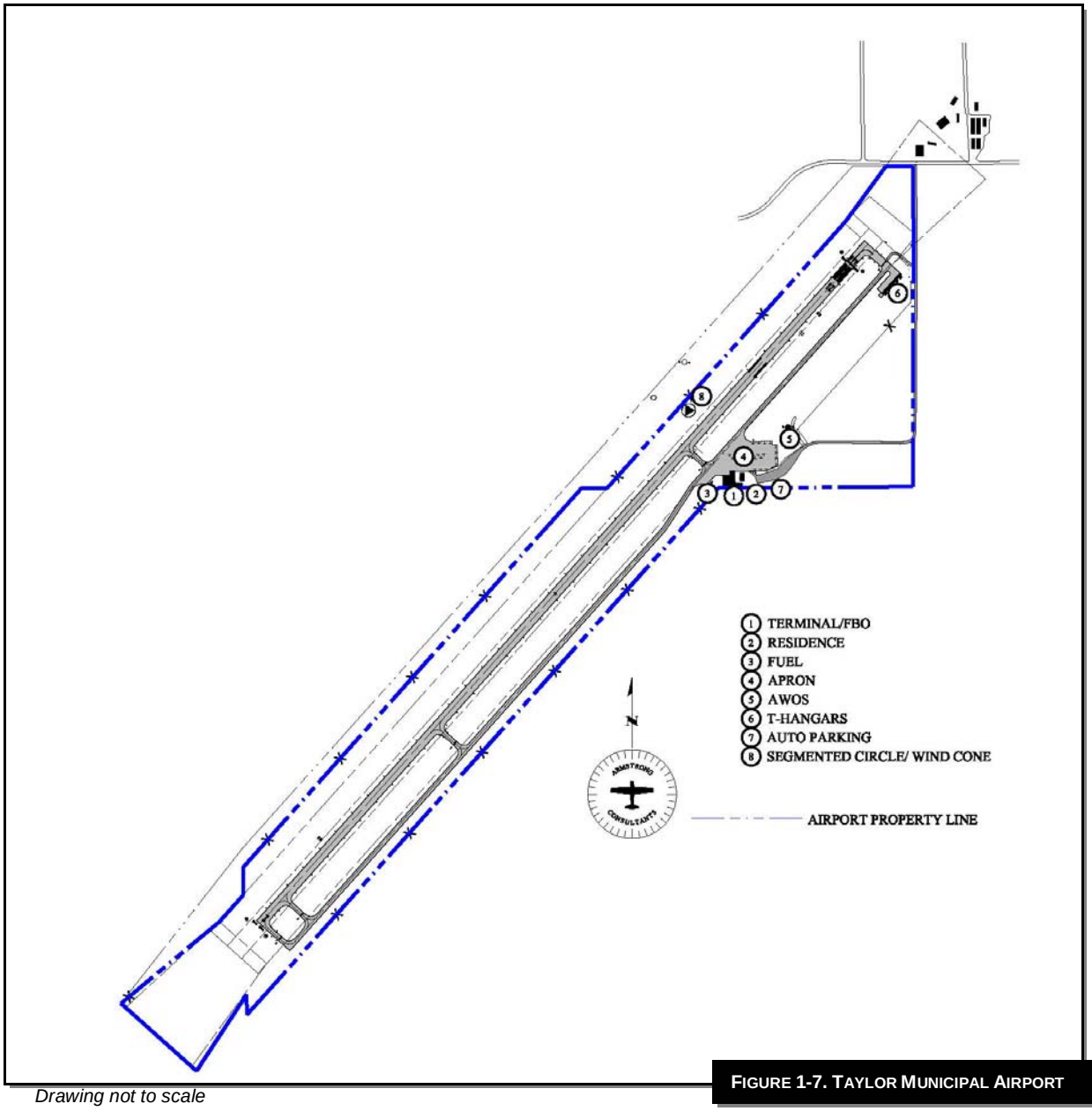
AIRSIDE FACILITIES

The airside facilities of an airport are described as the runway configuration, the associated taxiway system, the ramp and aircraft parking area, and any visual or electronic approach navigational aids. Figure 1-7 is a drawing of the existing facilities at the Taylor Municipal Airport. The ADOT Aeronautics Division, in association with Applied Pavement Technology, Inc. conducted a 2003 Airport Pavement Management System Update of all airport pavement in the state of Arizona. The pavement inspection at Taylor in 2003 assumed that a slurry seal application would be applied to all airport pavements later that year and the Pavement Condition Index (PCI) data was modified to estimate the condition after this work was performed. Unfortunately, the airport did not receive this slurry seal, so the good PCI ratings for Taylor are inaccurate.



Drawing not to scale

FIGURE 1-7. TAYLOR MUNICIPAL AIRPORT

TABLE 1-7 TAYLOR AIRPORT INVENTORY		
Airport Data		
Identifier	TYL	
FAA Site Number	00804.*A	
NPIAS Number	04-0065	
Airport Reference Code	B-II	
Owner/Sponsor	Town of Taylor	
Airport Elevation	5,820'	
Facilities		Condition/Notes
Runway 3/21	Length: 7,203' Width: 75' Surface: Asphalt Marking: visual	Fair/Good
Runway Lighting	Pilot Controlled MIRL	Direct burial, need 2-way amber globes, both ends
Navigational Aids	GPS Runway 21	
Approach Minimums	1 mile visibility, 361' ceiling height	
Visual Aids	PAPI-2 both ends, Beacon, Lighted wind cone and segmented circle	Beacon ineffective due to high trees
Taxiways	Full Length Parallel	Excellent
Taxiway Lighting	Reflectors	Good
Aircraft Aprons	17,600 SY	Fair
Tie Downs	22	Good
Pavement Strength	12,500 lbs SWG	N/A
Terminal Building	Attached to Corporate Hangar, 4,800 SF	Good
Caretaker Residence	Double-wide Trailer, 2,200 SF	Good
Hangar Facilities	1 70' x 70' Corporate Hangar, 4,900 SF 5 T-Hangars, 840 SF each	Good Fair
Automobile Parking	1,666 SY	Fair
Perimeter Fencing	5-Strand barbwire	Good
Fuel	100 LL AvGas, 5,000 gallon above ground tank	Tank needs sump drain
Weather Equipment	AWOS	Not connected to NWS
Private Aviation Contractor	Ray's Aircraft Services (engine overhauls, annual inspections, fabric covering and repair)	
Utilities	Power, Water, Phone, Gas, Sewer	

RUNWAY

Taylor Municipal Airport currently has one runway available to aviation users. Runway 3/21 is constructed of asphalt and is 7,203 feet long and 75 feet wide with a 2003 PCI Index of 89. However, as stated previously, this PCI Index is inaccurate. The runway has a strength of 12,500 pounds Single Wheel Gear (SWG). The runway has visual markings that are in good condition, however, the markings for Runway 21 should be reconfigured to coincide with the non-precision GPS instrument approach to that end of the runway. The runway pavement was crack sealed in 2003 and is in fair/good condition. Figure 1-8 shows Runway 3.

FIGURE 1-8. RUNWAY 3

TAXIWAYS

Taxiways provide a surface for aircraft access from the parking apron to and from the runways. They expedite aircraft departures from the runway and increase operational safety and efficiency. A partial parallel taxiway was constructed from the apron area to the end of Runway 21 in 2000. This portion of the taxiway was constructed at a 240-foot separation from the runway centerline and received an inaccurate 2003 PCI Index rating of 92. The airport also has a new full taxiway from the apron area to the end of Runway 3 at a runway separation of 300 feet. This portion of the taxiway was constructed in 2003 and is in excellent condition. Figure 1-9 shows the connection between the two taxiways.

FIGURE 1-9. TAYLOR TAXIWAYS

AIRCRAFT APRON

The aircraft apron provides an area for aircraft to park. The apron is typically connected to the runway via taxiways or taxilanes. The aircraft-parking apron at Taylor Municipal Airport has approximately 17,600 square yards (SY) of area and contains 24 aircraft tiedowns with Group I taxilane separations. The apron PCI Index is inaccurately rated at 87. The apron pavement was overlayed in 1993, and is in fair condition. The strength of the apron is not known. The apron is lighted on both the north and south side and near the fueling area. The area immediately north of the existing aircraft-parking apron has recently been graded in anticipation of future apron expansion.

AIRFIELD LIGHTING AND SIGNAGE

Guidance on airport lighting standards is provided in FAA Advisory Circular (AC) 150/5340-24, *Runway and Taxiway Edge Lighting Systems*. Airport lighting enhances safety during periods of inclement weather and nighttime operations by providing visual guidance to pilots in the air and on the ground.

Several common airfield lighting and visual aid features of general aviation airports include a rotating beacon (activated by photoelectric cell for dusk to dawn operations), pilot-controlled Medium Intensity Runway Lights (MIRLs) (activated by aircraft radio signal), threshold lights and Runway End Identifier Lights (REILs) which mark the runway threshold with flashing strobe lights, Medium Intensity Taxiway Lights (MITLs) and/or reflective markers, and Precision Approach Path Indicators (PAPIs) to provide descent guidance information during an approach to the runway. Lighting at Taylor Municipal Airport consists of Medium Intensity Runway Lights (MIRL's) on Runway 3/21 which can be controlled by the clicks of the pilot's microphone while the radio is set on frequency 122.7 (three clicks for low intensity, five clicks for medium intensity, and seven clicks for high intensity). The runway lights have white colored lenses. The lenses at the last 1,000 feet of Runway 21 should be bi-colored with white and amber lenses. The airport also has a segmented circle and lighted wind cone, and the taxiway is marked with reflectors. Runway identification signs are located at each runway end at the hold lines. Signage at the airport includes runway and taxiway location signs at each connector taxiway as shown in Figure 1-10.

FIGURE 1-10. RUNWAY IDENTIFICATION SIGN

NAVIGATIONAL AIDS AND APPROACH PROCEDURES

The current approach procedure at the Taylor Municipal Airport include a straight-in non-precision GPS instrument approach to Runway 21 and a circling GPS approach. Services provided by FAA operated facilities include Albuquerque Air Route Traffic Control Center (ARTCC) and Prescott Flight Service Station (FSS). Enroute and radar coverage for the Taylor area is provided by the Albuquerque ARTCC. The altitude of radar coverage may vary as a result of the FAA navigational/radar facilities in operation, weather conditions and terrain which surrounds Taylor. The Prescott FSS provides additional weather data and other pertinent weather information to pilots on the ground and enroute.

A Navigational Aid (NAVAID) is any ground based visual or electronic device used to provide course or altitude information to pilots. NAVAIDs include Very High Omnidirectional Range (VORs), Very High Frequency Omnidirectional Range with Tactical Information (VOR-TACs), Nondirectional Beacons (NDBs), and Tactical Air Navigational Aids (TACANs), as examples. There are no ground based NAVAIDs at the Taylor Municipal Airport. The GPS approach to Runway 21 and the departure procedures for the Taylor Municipal Airport are illustrated in Figure 1-11. (Note: These are for information purposes only and should not be used for navigation).

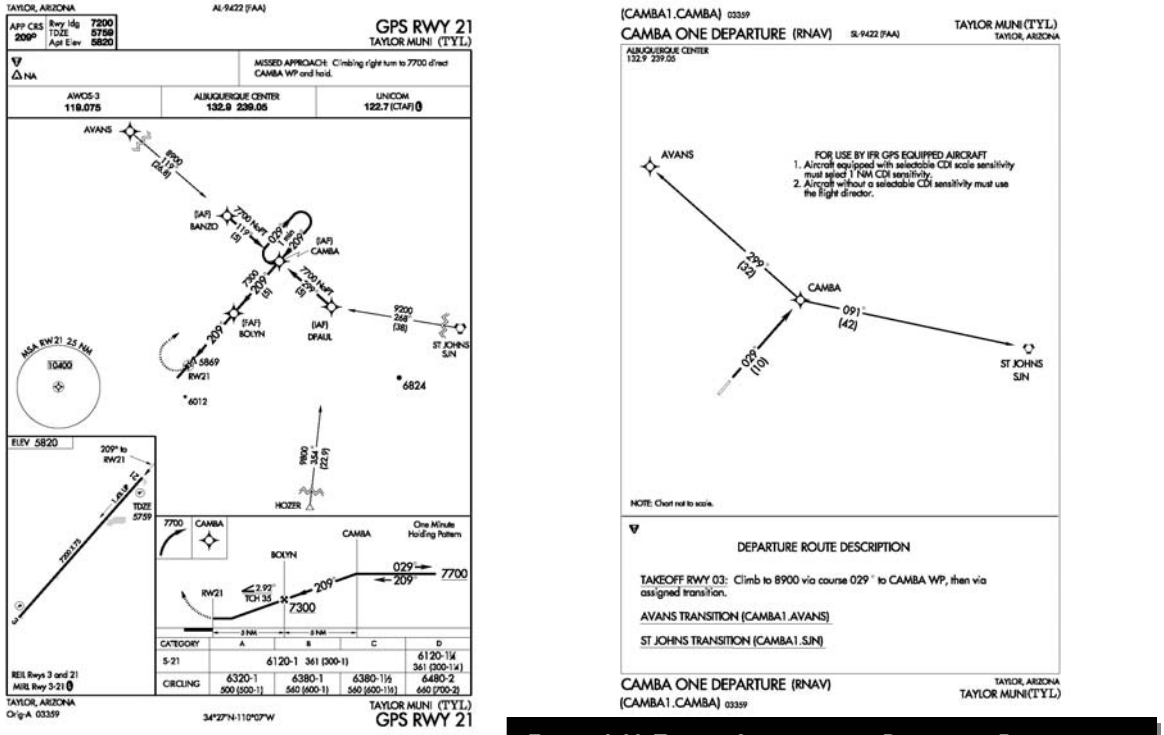


FIGURE 1-11. TAYLOR APPROACH AND DEPARTURE PROCEDURES

AIRPORT SERVICES/FIXED BASE OPERATIONS

The Taylor FBO and building area is shown in Figure 1-12. A Fixed Base Operator (FBO) is usually a private enterprise that leases land from the airport sponsor on which to provide services to based and transient aircraft. The extent of the services provided varies from airport to airport; however, these services frequently include aircraft fueling, minor maintenance and repair, aircraft rental and/or charter services, flight instruction, pilot lounge and flight planning facilities, and aircraft tiedown and/or hangar storage. The Town

FIGURE 1-12. TAYLOR BUILDING AREA

of Taylor serves as the current FBO at the Taylor Municipal Airport. The airport is attended by an airport manager Monday-Friday during regular business hours. Services provided by the Town include aircraft fueling, pilot lounge, flight planning room and aircraft parking/tie downs. Additional services are provided by Ray's Aircraft Services, a private aviation contractor, and include engine overhauls, annual inspections, fabric covering and repair.

LANDSIDE FACILITIES

BUILDING AREA

The building area of a typical general aviation airport usually consists of FBO offices and/or hangars, a pilot lounge, terminal building, eating facility, additional aircraft hangars, a maintenance building, and other related structures. Existing buildings at the Taylor Municipal Airport include one large corporate hangar (70 feet by 70 feet), which is used primarily by Ray's Aircraft Services for maintenance.

The Airport Manager's office, terminal and pilot lounge are located in a building attached to this hangar. The hangar was constructed in 1975 and the terminal building was added and attached in 1985. The terminal is approximately 5,000 square feet and the hangar is approximately 4,800 square feet. A mobile home residence is located on airport property near the auto parking area and is surrounded by several tall cottonwood trees. There are also five T-hangars located approximately 300 feet to the east of the approach end of Runway 21. The T-hangars are approximately 1,100 square feet each. There are approximately 10 automobile parking spots at the airport.

UTILITIES

Available utilities at the Taylor Municipal Airport include power, water, phone and gas. The airport is not currently served by sewer, but a sewer line is available immediately north of the airport at the corner of Willow Lane and Airport Road. Electricity is provided by APS through a 3 phase power line, natural gas is provided by Citizens Utilities, telephone services are provided by Citizens Communications and the Town of Taylor provides water and a septic system. The water line serving the airport is a six inch water line. There is a major power line (69 KV) that passes south of the airport, approximately 1,350 feet from the end of Runway 3. There are no waste treatment facilities in the vicinity of the airport. Future utility demand/capacity analysis is included in Chapter 3.

GROUND ACCESS AND SIGNAGE

The Taylor Municipal Airport can be reached by following Interstate 40 east from Flagstaff, Arizona, or west from Gallup, New Mexico, to the Holbrook exit. The Town of Taylor is located on Highway 77 south of the Holbrook exit approximately 31 miles. In Taylor, access to the airport is via Willow Lane to Airport Road. Airport signage includes one sign on Highway 77 and another sign indicating where to turn onto airport road. The signage is adequate, however, the Town should consider replacing the sign located at the junction of Willow Lane and Airport Road. The access roads to Taylor Municipal Airport are in good condition. Airport Road is also located too close to the end of Runway 21 and currently penetrates the runway object free area.

INTERMODAL TRANSPORATION

The ground transportation network in the vicinity of the Taylor Airport consists of Airport Road, Willow Road and Highway 77 or Main Street. There is no bus or rail service to Taylor. The nearest bus service is 30 miles north in Holbrook and the nearest rail service is 65 miles northwest in Winslow. The vehicle parking lot contain approximately 1,600 square yards.

AIRCRAFT FUEL FACILITIES

A Fixed Base Operator (FBO) or the airport sponsor often provides aircraft fuel services. Combinations of 100LL and 80 Octane Aviation Gas, and/or Jet-A fuel are usually provided depending on the aircraft traffic mix. These fuels may be stored in underground storage tanks, above ground storage tanks, fuel trucks or a combination of the three.

The Taylor Municipal Airport has one 5,000 gallon above ground fuel tank which contains 100 Low Lead aviation gas (Figure 1-13). The fuel concession is provided by the Town of Taylor and is dispensed by

the airport manager from a pump located next to the aircraft apron. There are only three trained personnel authorized to fuel aircraft, the airport manager, the weekend caretaker and the owner of Ray's Aircraft Services. Emergency services are available nearby and provided by the Town of Taylor. The fuel tank is double walled for secondary containment purposes. The Town of Taylor maintains a storm water pollution prevention plan (SWPPP) in accordance with Arizona Department of Environmental Quality (ADEQ) standards. The Town does not, however, maintain a Spill Prevention, Control and Countermeasure (SPCC) plan and should develop one as soon as possible.

FIGURE 1-13. TAYLOR FUEL FACILITY

AIRPORT FENCING AND SECURITY

The primary purpose of airport fencing is to prevent unwanted intrusions by persons or animals on to airport property. Airport fencing provides increased safety and security for the airport. It is normally installed along the perimeter of the airport property and outside any of the safety areas defined by the Federal Aviation Administration (FAA) in Advisory Circular (AC) 150-5300-13, *Airport Design*, and Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*. Airport fencing was installed at the Taylor Municipal Airport in conjunction with the runway extension project in 1993. The fence is constructed of five-strand barbed wire with steel posts to a height of 3 feet 8 inches. The fence is in good condition. The fencing on the southeast side of the airport was recently relocated to the new airport property line to accommodate construction of the parallel taxiway and the future apron area grading. The fence shown in Figure 1-14 is adjacent to the recently graded future apron area southeast of Runway 21. The apron area contains three light poles that provide adequate security lighting. There are currently 3 gate areas available to access the airport. The first gate is the main apron gate and pedestrian gate located between the apron and vehicle parking lot. This gate does not provide adequate access control to the apron. The second gate provides access to the AWOS and future apron area via a dirt road. The third gate is located at the north end of the airport and provides access to the five T-hangars off the end of Runway 21. The Town of Taylor has indicated that access control is a priority issue they would like improved.

FIGURE 1-14. TAYLOR PERIMETER FENCE

EMERGENCY SERVICES

Emergency fire and ambulance services are available at the Taylor Fire Department. The closest hospital is the Navopache Hospital approximately 15 miles south in Show Low.

ADDITIONAL FACILITIES

There is not currently an Airport Rescue and Fire Fighting (ARFF) equipment or personnel based at the Taylor Municipal Airport. There are also no designated security personnel at the airport. Security measures at the airport include perimeter and apron area fencing, apron area lighting and 24 surveillance

by the airport caretaker. There is also no Air Traffic Control Tower (ATCT) at the airport. The facilities and services listed on FAA Form 5010-1 for the Taylor Municipal Airport are correct.

FAA SAFETY AND DESIGN STANDARDS

FAA AC 150/5300-13, *Airport Design*, establishes design standards for airports based on the size of the airport. When design standard deficiencies exist, the FAA recommends correction of such deficiencies as soon as practicable. Design standards are based on the Airport Reference Code (ARC) and approach visibility minimums of the airport. The ARC is a combination of the wingspan and approach speed of the critical aircraft operating at the airport. The ARC for the Taylor Municipal Airport is B-II. A more detailed discussion of ARCs is included in Chapter 3. Some of the design standard deficiencies that exist at the Taylor Municipal Airport include the runway safety area grading and object free area standards for Runway 21. The safety area off the end of Runway 21 is not graded to proper dimensions and the object free area off of this runway end is penetrated by a 6-foot tree, the airport perimeter fence and the airport access road. Another important design standard deficiency at the airport is the Runway Protection Zone (RPZ) to Runway 21 that contains a business and a residence. Design standard deficiencies for the Taylor Municipal Airport are show in Table 1-8 and listed in the Airport Inventory Checklist in Appendix A.

TABLE 1-8 TAYLOR MUNICIPAL AIRPORT DESIGN STANDARD DEFICIENCIES

	B-II Standard	Deficiency
RSA	150' wide, 300' beyond runway end	Runway 21 RSA does not meet gradient standards, penetrated by fence
OFA	500' wide, 300' beyond runway end	Penetrated by fence, hangar access road and airport road
Runway Lighting	Last 1,000', lenses should be colored white/amber for instrument runway	Lenses are all white
Threshold lights	4 Threshold lights on each side required for Instrument runway	Only 3 threshold lights on each side
RPZ	No residences and places of public assembly	Business and Residence in RPZ

Source: FAA AC 150/5300-13

SAFETY AREAS

Runway and Taxiway Safety Areas (RSAs and TSAs) are defined surfaces surrounding the runway or taxiway prepared specifically to reduce the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway or taxiway. The Safety Areas must be:

- Cleared and graded and have no potentially hazardous surface variations;
- Drained so as to prevent water accumulation;
- Capable, under dry conditions, of supporting snow removal equipment, ARFF equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and
- Free of objects, except for objects that need to be located in the runway or taxiway safety area because of their function.

The runway safety area off the end of Runway 21 at the Taylor Municipal Airport does not meet these standards. The terrain off of the Runway 21 exceeds gradient standards, and the airport perimeter fence should be located outside of the runway safety area.

OBSTACLE FREE ZONE (OFZ) AND OBJECT FREE AREAS (OFA)

The OFZ is a three dimensional volume of airspace which supports the transition of ground to airborne aircraft operations. The clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible visual Navigational Aids (NAVAIDs) that need to be located in the OFZ because of their function. The runway OFZ is similar to the FAR Part 77 Primary Surface insofar that it

represents the volume of space longitudinally centered on the runway. It extends 200 feet beyond the end of each runway. The runway OFA is a two-dimensional ground area surrounding the runway. The runway OFA standard precludes parked airplanes, agricultural operations and objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. Existing OFA penetrations off the end of Runway 21 include the small tree, the perimeter fence and the airport access road mentioned previously.

THRESHOLD SITING SURFACE

According to FAA AC 150/5300-13, the runway threshold should be located at the beginning of the full-strength runway pavement or runway surface. However, displacement of the threshold may be required when an object obstructs the airspace required for landing airplanes is beyond the airport owner's power to remove, relocate, or lower. Thresholds may also be displaced for environmental considerations such as noise abatement, or to provide the standard RSA and OFA lengths. Based on the non-precision GPS instrument approach and size of aircraft using the Taylor Municipal Airport, in order to meet FAA design standards, no object should penetrate a surface that starts 200 feet from the threshold of Runway 3/21 and at the elevation of the runway centerline at the threshold and slopes upward from the threshold at a slope of 20 (horizontal) to 1 (vertical). In the plan view, the centerline of this surface extends 10,000 feet along the extended runway centerline. This surface extends laterally 400 feet on each side of the centerline at the threshold and increased in width to 1,900 feet at a point 10,000 feet from the threshold. No known objects penetrate this surface for Runway 3/21 at the Taylor Municipal Airport.

RUNWAY PROTECTION ZONE (RPZ)

According to FAA AC 150/5300-13, the RPZ is trapezoidal in shape and centered about the extended runway centerline. The RPZ dimension for a particular runway end is a function of the type of aircraft and approach visibility minimum associated with that runway end. At both ends of the Taylor Municipal Airport the RPZ begins 200 feet from the runway threshold and extends for 1,000 feet. The RPZ is 500 feet wide at the inner end and 700 feet wide at the outer end. The land uses prohibited from the RPZ are residences and places of public assembly (churches, schools, hospitals, office buildings, shopping centers and other uses with similar concentrations of persons typify places of public assembly). The trucking business and residence in the RPZ to Runway 21 are an incompatible land use. Corrective actions should be taken.

AIRSPACE CHARACTERISTICS

The National Airspace System consists of various classifications of airspace that are regulated by the FAA. Airspace is either controlled or uncontrolled. Pilots flying in controlled airspace are subject to Air Traffic Control (ATC) and must follow either Visual Flight Rule (VFR) or Instrument Flight Rule (IFR) requirements. These requirements include combinations of operating rules, aircraft equipment, and pilot certification vary depending on the Class of airspace and are described in Federal Aviation Regulations (FAR) Parts 71, *Designation of Class A, Class B, Class C, Class D, and Class E Airspace Areas; Airways; Routes; and Reporting Points*, and FAR Part 91, *General Operating and Flight Rules*.

General definitions of the Classes of airspace are provided below:

- **Class A Airspace**: Airspace from 18,000 feet Mean Sea Level (MSL) up to and including Flight Level (FL) 600.

- **Class B Airspace**: Airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of IFR operations or passenger enplanements.

- **Class C Airspace**: Generally, airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by radar approach control, and that have a certain number of IFR operations or passenger enplanements. The airspace usually consists of a five nautical mile (nm) radius core surface area

that extends from the surface up to 4,000 feet above the airport elevation and a 10 nm radius shelf area that extends from 1,200 feet up to 4,000 feet above the airport elevation.

- **Class D Airspace**: Airspace from the surface up to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports with an operational control tower.

- **Class E Airspace**: Generally, controlled airspace that is not Class A, Class B, Class C or Class D.

- **Class G Airspace**: Generally, uncontrolled airspace that is not designated Class A, Class B, Class C, Class D or Class E.

- **Victor Airways:** These airways are low altitude flight paths between ground based VHF Omnidirectional Receivers (VORs).

Figure 1-15 provides a graphical depiction of the airspace surrounding the Taylor Municipal Airport. The airport is situated under Class E airspace starting at 700 feet above the surface. Between the surface and 700 feet, the airspace is considered Class G. Class B airspace surrounds Phoenix Sky Harbor International Airport, located approximately 112 nm to the southwest. Class C airspace surrounds Tucson International Airport and Davis-Monthan Air Force Base, both located 146 nm south of Taylor. There are also a number of victor airways in the vicinity of Taylor. Victor Airway 528 (V 528) runs east/west and passes approximately 3 nautical miles south of the airport. Two other east/west airways are located near Taylor, V 190 passes approximately 20 nautical miles south of the airport and V 264 passes approximately 20 nautical miles north of the airport.

The traffic patterns to the Taylor Municipal Airport are standard left hand traffic to both runways, meaning pilots make left hand turns when approaching the airport. There are no noise abatement procedures currently in place at the airport and the estimated percentage of annual operations that are considered “touch-and-go’s” is approximately 10 percent. The Taylor Municipal Airport is also located in the vicinity of some noise sensitive national parks and wilderness areas. The Petrified Forest National Park is located approximately 20 nautical miles northeast, the Baldy Peak Wilderness Area is approximately 40 nautical miles southeast and the Hellsgate Wilderness Area is approximately 45 nautical miles southwest. Airspace and land use planning are further discussed in Chapter 3.

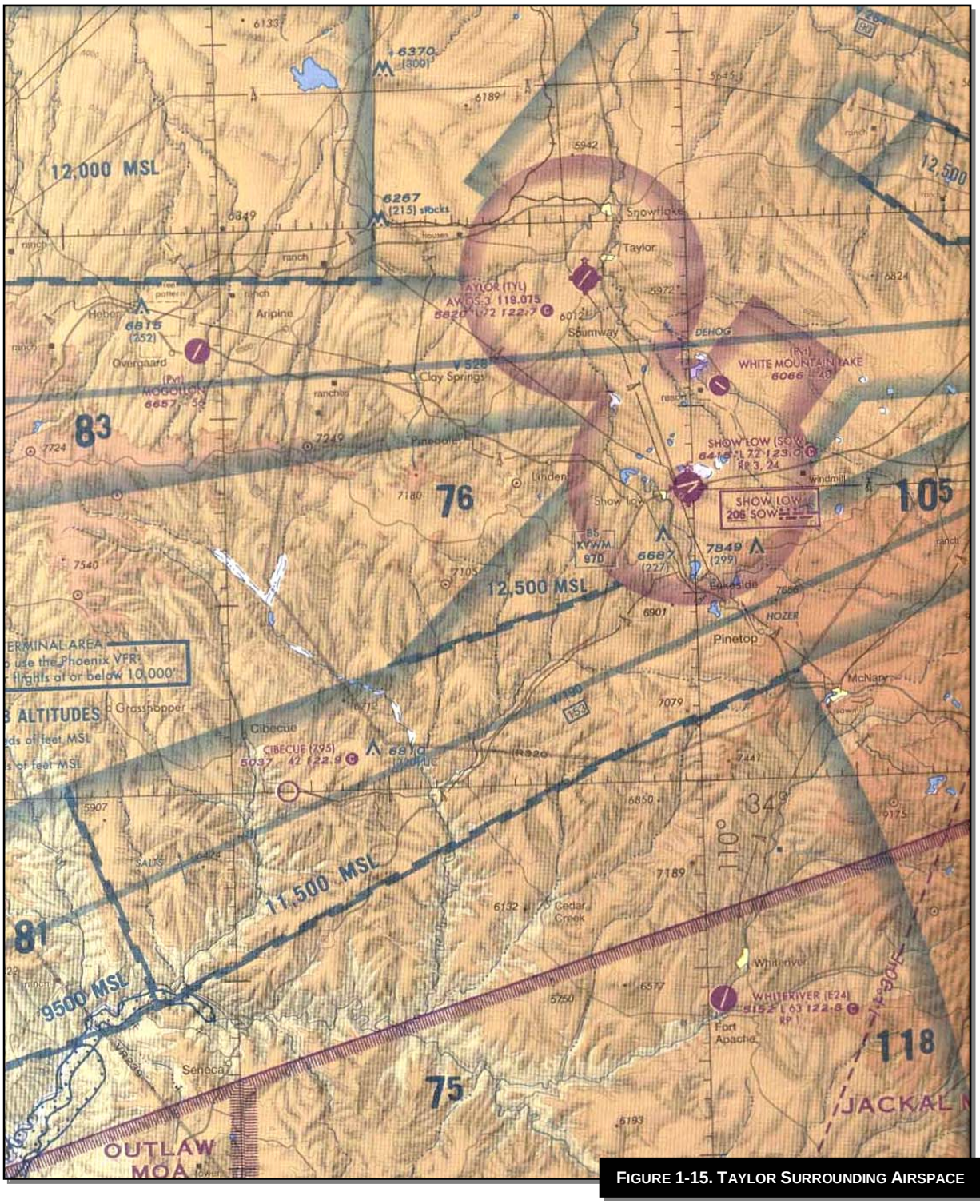


FIGURE 1-15. TAYLOR SURROUNDING AIRSPACE

AIRSPACE JURISDICTION

The Town of Taylor is located within the jurisdiction of the Albuquerque Air Route Control Center (ARTCC) and the Prescott Flight Service Station (FSS). The altitude of radar coverage by the Albuquerque ARTCC may vary as a result of the FAA navigational/radar facilities in operation, weather

conditions, and surrounding terrain. The Prescott FSS provides additional weather data and other pertinent information to pilots on the ground and enroute.

AIRSPACE RESTRICTIONS

The Taylor Municipal Airport is located north of several Military Operations Areas (MOAs) and low-level military training routes (MTRs). MOAs and MTRs are established for the purpose of separating certain military training activities, which routinely necessitate acrobatic or abrupt flight maneuvers, from Instrument Flight Rules (IFR) traffic. Nonparticipating IFR traffic can be cleared through an active MOA if IFR separation can be provided by Air Traffic Control (ATC), otherwise ATC will reroute or restrict the nonparticipating IFR traffic.

The Taylor Municipal Airport is situated approximately 35 miles north of the Jackal MOA, 45 miles northeast of the Outlaw MOA and approximately 35 miles northwest of the Reserve MOA. Use of the Outlaw MOA occurs between the hours of 7:00 AM and 6:00 PM, Monday through Friday at an altitude of 8,000 feet Mean Sea Level (MSL) or 3,000 feet Above Ground Level (AGL), whichever is higher. Use of the Jackal MOA occurs between the hours of 7:00 AM and 6:00 PM, Monday through Friday at an altitude of 11,000 feet MSL or 3,000 feet AGL, whichever is higher. Use of the Reserve MOA occurs intermittently and is published by notice to airman (NOTAM). The altitude of use for the Reserve MOA is 5,000 AGL.

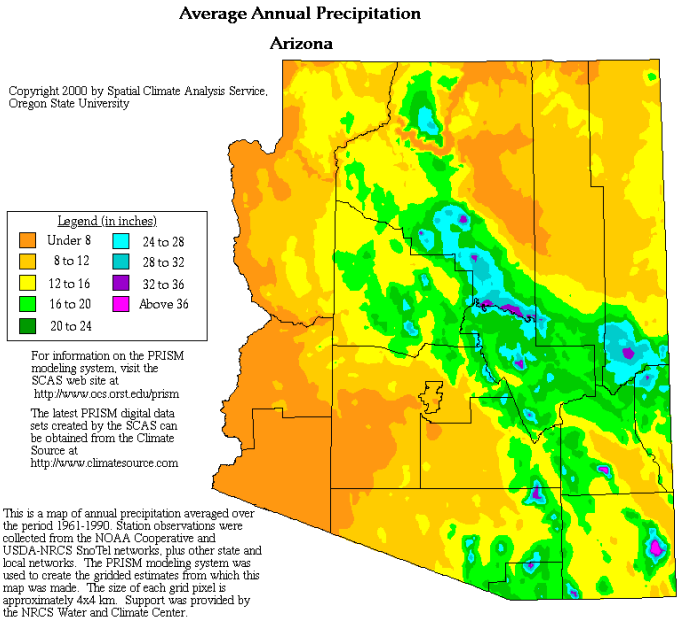
In addition to the MOAs, a Military Training Route (MTR) exists in the vicinity of Taylor. The MTR program is a joint venture by the FAA and the Department of Defense (DOD). MTRs are mutually developed for use by the military to conduct low-altitude, high-speed training. Military Training Route IR320 surrounds the Taylor area on three sides. The MTR passes approximately 13 nautical miles west of the airport, then makes a 180 degree turn approximately 30 miles south the airport and again passes the Taylor area heading north, approximately 30 miles east of the Taylor Municipal Airport. Increased vigilance is recommended for pilots operating in the vicinity of these training routes.

METEOROLOGICAL CONDITIONS

Meteorological conditions have a direct impact on the operational characteristics of an airport. These conditions determine the regulations under which operations may be conducted, the frequency of use for each operational configuration, and the instrumentation required to assist aircraft in landing and departing.

LOCAL CLIMATOLOGICAL DATA

The Town of Taylor is located in southern Navajo County in an area that receives approximately 12 to 16 inches of precipitation annually (Figure 1-16). Average annual snowfall for the Taylor Area is 17.9 inches. The average maximum temperature of the hottest month, July, is 90.0 degrees Fahrenheit, while the average minimum temperature of the coldest month, January, is 17.2 degrees. The annual average maximum temperature is 69.7 degrees, and the annual average minimum temperature is 36.4 degrees.



Source: Spatial Climate Analysis Service, Oregon State University

FIGURE 1-16. ARIZONA PRECIPITATION

CEILING AND VISIBILITY CONDITIONS

Ceiling and visibility conditions are important considerations since the occurrence of low ceiling and/or poor visibility conditions limit the use of the airport to instrument approach and departure operations until conditions change. Under poor visibility conditions or Instrument Meteorological Conditions (IMC), the pilot must operate under Instrument Flight Rules (IFR), rather than Visual Flight Rules (VFR). Under IFR, the pilot maneuvers the aircraft through sole reference to instruments in the aircraft and navigational aids on the ground. The airport must be closed for use when conditions are worse than the published IFR minimums for that airport. When flight conditions are visual, or Visual Meteorological Conditions (VMC), the pilot can maneuver the aircraft by reference to the horizon and objects on the ground.

The Taylor Municipal Airport currently has a straight-in non-precision GPS instrument approach to Runway 21 and a circling non-precision GPS instrument approach to Runway 21. The minimums for the straight-in approach are 361 feet ceilings and 1-mile visibility while the circling approach is 500-foot ceilings and 1-mile visibility.

RUNWAY WIND COVERAGE

Wind direction and speed determine the desired alignment and configuration of the runway system. Aircraft land and takeoff into the wind and therefore can tolerate only limited crosswind components (the percentage of wind perpendicular to the runway centerline). The ability to land and takeoff in crosswind conditions varies according to pilot proficiency and aircraft type.

TABLE 1-9 CROSSWIND COMPONENT

Allowable Crosswind in Knots	Airport Reference Code
10.5 knots	A-I & B-I
13 knots	A-II & B-II
16 knots	A-III, B-III, & C-I through D-III
20 knots	A-IV through D-VI

FAA Advisory Circular 150/5300-13, *Airport Design*, recommends that a runway should yield 95 percent wind coverage under stipulated crosswind components. If one runway does not meet this 95 percent coverage, then construction of an additional runway may be advisable. The crosswind component of wind direction and velocity is the resultant vector, which acts at a right angle to the runway. It is equal to the wind velocity multiplied by the trigonometric sine of the angle between the wind direction and the runway direction. The allowable crosswind component for each Airport Reference Code is shown in Table 1-9.

A wind rose was developed for the Taylor Municipal Airport using 6,678 hourly observations from the AWOS at Taylor for the period of January 2003 to December 2003. This wind rose is shown in Figure 1-17 and indicates 10.5-knot crosswind coverage of 97.62 percent and 13-knot crosswind coverage of 98.75 percent. Only one year of data was analyzed because the Taylor AWOS data is only available in hard copy format. It is recommended that the Town of Taylor connect the Taylor AWOS to the National Airspace Data Interchange Network (NADIN). This will allow national dissemination of the AWOS observations and allow the National Oceanic and Atmospheric Administration (NOAA) to digitally record the hourly observations. Better access to the Taylor AWOS will likely increase business traffic at the airport. Also, when this master plan is updated in the future, this data will then be available to update the wind analysis for the airport.

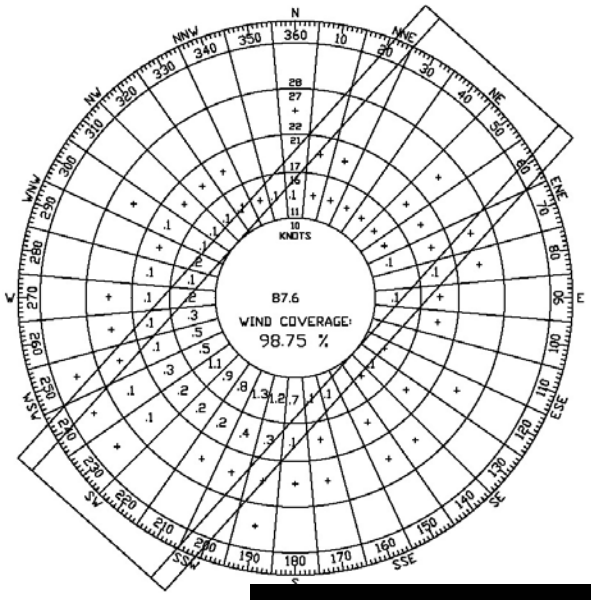


FIGURE 1-17. TAYLOR WIND ROSE

Chapter Two
Forecasts of Aviation Activity

Taylor Municipal Airport
Airport Master Plan

Chapter Two
Forecasts of Aviation Activity

INTRODUCTION

Forecasts of aviation activity serve as a guideline for the timing required for implementation of airport improvement programs. While such information is necessary for successful comprehensive airport planning, it is important to recognize that forecasts are only approximations of future activity, based upon historical data and viewed through present situations. They must therefore, be used with careful consideration, as they may lose their validity with the passage of time.

For this reason, an ongoing program of examination of local airport needs and national and regional trends is recommended and encouraged in order to promote the orderly development of aviation facilities at the Taylor Municipal Airport.

At airports not served by air traffic control towers, estimates of existing aviation activity are necessary in order to form a basis for the development of realistic forecasts. Unlike towered airports, non-towered general aviation airports have historically not tracked or maintained comprehensive logs of aircraft operations. Estimates of existing aviation activity, based upon a review of based aircraft, available historical data, available local information and regional, state and national data form the baseline to which forecasted aviation activity trends are applied.

Activity projections are made based upon estimated growth rates, area demographics, industry trends, and other indicators. Forecasts are prepared for the Initial-Term (0-5 years), the Intermediate-Term (6-10 years) and the Long-Term (11-20 years) time frames. Utilizing forecasts within these time frames will allow the construction of airport improvements to be timed to meet demand, but not so early as to remain idle for an unreasonable length of time.

There are four types of aircraft operations considered in the planning process. These are termed “local, based, itinerant and transient.” They are defined as follows:

Local operations are defined as aircraft movements (departures or arrivals) for the purpose of training, pilot currency or pleasure flying within the immediate area of the local airport. These operations typically consist of touch-and-go operations, practice instrument approaches, flights to and within local practice areas, and pleasure flights that originate and terminate at the airport under study.

Based aircraft operations are defined as the total operations made by aircraft based (stored at the airport on a permanent, seasonal, or long-term basis) at the study airport, with no attempt to classify the operations as to purpose.

Itinerant operations are defined as arrivals and departures other than local operations and generally originate or terminate at another airport. These types of operations are closely tied to local demographic indicators, such as local industry and business use of aircraft and usage of the facility for recreational purposes.

Transient operations are defined as the total operations made by aircraft other than those based at the airport under study. These operations typically consist of business or pleasure flights originating at other airports, with termination or a stopover at the study airport.

The terms transient and itinerant are sometimes erroneously used interchangeably. This study will confine analysis to local and itinerant operations.

NATIONAL AND REGIONAL TRENDS

According to factors such as aircraft production, pilot activity, and hours flown, general aviation reached a peak in the late 1970s. This peak was followed by a long downturn that persisted through most of the 1980s and the early 1990s and has been attributed to high manufacturing costs associated with product liability issues as well as other factors. The General Aviation Revitalization Act (GARA) of 1994 was enacted with the goal of revitalizing the industry by limiting product liability costs. The Act established an 18-year statute of repose on liability related to the manufacture of all general aviation aircraft and their components. According to a 2001 report to Congress by the General Accounting Office (GAO), trends in general aviation since GARA was enacted suggest that liability costs have been less burdensome to manufacturers, shipments of new aircraft have increased, and technological advances have been made. Indicators of general aviation activity, such as the numbers of hours flown and active pilots, have also increased in the years since GARA, but their growth has not been as substantial as the growth in manufacturing.

The unfortunate terrorist attacks of September 11, 2001 and the recent national recession have had a substantial impact on these positive general aviation industry trends. Significant restrictions were placed on general aviation flying following September 11th which resulted in a considerable decrease in general aviation activity. Fortunately, most of these restrictions have now been lifted and the Federal Aviation Administration (FAA) is forecasting continued growth in general aviation. The FAA annually convenes expert panels in aviation and develops forecasts for future activity in all areas of aviation, including general aviation. The FAA's most recent forecast predicts the general aviation aircraft fleet will increase at an average annual rate of 0.7 percent during the 12-year forecast period, with the number of active aircraft increasing from 211,040 in 2002 to 220,490 in 2014. The fleet of turbine aircraft is expected to increase at a greater rate than the fleet of piston aircraft; as a result, the number of piston aircraft, while continuing to increase, is expected to represent a smaller percentage of the total general aviation fleet. The General Aviation Manufacturer's Association (GAMA) produces activity forecasts based on general aviation hours flown. As shown in Table 2-1, the number of turbojet (TJ) hours is forecast to increase 90% from 2004 to 2014.

TABLE 2-1 NATIONAL GENERAL AVIATION FORECAST

	Hours Flown (in millions)				
Year	SE	ME	TP	TJ	Total
2004	18.1	2.9	2.1	3.1	30.2
2005	18.3	2.9	2.2	3.3	30.7
2006	18.4	2.9	2.1	3.6	31.1
2007	18.6	2.9	2.1	3.8	31.6
2008	18.7	2.9	2.2	4.1	32.2
2009	18.8	2.9	2.2	4.4	32.7
2010	18.9	2.9	2.2	4.7	33.2
2011	19.0	2.9	2.2	5.0	33.7
2012	19.1	2.9	2.2	5.3	34.2
2013	19.2	2.9	2.2	5.6	34.7
2014	19.3	2.9	2.3	5.9	35.2

Source: General Aviation Manufacturer's Association 2003 Statistical Handbook

Another industry trend is the increasing amount of research funding for programs like the Small Aircraft Transportation System (SATS). The National Aeronautics and Space Administration (NASA), Federal Aviation Administration, States, industry, and academic partners have joined forces to pursue the NASA National General Aviation Roadmap leading to a Small Aircraft Transportation System. This long-term strategic undertaking seeks to bring next-generation technologies and improved air access to small communities. The envisioned outcome is to improve travel between remote communities and transportation centers in urban areas by utilizing a new generation of single-pilot light aircraft for personal and business transportation between the nation's 5,400 public use general aviation airports. Current

NASA investments in aircraft technologies are enabling industry to bring affordable, safe, and easy-to-use features to the marketplace, including "Highway in the Sky" glass cockpit operating capabilities, affordable crashworthy composite airframes, more efficient IFR flight training, and revolutionary aircraft engines. To facilitate this initiative, a comprehensive upgrade of public infrastructure must be planned, coordinated, and implemented within the framework of the national air transportation system. State partnerships are proposed to coordinate research support in key public infrastructure areas. Ultimately, SATS may permit more than tripling aviation system throughput capacity by tapping the under-utilized general aviation facilities to achieve the national goal of doorstep-to-destination travel at four times the speed of highways for the nation's suburban, rural, and remote communities. A SATS conceptualization is shown in Figure 2-1.

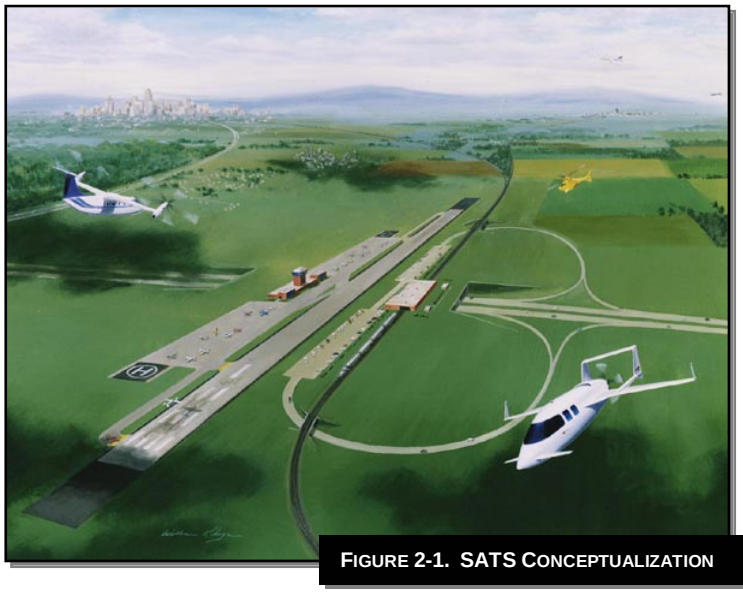


FIGURE 2-1. SATS CONCEPTUALIZATION

Source: NASA Nebraska Space Grant & EPSCoR

The continued growth in fractional ownership arrangements is yet another significant industry trend. Fractional ownership arrangements allow businesses and individuals to purchase an interest in an aircraft and pay for only the time that they use the aircraft. According to the National Business Aviation Association (NBAA), in 1986, there were three owners of fractionally held aircraft. By 1993, there were 110. From 2000 to 2002, the number of companies and individuals using fractional ownership grew by 52 percent, from 3,834 to 5,827 shares; the growth from 1999 (2,607) to 2002 was 124 percent. The number of airplanes in fractional programs grew 11 percent in 2002, from 696 to 776. The shift toward turbine aircraft is likely a result of the success of fractional ownership, the introduction of new types of turbine aircraft, and a transition from commercial air travel to corporate/business air travel as a result of September 11th.

AVAILABLE ACTIVITY FORECASTS

The first step in preparing aviation forecasts is to examine prior estimates and forecast figures. The FAA Terminal Area Forecasts (TAF) and the Arizona State Aviation Needs Study (SANS) 2000 were reviewed in June of 2004 for the Taylor Municipal Airport. The FAA TAF (January 2004) indicates 18 existing based aircraft for Taylor and 4,800 existing annual operations. The TAF numbers are forecast to remain constant through the year 2020. The Arizona SANS 2000 indicates 18 existing based aircraft and 4,800 existing annual operations at the Taylor Municipal Airport as well. However, the SANS 2000 includes a forecast of 24 based aircraft and 6,400 annual operations for Taylor by the year 2020.

FAA RECORDS OF BASED AIRCRAFT AND OPERATIONS

FAA Form 5010-1, *Airport Master Record*, is the official record kept by the Federal Aviation Administration to document airport physical conditions and other pertinent information. The record normally includes an annual estimate of aircraft activity as well as the number of based aircraft. This information is normally obtained from the airport sponsor. The accuracy of these documents varies directly with the sponsor's record keeping system. The FAA Form 5010-1 for the Taylor Municipal Airport indicates 18-based aircraft (10 single-engine and 8 multiengine) and 4,800 annual aircraft operations. This form also breaks down the Taylor operations to 1,100 Air Taxi, 3,000 GA Local and 700 GA Itinerant. This form is likely the source used for the existing based aircraft and operations counts shown in the FAA Terminal Area Forecast and the State Aviation Needs Study 2000.

EXISTING AVIATION ACTIVITY

According to the 2004 airport inventory and correspondence with the current airport manager, based aircraft and operations totals at the Taylor Municipal Airport dropped off dramatically with the closure of the FBO, Ponderosa Aviation, in June of 2002. Ponderosa Aviation provided many aviation services including on demand air charter and air taxi services at the airport.

There are currently five single-engine aircraft based at the Taylor Municipal Airport as shown in Table 2-2. The airport manager has also recorded operations during business hours at the airport from September of 2003 to September of 2004. The baseline activity levels for the purposes of this study are 5 aircraft and approximately 1,200 annual aircraft operations. These totals result in a reasonable 240 operations per based aircraft (OBPA).

TABLE 2-2 TAYLOR BASED AIRCRAFT

Type	Model	Tail Number
Single Engine Piston	Cessna 206	N4634U
Single Engine Piston	Experimental BD-4	N149RV
Single Engine Piston	Cessna 182	N9895M
Single Engine Piston	Cessna 172	N1421V
Single Engine Piston	Cherokee 180	N8619W

EXISTING BASED AIRCRAFT DEMAND

One of the existing based aircraft owners has indicated an interest in relocating to another airport and selling the T-hangar that this aircraft is stored in. However, the Town has also received inquiries from up to ten additional aircraft owners interested in basing at the Taylor Municipal Airport. Of these ten owners, six have indicated a strong interest in basing an aircraft as soon as adequate hangar space is available or land on the airport is made available to lease and allow the aircraft owner to build a hangar at his own expense. Subtracting the one existing based aircraft and adding the six new based aircraft results in 10 total aircraft. For purposes of forecasting based aircraft and operations at the Taylor Municipal Airport, it will be assumed that the based aircraft demand at the airport is 10 aircraft.

HISTORICAL BASED AIRCRAFT AND OPERATIONS

There is no accurate historical record of based aircraft and operations for the Taylor Municipal Airport. According to the 1988 Arizona State Aviation System Plan there were 16 based aircraft at the airport in 1987. According to the 1994 Airport Master Plan, there were also 16 based aircraft in 1993 and approximately 2,585 annual operations. The Town has kept no record of based aircraft and operations since 1994, however, it is estimated that the decrease in based aircraft and operations likely coincided with the departure of Ponderosa Aviation in June of 2002. There are currently no commercial service or air cargo operations at the Taylor Municipal Airport. The airport is not used for any military aircraft operations.

FORECASTS OF AVIATION ACTIVITY

BASED AIRCRAFT

A comparative analysis of based aircraft forecasts was accomplished using three methodologies to derive a preferred forecast of based aircraft for the Taylor Municipal Airport. The first method utilized a bottom-up per capita approach that projects the number of based aircraft in direct proportion to the projected combined population of Taylor and Snowflake. The existing population of Taylor/Snowflake was applied to the existing based aircraft demand developed in the previous section to estimate the per capita based aircraft demand, and was then applied to the Taylor/Snowflake population projections from Chapter 1. This resulted in 17 based aircraft at Taylor in 2025 (Table 2-3).

TABLE 2-3 PER CAPITA METHOD*

Year	Population	Aircraft
2005	9,142	10
2010	10,835	12
2015	12,528	14
2020	14,221	16
2025	15,914	17

*Preferred Based Aircraft Forecast

According to FAA Order 5090.3C, when forecast data is not available, a satisfactory procedure is to forecast based aircraft using the statewide growth rate from the January 2004 TAF and to develop activity statistics by estimating annual operations per based aircraft. The second forecasting method for based aircraft utilized the FAA's Terminal Area Forecast annual growth rate for the State of Arizona of 2% per year. This growth rate of 10% every five years results in approximately 15 based aircraft in Taylor in 2025 (Table 2-4).

TABLE 2-4 FAA TAF METHOD

Year	Based Aircraft
2005	10
2010	11
2015	12
2020	13
2025	15

The third forecasting method for based aircraft utilized a market share analysis based on the State Aviation Needs Study (SANS 2000) forecast of based aircraft for Navajo County. The 2005 SANS 2000 based aircraft projection for Navajo County was applied to the existing demand level to estimate Taylor's market share. This market share was then applied to the SANS 2000 aircraft projections. This resulted in 13 based aircraft in Taylor in 2025 (Table 2-5).

TABLE 2-5 MARKET SHARE METHOD

Year	Navajo County Based Aircraft	Taylor Market Share Aircraft
2005	111	10
2010	121	11
2015	128	12
2020	139	13
2025	147	13

The Per Capita growth rate method is recommended as the preferred based aircraft forecast. Once the airport's terminal area and hangar area are initially improved and the pending demand for basing aircraft is met, the airport is expected to at least keep pace with the population growth within the service area.

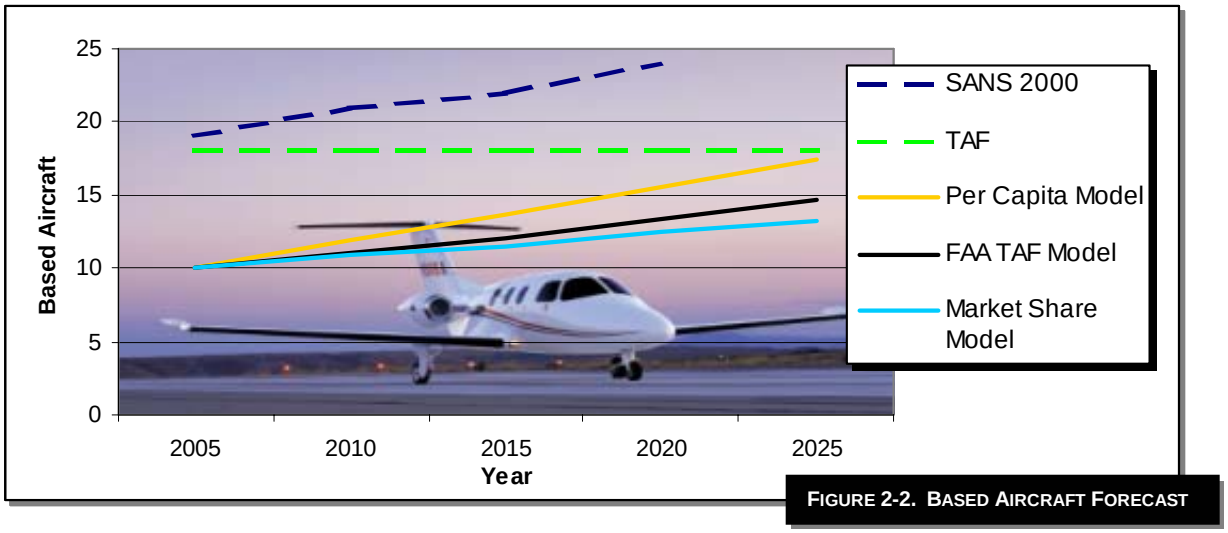


FIGURE 2-2. BASED AIRCRAFT FORECAST

OPERATIONS PER BASED AIRCRAFT (OPBA)

In order to develop a preferred method of forecasting aircraft operations at the Taylor Municipal Airport, a number of methods were analyzed. Each method utilizes the preferred based aircraft forecast developed in the previous section and applies an operations per based aircraft (OPBA) figure to the based aircraft forecast to develop a preferred operations forecast. For each method, operations are expected to significantly increase from 2005 to 2010 as the existing based aircraft demand is met. From 2010 to 2025, the OPBA at the airport are anticipated to remain constant. The methods are summarized as follows:

Method 1: Existing operations and based aircraft (240 OPBA)

Method 2: FAA Order 5090.3C (250 OPBA)

Method 3: All Arizona NPIAS GA Airports (459 OPBA)

Method 4: FAA Advisory Circular 150/5300-13 (679 OPBA)

Method 5: Arizona NPIAS GA Airports – 5 to 15 Based Aircraft (736 OPBA)

For the first method, the base year level of operations per based aircraft of 240 was applied to the preferred based aircraft forecast. Applying 240 OBPA to the preferred based aircraft forecast (Table 2-4) results in 3,514 annual operations in 2025.

A general guideline from FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)* of 250 OPBA for rural general aviation airports with little itinerant traffic was applied to the based aircraft forecast for Method 2. Applying 250 OPBA to the preferred based aircraft forecast results in 3,660 forecast operations in 2025.

For the third method, the average OPBA for all Arizona general aviation airports included in the NPIAS was calculated. This average was calculated by dividing the number of based aircraft by the number of operations at each airport according to the SANS 2000 data. The average was calculated to be 459 OPBA. Applying 459 OPBA to the preferred based aircraft forecast results in 6,720 annual operations in 2025.

The fourth method, as outlined in FAA Advisory Circular 150/5300-13, applied 637 OPBA (for NPIAS Public Use Airports) to the preferred based aircraft forecast. This method results in a forecast of 9,326 operations in 2025. For the fifth method, the average OPBA for Arizona general aviation airports included in the NPIAS with 5-15 based aircraft was calculated. The airports used in this analysis are shown in Table 2-6. This analysis resulted in an OPBA of 736 or 10,776 operations in 2025.

TABLE 2-6 AIRPORTS ANALYZED IN METHOD 5

Airport	Aircraft	Operations	OPBA
St. Johns	9	15,100	1,678
Window Rock	8	2,050	256
Bisbee Municipal	10	1,806	181
Cochise County	15	7,096	473
H.A. Clark Memorial	12	3,600	300
Colorado City	11	3,680	335
Holbrook Municipal	10	4,650	465
Whiteriver	8	5,000	625
Winslow-Lindberg	15	27,650	1,843
Ajo Municipal	5	1,500	300
Bagdad	14	14,000	1,000
TOTALS	**117**	**86,132**	**736**

These estimates provide a likely range of activity for future operations at the Taylor Municipal Airport and are shown in Figure 2-3. For planning purposes, Method 3 was selected as the preferred operations forecast for the Taylor Municipal Airport.

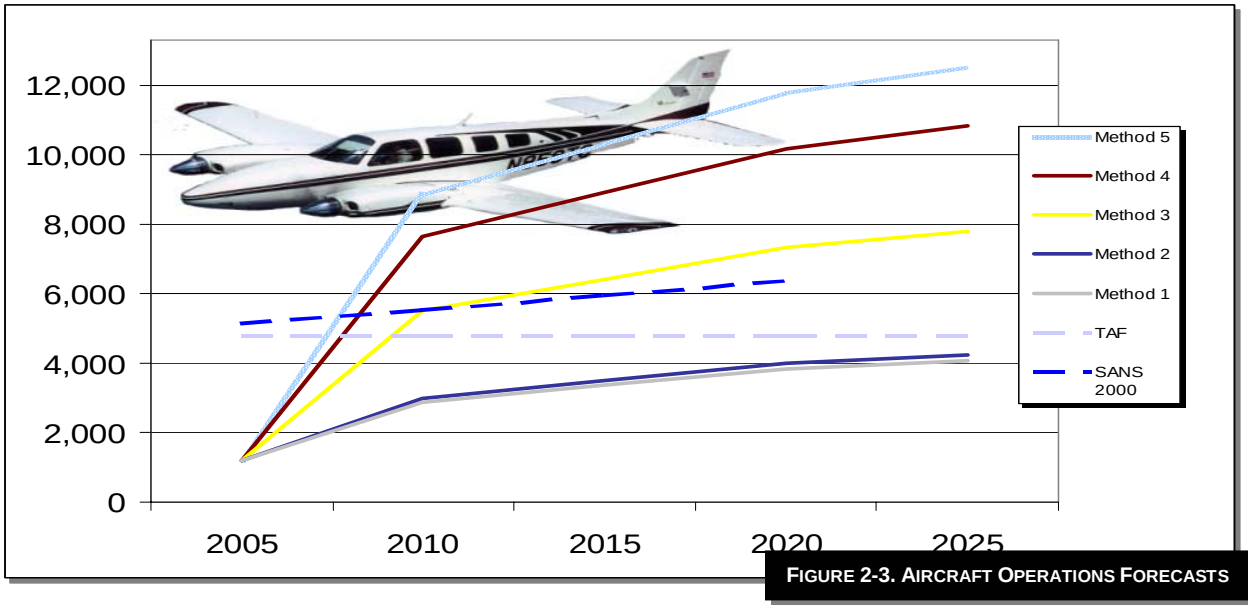


FIGURE 2-3. AIRCRAFT OPERATIONS FORECASTS

ITINERANT AND LOCAL OPERATIONS

Local operations consist primarily of training and recreational flights in the area. The remaining itinerant flights primarily consist of personal transportation, business transportation, and recreational flights to and from other airports. The percentage of local versus itinerant operations is expected to trend toward the Arizona average of 58 percent itinerant and 42 percent (Table 2-7) local based on the anticipated airport users and fleet mix described in the following section. Anticipated users whose operations would likely be considered local include ranchers, aerial observation and surveying, recreation and tourism, fire management, and flight training.

TABLE 2-7 PREFERRED FORECAST OF AVIATION ACTIVITY

Year	Based Aircraft	Local Operations	Itinerant Operations	Total Operations
2005	10	156	1,044	1,200
2010	12	1,102	4,406	5,508
2015	14	1,799	4,627	6,426
2020	16	2,570	4,774	7,344
2025	17	3,277	4,526	7,803

AIRPORT USERS AND FLEET MIX

Interviews with existing and potential users indicate the following types of operations are anticipated for the Taylor Municipal Airport:

Ranchers: Ranching is one of the primary economic activities in this part of Arizona due to the vast expanse of ranch land. Aircraft are often used in ranching to inventory and locate livestock.

Aerial Observation and Surveying: With close proximity to the Apache-Sitgreaves National Forest, the airport may provide a location for government agencies and private individuals to conduct environmental surveys, wildlife counts, and other studies. Slow flying, single-engine aircraft are generally the preferred type of aircraft for this use.

Business Transportation: The Taylor/Snowflake area is approximately a one-hour flight in a single-engine general aviation aircraft to Albuquerque, Phoenix, or Tucson versus a driving time of approximately 3.5 to 4.5 hours. Business aviation users benefit by being able to travel to or from these business centers to conduct business activities in a single day, without requiring an overnight stay or extensive ground travel time. Local and other small businesses will generally utilize single-engine and multi-engine piston aircraft. Medium sized businesses and larger corporations having a need to travel to the Taylor/Snowflake area would generally utilize multi-engine piston and turboprop aircraft, and light to medium business jets respectively. This user category also includes state and federal agencies and travel by government officials.

Personal Transportation: These users desire the utility and flexibility offered by general aviation aircraft. The types of aircraft utilized for personal transportation vary with individual preference and resources and generally include a mix of single-engine, multi-engine and in some cases turbojet aircraft.

Recreational and Tourism: These users include transient pilots flying into the region to visit recreational and tourist attractions. These users mostly utilize single-engine piston aircraft; however, a small percentage may operate multi-engine piston aircraft. Other types of aircraft in this category include home-built, experimental aircraft, gliders and ultralights.

Fire Management: Air tanker operations are predominately conducted out of the Show Low Municipal Airport. A fixed or temporary air tanker facility for fixed wing aircraft is not anticipated at the Taylor Municipal Airport due to the proximity to Show Low. However, a future fire the size of the 2002 Rodeo-Chediski fire may increase the potential of Taylor being used as an emergency air tanker facility. A mix of single-engine and multi-engine aircraft would likely conduct these operations.

Air Medivac and Medical Services: Air Medivac provides essential emergency medical transport in life threatening situations. Medical services users would be physicians traveling into the airport to provide medical or dental services in the Taylor/Snowflake area. These users utilize a variety of multi-engine turboprop and turbojet aircraft such as Cessna 421's, Beech King Airs, Pilatus PC-12s and Lear Jets.

Flight Training: These users conduct local and itinerant flights in order to meet flight proficiency requirements for obtaining FAA pilot certifications. These flights include touch-and-goes, day and night local and cross-country flights, and simulated approaches. Pilot certifications include Sport, Private, Instrument, Commercial, Instructor, and Air Transport ratings. Depending on the level of interest and aircraft availability, a multi-engine rating may or may not be available. A commercial rating may be accomplished with either a single-engine or multi-engine aircraft. Air transport ratings are usually obtained at larger regional FAR Part 121 certificated flight schools.

Search and Rescue: With close proximity to the Apache-Sitgreaves National Forest, local aircraft owners and pilots may be requested to assist in search and rescue efforts in the area. The Civil Air Patrol (CAP), a non-profit aviation-related organization is commonly known for providing these types of services on a volunteer basis. CAP also provides mentoring, flight instruction, and in some cases aircraft rentals for members and trainees (Cadets). Generally, small single-engine aircraft are used for this purpose.

Table 2-8 Detailed Forecasts by Aircraft Type

		2005	2010	2015	2020	2025
Single Engine Aircraft		10	11	12	12	11
	Operations	1,140	4,902	5,526	5,802	5,072
Multi Engine Piston/Turbo Prop Aircraft		0	0	1	1	2
	Operations	48	275	450	588	858
Turbo Jet Aircraft		0	0	0	1	1
	Operations	12	110	193	294	468
Rotorcraft		0	0	0	0	0
	Operations	0	55	64	147	234
Experimental & Other		0	1	1	2	3
	Operations	0	165	386	661	1170
Annual Operations		1,200	5,508	6,426	7,344	7,803

Based on these types of uses, local operations are expected to be conducted by predominately single-engine aircraft. Itinerant operations are expected to trend from primarily single engine piston aircraft towards the GAMA forecast fleet mix of 65% single-engine, 11% multi-engine, 6% jet, 3% helicopter, 15% experimental and other. These trends were applied to the operations forecast to derive the forecast by aircraft type shown in Table 2-8. The Learjet 25 in Figure 2-4 is an example of the types of business jet activity that that is projected to increase at the airport.

FIGURE 2-4. LEAR 25 AT TAYLOR

AIRPORT SEASONAL USE DETERMINATION

A seasonal fluctuation in aircraft operations may be expected at any airport. This fluctuation is most apparent in regions with severe winter weather patterns and at non-towered general aviation airports. The fluctuation is less pronounced at major airports, with a high percentage of commercial and scheduled airline activity.

Non-towered airports generally experience a substantially higher number of operations in summer months than off-season months. The average seasonal use trend for FAA towered airports from the 1979-1984 records (total aircraft operations handled by tower facilities nationally from *FAA Statistical Handbook of Aviation*) was used as a baseline for determining seasonal use trends. As discussed above, the seasonal fluctuation is more pronounced at non-towered airports than towered airports. The seasonal use trend for towered airports was adjusted to approximate seasonal use trends at non-towered airports. This is presented in Table 2-9 and in Figure 2-5.

TABLE 2-9 SEASONAL USE TREND

Month	Non-towered	Towered
January	3.5%	7.2%
February	4.0%	8.2%
March	4.8%	8.6%
April	7.5%	9.0%
May	11.3%	9.1%
June	13.5%	9.4%
July	14.8%	9.1%
August	13.0%	8.7%
September	10.0%	8.7%
October	8.0%	7.8%
November	5.8%	7.1%
December	3.8%	7.1%

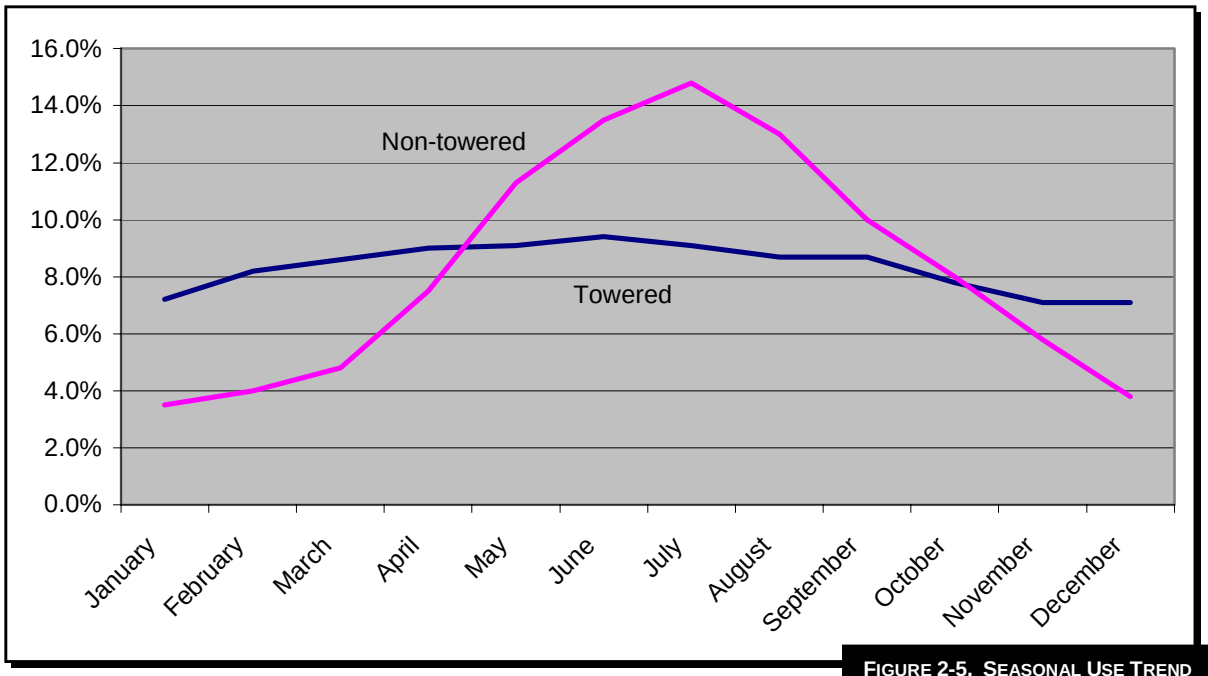


FIGURE 2-5. SEASONAL USE TREND

HOURLY DEMAND AND PEAKING TENDENCIES

In order to arrive at a reasonable estimate of demand at the airport facilities, it was necessary to develop a method to calculate the levels of activity during peak periods. The periods normally used to determine peaking characteristics are defined below:

Peak Month: The calendar month when peak enplanements or operations occur.

Design Day: The average day in the peak month derived by dividing the peak month enplanements or operations by the number of days in the month.

Busy Day: The Busy Day of a typical week in the peak month. In this case, the Busy Day is equal to the Design Day.

Design Hour: The peak hour within the Design Day. This descriptor is used in airfield demand/capacity analysis, as well as in determining terminal building, parking apron and access road requirements.

Busy Hour: The peak hour within the Busy Day. In this case, the Busy Hour is equal to the Design Hour.

The Seasonal Use Trend Curve, as presented in Table 2-9, was used as a tool to determine the peaking characteristics for the Taylor Municipal Airport. Using the Seasonal Use information, a formula was derived which will calculate the average daily operations in a given month, based on the percentage of the total annual operations for that month, as determined by the curve. The formula is as follows:

$$M = A (T / 100)$$
$$D = M / (365 / 12)$$

Where T = Monthly percent of use (from curve)
M = Average monthly operations
A = Total annual operations
D = Average Daily Operations in a given month

Approximately 90% of total daily operations will occur between the hours of 7:00 AM and 7:00 PM (12 hours) at a typical general aviation airport, meaning the maximum peak hourly occurrence may be 50% greater than the average of the hourly operations calculated for this time period.

The Estimated Peak Hourly Demand (P) in a given month was, consequently, determined by compressing 90% of the Average Daily Operations (D) in a given month into the 12-hour peak use period, reducing that number to an hourly average for the peak use period, and increasing the result by 50% as follows:

$$P = 1.5 (0.90D / 12)$$

Where D = Average Daily Operations in a given month.
P = Peak Hourly Demand in a given month.

The calculations were made for each month of each phase of the planning period. The results of the calculations are shown in Table 2-10. As is evident in the Table, the Design Day and Design Hour peak demand in the planning year occurs under VFR weather conditions in the month of July (highlighted in bold in each Table), with 38 daily operations and approximately 4.3 operations per hour in 2025.

TABLE 2-10 ESTIMATED HOURLY DEMAND/MONTH

MONTHLY/DAILY/HOURLY DEMAND

Planning Year: 2010
Operations: 5,508

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	193	6	0.7
February	4.0	220	7	0.8
March	4.8	264	9	1.0
April	7.5	413	14	1.6
May	11.3	622	20	2.3
June	13.5	744	24	2.7
July	**14.8**	**815**	**27**	**3.0**
August	13.0	716	24	2.7
September	10.0	551	18	2.0
October	8.0	441	14	1.6
November	5.8	319	10	1.1
December	3.8	209	7	0.8

Planning Year: 2015
Operations: 6,426

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	225	7	0.8
February	4.0	257	8	0.9
March	4.8	308	10	1.1
April	7.5	482	16	1.8
May	11.3	726	24	2.7
June	13.5	868	29	3.3
July	**14.8**	**951**	**31**	**3.5**
August	13.0	835	27	3.0
September	10.0	643	21	2.4
October	8.0	514	17	1.9
November	5.8	373	12	1.4
December	3.8	244	8	0.9

Planning Year: 2020
Operations: 7,344

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	257	8	0.9
February	4.0	294	10	1.1
March	4.8	353	12	1.4
April	7.5	551	18	2.0
May	11.3	830	27	3.0
June	13.5	991	33	3.7
July	**14.8**	**1,087**	**36**	**4.1**
August	13.0	955	31	3.5
September	10.0	734	24	2.7
October	8.0	588	19	2.1
November	5.8	426	14	1.6
December	3.8	279	9	1.0

Planning Year: 2025
Operations: 7,803

Month	% Use	Operations Monthly	Daily	Hourly
January	3.5	273	9	1.0
February	4.0	312	10	1.1
March	4.8	375	12	1.4
April	7.5	585	19	2.1
May	11.3	882	29	3.3
June	13.5	1,053	35	3.9
July	**14.8**	**1,155**	**38**	**4.3**
August	13.0	1,014	33	3.7
September	10.0	780	26	2.9
October	8.0	624	21	2.4
November	5.8	453	15	1.7
December	3.8	297	10	1.1

INSTRUMENT OPERATIONS

According to the FAA TAF, 45 percent of the total aircraft operations in Arizona are instrument operations. According to the TAF, this number is forecast to increase to 51 percent by 2020. Since virtually all commercial and business jet flights and most military aircraft flights are IFR, the number of instrument operations does not reflect the occurrence of instrument weather or the provision of instrument approaches at airports. At most general aviation airports with an instrument approach and no commercial service or military activity, instrument operations will comprise approximately 2-5 percent of total operations. The majority of general aviation operations are under VFR, however, based on anticipated airport users and the existing GPS non-precision instrument approach to Runway 21, there are likely a small number of instrument operations annually at Taylor Municipal Airport. Business transportation and air medivac/air ambulance are the most likely users of the instrument approach at Taylor with annual instrument operations estimated at approximately 2 percent of total operations.

FORECAST SUMMARY

Multiple forecasts were prepared for the Taylor Municipal Airport. Activity estimates were made for based aircraft operations and the ultimate fleet mix at the airport. These forecasts represent low, medium and high expected activity trends. The FAA TAF forecasts based aircraft and operations to remain constant over the 20 year planning period. However, the interest in basing aircraft at the airport shows the potential demand at the airport. This demand is currently constrained by the lack of available hangar space and the lack of a future terminal area plan at the airport. Once a terminal area plan is developed, the Town of Taylor can begin leasing ground on the airport to allow aircraft owners to construct hangars at the airport. Another option for the Town of Taylor is to construct hangars and lease the hangar space to these aircraft owners. This potential demand for basing aircraft and operating at the Taylor Municipal Airport explains why the master plan preferred forecasts exceed the TAF forecasts. Table 2-11 shows the forecast summary for the Taylor Airport Master Plan. There are no known or forecast military operations at the airport.

TABLE 2-11 FORECAST SUMMARY

	Enplanements			Itinerant Operations					Local Operations				
Year	AC	COMM	TOTAL	AC	AT & COM	GA	MIL	TOTAL	GA	MIL	TOTAL	TOT OPS	INST OPS
2005	0	0	0	0	0	1,044	0	1,044	156	0	156	1,200	24
2010	0	0	0	0	0	4,406	0	4,406	1,102	0	1,102	5,508	110
2015	0	0	0	0	0	4,627	0	4,627	1,799	0	1,799	6,426	129
2020	0	0	0	0	0	4,774	0	4,774	2,570	0	2,570	7,344	147
2025	0	0	0	0	0	4,526	0	4,526	3,277	0	3,277	7,803	156

Chapter Three
Facility Requirements

Taylor Municipal Airport
Airport Master Plan

Chapter Three
Facility Requirements

INTRODUCTION

One of the primary objectives of this planning study is to determine the size and configuration of airport facilities needed to accommodate the types and volume of aircraft expected to utilize the airport. Data from Chapter 1 and forecasts from Chapter 2 are coupled with established planning criteria to determine what improvements are necessary to airside and landside areas. Then, having established the facility requirements, alternatives for providing these facilities are provided in Chapter 4 to determine the viability of meeting the facility needs.

The time frame for addressing development need usually involves short-term (up to five years), medium-term (six to ten years), and long-term (eleven to twenty year) periods. Long range planning primarily focuses on the ultimate role of the airport and is related to development. Medium-term planning focuses on a more detailed assessment of needs, while the short-term analysis focuses on immediate action items and may include details not geared towards long-term development.

AIRPORT REFERENCE CODE

The Airport Reference Code (ARC) is a system established by the FAA that is used to relate airport design criteria to the operational and physical characteristics of the aircraft currently operating and/or intended to operate at the airport. The ARC has two components relating to the airport design aircraft. The first component, depicted by a letter, is the Aircraft Approach Category and relates to aircraft approach speed (operational characteristics). The second component, depicted by a Roman numeral, is the Aircraft Design Group and relates to aircraft wingspan (physical characteristic). Generally, aircraft approach speed applies to runway dimensional criteria and safety zones prior to and beyond the end of the runway. Aircraft wingspan is primarily associated with separation criteria involving taxiways and taxilanes. Table 3-1 has been included to provide a definition of both Aircraft Approach Categories and Aircraft Design Groups. Figure 3-1 shows examples of aircraft and their Airport Reference Codes.

To ensure that all airport facilities are designed to accommodate the expected air traffic and to meet FAA criteria, the specific ARC for the airport must be determined. In order to designate a specific ARC for an airport, aircraft in that ARC should perform a minimum of 500 annual itinerant operations. The aircraft currently using the

TABLE 3-1
AIRCRAFT APPROACH CATEGORIES AND DESIGN GROUPS

AIRCRAFT APPROACH CATEGORY: An aircraft approach category is a grouping of aircraft based on an approach speed of 1.3 times the stall speed of the aircraft at the maximum certificated landing weight.

Aircraft Category	Approach Speed
Category A	Speed less than 91 knots
Category B	91 knots or more but less than 121 knots
Category C	121 knots or more but less than 141 knots
Category D	141 knots or more but less than 166 knots
Category E	166 knots or more

AIRCRAFT DESIGN GROUP: The aircraft design group subdivides aircraft by wingspan. The aircraft design group concept links an airport's dimensional standards to aircraft approach categories or to aircraft design groups or to runway instrumentation configurations. The aircraft design groups are:

Design Group	Aircraft Wingspan
Group I	Up to but not including 49 feet
Group II	49 feet up to but not including 79 feet
Group III	79 feet up to but not including 118 feet
Group IV	118 feet up to but not including 171 feet
Group V	171 feet up to but not including 214 feet
Group VI	214 feet up to but not including 262 feet

AI

Primarily Single-Engine Propeller Aircraft, some light twins

Example Type: Cessna 172 Skyhawk

BI

Primarily Light Twin-Engine Propeller Aircraft

Example Type: Piper Navajo

BII

(<12,500 lbs)
Primarily Light Turboprops

Example Type: Beechcraft King Air

BII

(>12,500 lbs)
Mid-sized corporate jets and commuter airliners

Example Type: Cessna Citation II

A/BIII

Primarily large commuter-type aircraft

Example Type: De Havilland Dash 8

CI, DI

Primarily small and fast corporate jets

Example Type: Lear Jet 36

C/DII

Large corporate jets and regional-type commuter jets

Example Type: Gulfstream IV

C/DIII

Commercial airliners (approx. 100-200 seats)

Example Type: Boeing 737

C/DIV

Large commercial airliners (approx. 200-350 seats)

Example Type: Boeing 767

DV

Jumbo commercial airliners (approx. 350+ seats)

Example Type: Boeing 747

FIGURE 3-1. AIRPORT REFERENCE CODES

Taylor Municipal Airport have an ARC of A-I, B-I and B-II. Airport users and fleet mix were discussed in Chapter 2. Examples of aircraft with an ARC of A-I and B-I are listed in Table 3-2. Examples of aircraft with an ARC of A-II and B-II are listed in Table 3-3. These are the types of aircraft expected to utilize the airport in the short, medium and long-term time frames. A small number of operations by C-I and C-II aircraft occur at Taylor given the available runway length and the existing GPS approach.

This information indicates that fundamental development items in the short-term should be based on an ARC of B-II for aircraft weighing up to 45,000 pounds. Although forecasted demand levels do not indicate a need for upgrading the ARC to C-II or greater within the 20-year planning period, where feasible, future facilities should be developed to meet C-II design standards as to minimize any constraints for upgrading the ARC should it become necessary.

TABLE 3-2 EXAMPLE AIRCRAFT HAVING AN ARC OF A-I OR B-I

Aircraft	Approach Speed (knots)	Wingspan (feet)	Max T.O. Weight (pounds)
Beech Baron 58P	101	37.8	6,200
Beech Bonanza V35B	70	33.5	3,400
Beech King Air B100	111	45.9	11,799
Cessna 150	55	33.3	1,670
Cessna 172	60	36.0	2,200
Cessna 177	64	35.5	2,500
Cessna 182	64	36.0	2,950
Cessna 340	92	38.1	5,990
Cessna 414	94	44.1	6,750
Cessna Citation I	108	47.1	11,850
Gates Learjet 28/29	120	42.2	15,000
Mitsubishi MU-2	119	39.1	10,800
Piper Archer II	86	35.0	2,500
Piper Cheyenne	110	47.6	12,050
Rockwell Sabre 40	120	44.4	18,650
Swearingen Merlin	105	46.3	12,500
Raytheon Beechjet	105	43.5	16,100

Source: FAA AC 150/5300-13, Airport Design

TABLE 3-3 EXAMPLE AIRCRAFT HAVING AN ARC OF A-II OR B-II

Aircraft	Approach Speed (knots)	Wingspan (feet)	Max T.O. Weight (pounds)
Air Tractor 802F	105	58.0	16,000
Beech King C90-1	100	50.3	9,650
Beech Super King Air B200	103	54.5	12,500
Cessna 441	100	49.3	9,925
Cessna Citation II	108	51.6	13,300
Cessna Citation III	114	50.6	17,000
Dassault Falcon 50	113	61.9	37,480
Dassault Falcon 200	114	53.5	30,650
Dassault Falcon 900	100	63.4	45,500
DHC-6 Twin Otter	75	65.0	12,500
Grumman Gulfstream I	113	78.5	35,100
Pilatus PC-12	85	52.3	9,920

Source: FAA AC 150/5300-13, Airport Design

AIRSIDE FACILITY REQUIREMENTS

The airside facilities of an airport are described as the runway configuration, the associated taxiway system, the ramp and aircraft parking area and any visual or electronic approach aids.

RUNWAY REQUIREMENTS

Annual Service Volume: The Annual Service Volume (ASV) is a calculated reasonable estimate of an airport's annual capacity; taking into account differences in runway utilization, weather conditions and aircraft mix that would be encountered in one year. When compared to the forecasts or existing operations of an airport, the ASV will give an indication of the adequacy of a facility in relationship to its activity level. The ASV is determined by reference to the charts contained in FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*.

The FAA Airport Design Program was used to calculate the ASV for a single runway airport with the forecasted operation levels determined in Chapter 2. Annual Service Volume for a single runway configuration is 230,000 operations per year. Under these conditions, a single runway facility will adequately meet the capacity demand within the time frame of this study.

Demand/Capacity: The methodology for computing the relationship between an airport's demand versus its capacity is contained in FAA AC 150/5060-5.

To facilitate this comparison, computations were made to determine the hourly capacity of a single runway configuration in VFR and in IFR. The calculations were made using the assumptions recommended in the Advisory Circular for the particular airport layout and conditions, combined with the forecast operational data generated with this study. The following is a tabulation of the physical aspects of the four aircraft classes (not to be confused with the aircraft approach categories discussed earlier), as considered in the capacity computations.

The majority of existing operations at the Taylor Municipal Airport are conducted by Class A and B aircraft. For ultimate conditions, approximately 10% of operations by Class C aircraft are estimated. No airspace limitations exist which would affect runway use. In all calculations, it is assumed that arrivals equal departures, and that "touch-and-go" activity accounts for no more than 25% of total operations.

TABLE 3-4 FAA AIRCRAFT CLASSIFICATIONS FOR CAPACITY CONSIDERATIONS

Class	Maximum Takeoff Weight	Engines
A	12,500 lbs. or less	Single Engine
B	12,500 lbs. or less	Multi Engine
C	12,500 to 300,000 lbs.	Multi Engine
D	Over 300,000 lbs.	Multi Engine

Runway Capacity: Using the above conditions and applying them to the Hourly Capacity charts in the Advisory Circular, the average peak capacities for a single runway configuration were determined as shown in Table 3-5. The Design Hour operations in 2025 represent approximately 4% of the estimated hourly capacity of the runway under VFR conditions and 6% of the estimated hourly capacity of the runway under IFR conditions.

TABLE 3-5 HOURLY CAPACITY, OPERATIONS PER HOUR (2025)

	VFR	IFR
Single Runway	98	59

Runway Length: The FAA has developed a computer software program entitled "Airport Design." The program provides the user with recommended runway lengths and other facilities on an airport according to FAA design standards. The information required to execute the program for recommended runway lengths, includes airfield elevation, mean maximum temperature of the hottest month and the effective gradient for the runway. This specific information for the Taylor Municipal Airport was used for the purposes of this portion of the study:

Field Elevation: 5,820' MSL
Mean Maximum Temperature of Hottest Month: 90.0° F
Effective Gradient: 105 Feet

(Note: The actual difference in feet from runway end to runway end is required to run the FAA software program and is listed as the effective gradient. However, the effective gradient is usually shown as a percent.)

With this data, the Airport Design program provides several runway length recommendations for both small and large aircraft according to varying percentages of aircraft fleet and associated takeoff weights. A summary of the data provided by the program is listed in Table 3-6.

TABLE 3-6 RECOMMENDED RUNWAY LENGTH

Description	Runway Length
Existing Runway Length	7,203'
Recommended to accommodate:	
Small Aircraft (<12,500 lbs.)	
Less than 10 passenger seats	
75 percent of these small airplanes	5,100'
95 percent of these small airplanes	7,220'
100 percent of these small airplanes	7,220'
10 or more passenger seats	7,220'
Large Aircraft (>12,500 lbs., <60,000 lbs.)	
75 percent of these planes at 60 percent useful load	8,100'
75 percent of these planes at 90 percent useful load	9,650'
100 percent of these planes at 60 percent useful load	12,050'
100 percent of these planes at 90 percent useful load	12,050'

Source: FAA Computer Software Program, Airport Design Version 4.2d

Using only the results of the FAA's software program, it would be fair to suggest that the runway should have a minimum length of 7,220 feet. This would accommodate 100 percent of the small aircraft fleet. However, it is important to identify the runway length requirements for the specific aircraft that are expected to operate at the airport.

Takeoff Distance Requirements: When determining runway length requirements for any airport it is necessary to consider the types of aircraft (aircraft design group and critical aircraft) that will be using the airport and their respective takeoff distance requirements. Figure 3-2 gives examples of takeoff distance requirements for the aircraft currently using the Taylor Municipal Airport and aircraft that could potentially use the airport in the future.

Based on the required runway lengths for these categories of aircraft, the existing runway length of 7,203 feet provides adequate takeoff distance for forecasted operations throughout the planning period. This length accommodates the single-engine piston aircraft fleet, most of the twin-engine piston, light turboprop and B-II turbojet aircraft fleet.

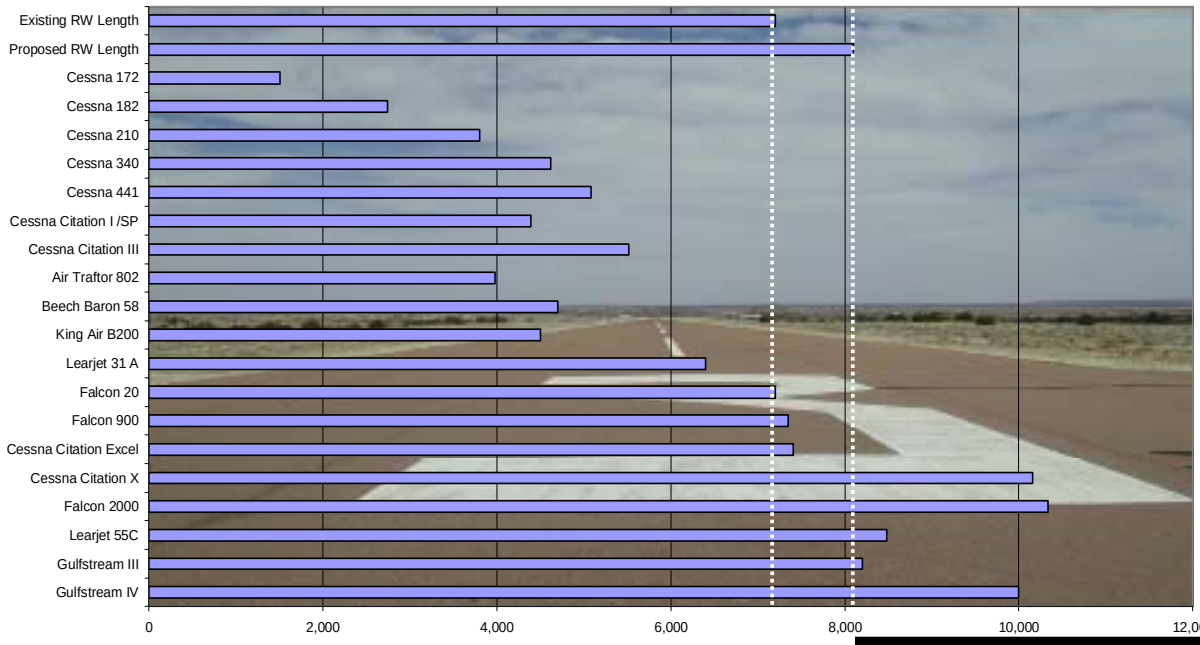


FIGURE 3-2. RUNWAY LENGTH CHART

**Aircraft performance data based on a mean maximum temperature of the hottest month of 91.9^{o} F and an airport elevation of 5,428 feet mean sea level (MSL).*

Large aircraft requiring in excess of 7,203 feet of runway length are primarily C-II aircraft. Where feasible, obstruction clearances, land uses and property ownership should be established to accommodate a potential runway extension to 8,100 feet in the event the airport is upgraded to ARC C-II.

Runway Strength and Width: Runway strength requirements are normally based upon the design aircraft that may be expected to use the airport on a regular basis. The existing runway strength of 12,500 pounds Single Wheel Gear (SWG) is adequate to accommodate the aircraft currently using the airport.

FAA design standards for runways serving aircraft having an ARC of B-II require a minimum runway width of 75 feet. Runways serving aircraft with an ARC of C-II require a minimum width of 100 feet. A strengthening overlay to increase the pavement strength to 30,000 pounds should be accomplished if more than 500 operations occur by aircraft weighing more than 12,500 pounds. A runway widening to 100 feet in conjunction with a runway strengthening should be accomplished if operations by aircraft in approach category C exceed 500 annually.

CROSSWIND RUNWAY REQUIREMENTS

The FAA recommends that a runway's orientation provide at least 95 percent crosswind coverage. If the wind coverage of the runway does not meet this 95 percent minimum for the appropriate ARC, then a crosswind runway should be considered.

The wind study analysis described in Chapter 1 indicated that Runway 3/21 at the Taylor Municipal Airport meets the FAA standard of at least 95 percent crosswind coverage according to the 2003 AWOS wind data. Local pilots also report the wind as prevailing from the south-southwest. Wind data from the AWOS should be connected to the National Weather Service for recording purposes. During the next Master Plan Update, ten years worth of data should then be analyzed.

RUNWAY INCURSIONS

There are currently no runway incursion mitigations measures in pace at the Taylor Municipal Airport; nor are ay recommended dues to the single runway configuration.

TAXIWAY REQUIREMENTS

Length and Width: The primary function of a taxiway system is to provide access between runways and the terminal area. The taxiways should be located so that aircraft exiting the runway will have minimal interference with aircraft entering the runway or remaining in the traffic pattern. Taxiways expedite aircraft departures from the runway and increase operational safety and efficiency. The construction of a parallel taxiway system is considered essential at airports having at least 20,000 annual operations or those served by commercial service.

According to FAA Advisory Circular 150/5300-13, Airport Design, the minimum recommended runway to taxiway centerline separation for an airport with an ARC of B-II is 240 feet and the minimum recommended width is 35 feet. The minimum recommended runway to taxiway separation for an airport with an ARC of C-II or B-II with an instrument approach with visibility minimums lower than ¾-mile is 300 feet. Approximately 4,800 feet of the existing parallel taxiway at the Taylor Municipal Airport was constructed in 2004. This portion of taxiway was constructed at a runway separation of 300 feet to allow for a future upgrade of the airport reference code to C-II or a future instrument approach with visibility minimums of lower than ¾-mile. The remaining 2,400 feet of the parallel taxiway at the Taylor Municipal Airport is located at a runway separation of 240 feet. The entire taxiway is 35 feet wide. When aircraft operations by approach Category C aircraft exceed 500 annually, or the instrument approach minimums are lowered to less than ¾ miles, the 2,400 feet of parallel taxiway at 240-foot separation should be relocated to 300 feet.

Strength: The strength of the taxiway should be maintained at a strength equal to that of the primary runway pavement.

AIRCRAFT APRON

The apron space requirements as shown in this planning document were developed according to recommendations given in AC 150/5300-13, *Airport Design*. Consideration must be made in the overall apron requirements for aircraft parking and tiedown requirements, taxilanes, adjacent taxiways and proximity to all aircraft expected to use the airport, including turboprops and business jets.

All existing based aircraft are currently hangared and all future based aircraft owners have indicated the desire to hangar the aircraft. Consequently, future apron square yardage should be planned for transient aircraft only. The existing aircraft parking apron provides a sufficient number of tiedowns; however, reconfiguring the apron will enable the fueling island (which currently obstructs the taxiway) to be relocated, will provide adequate parking for larger aircraft, and will provide building sites for up to four new hangars.

Tiedown Requirements: Aircraft tiedowns should be provided for those small and medium sized aircraft utilizing the airport. These aircraft risk being damaged or may cause damage or injury in sudden wind gusts if not properly secured. Approximately 20 tiedowns are required to accommodate the forecasted peak daily transient aircraft and overnight transient aircraft, plus based aircraft that are not hangared. The current tiedown layout is based on Group I taxilane OFAs. The future apron layout should be expanded to provide for Group II taxilane OFAs.

Apron Requirements:

Generally speaking, an apron tiedown area should allow approximately 360 square yards per transient aircraft and 300 square yards per based aircraft. This square yardage per aircraft provides adequate space for tiedowns, circulation and fuel truck movement. The Town of Taylor should plan for additional apron expansion and taxilane expansion to T-hangars. Demand for T-hangar space has been indicated and the Town should take advantage of this revenue generating opportunity. The current PCI index for the apron is listed as 87 or fair condition. Again, this PCI value anticipated a crack and slurry seal application that was not applied, so the actual PCI value is less than 87. It is estimated that in order to accommodate a reconfigured apron with Group II taxilanes, an additional 5,000 square yards of apron will be required.

NAVIGATIONAL AIDS

A Navigational Aid (NAVAID) is any ground based visual or electronic device used to provide course or altitude information to pilots. NAVAIDs include Very High Omnidirectional Range (VORs), Very High Frequency Omnidirectional Range with Tactical Information (VOR-TACs), Nondirectional Beacons (NDBs), and Tactical Air Navigational Aids (TACANs), as examples. There are no ground based NAVAIDs at the Taylor Municipal Airport and none are recommended.

APPROACH PROCEDURES

Non-precision Global Positioning System (GPS) approaches do not require ground-based facilities on or near the airport for navigation. The GPS receiver uses satellites for navigation allowing remote installation. Therefore, it involves little or no cost for the Airport Sponsor. GPS was developed by the United States Department of Defense for military use and is now available for civilian use. GPS approaches are rapidly being commissioned at airports across the United States. Approach minimums as low as 350-foot ceilings and 1-mile visibility are typical for this type of approach. An instrument approach will increase the utility of the airport by providing for the capability to operate in inclement weather conditions. This is especially important for air medivac/air ambulance, physician transport and business flights. It is also useful for conducting training and maintaining instrument currency and proficiency requirements.

The existing approach procedure at the airport includes a non-precision instrument GPS approach to Runway 21. The approach minimums for this approach are 361-foot ceiling and 1-mile visibility. A future potential approach that should be considered is a GPS approach procedure with vertical guidance (LNAV/VNAV) using the Wide Area Augmentation System (WAAS). This approach could potentially provide instrument minimums as low as 300-foot ceilings and ¾-mile visibility. The LNAV/VNAV approach would increase the FAR Part 77 Primary Surface from 500 feet wide to 1,000 feet wide. The hangars located at 400 feet from the runway centerline would be a penetration of the primary surface; however, the Obstacle Free Zone (OFZ) would remain clear and pending the results of an airspace analysis, the hangars could be obstruction lighted without affecting the approach.

The key to this type of approach would be a runway obstacle free zone (OFZ) and runway object free area (OFA) clear of obstructions. The width of the OFA would increase to 800-feet (400-feet on each side of the runway) with the upgrade of the airport reference code to C-II or the lowering of the instrument approach minimums to less than ¾-mile visibility. In order to protect for the future precision approach, all future buildings at the Taylor Municipal Airport should be setback at least 400 feet from the runway centerline. This approach would also require the relocation of the existing FBO hangar and terminal building as they are currently not setback 400 feet. Additionally, the FAR Part 77 primary surface and transitional surface penetrations (described later in this Chapter) should be obstruction lighted.

AIRFIELD LIGHTING, SIGNAGE, MARKING AND VISUAL AIDS

Airport lighting enhances safety during periods of inclement weather and nighttime operations by providing visual guidance to pilots in the air and on the ground. Lighting and visual aids can consist of a variety of equipment or a combination thereof as described in Chapter 1. The airport's existing inventory of lighting and visual aids includes two-box precision approach path indicators, a rotating beacon, medium intensity runway lights (MIRLs), lighted signs, runway end identifier lights (REILs), 6-light runway threshold lights, visual runway markings, a segmented circle, and taxiway reflectors. The airport terminal area is also protected with area security lighting. The majority of the airfield lighting and visual aids are in good condition and should be maintained in their present condition. The immediate lighting upgrades needed are replacement of the MIRLs and installation of two-way bicolored white/amber globes at the last 2,000-feet of Runway 21 and the replacement of the 6-light runway threshold light system with a 8-light system. An approach lighting system (ALS) such as ODALS, MALS, MALSF, SSALS, SALS would be necessary to obtain ¾-mile visibility minimums. The ALS is designed to provide earlier visual acquisition of the runway approach in visibility limiting Instrument Meteorological Conditions (IMC).

Runway 3/21 is currently marked as a visual runway at both ends. Because there is a published instrument approach procedure to Runway 21, this runway should be remarked with non-precision instrument runway markings.

LANDSIDE FACILITY REQUIREMENTS

Landside facilities are another important aspect of the airport. Landside facilities serve as the processing interface between the surrounding community and the airport operating environment. Likewise, it offers the traveler the first impression of the airport and the local area. Landside facilities house the support infrastructure for airside operations and often generate substantial revenues for the airport.

TERMINAL BUILDING

The existing terminal building is shown in Figure 3-3. The construction of a terminal building at any airport offers many amenities to passengers, local and transient pilots and airport management. Terminal buildings (often called pilot lounges at general aviation airports) most often house public restrooms, public telephones, a pilot's lounge and information regarding airport services. The existing terminal building at the Taylor Municipal Airport is attached to the FBO maintenance hangar. The terminal building includes a lobby area, restrooms, telephone, a flight planning room and airport management offices. The terminal building is well maintained and provides adequate space and amenities to accommodate existing and long term demand.

FIGURE 3-3. EXISTING TERMINAL AND HANGAR

HANGAR FACILITIES

Hangars are typically classified as either T-hangars, small multi-unit storage complexes that usually accommodate one single engine aircraft in each unit, or conventional hangars, small to very large units, which accommodate a variety of aircraft types or corporate fleets. The number of aircraft that each conventional hangar can hold varies according to the manufacturer and the specifications of the airport owner or operators. The existing hangars at the Taylor Municipal Airport include the 70-foot by 70-foot FBO maintenance hangar and 5 T-hangars located off the end of Runway 21. The T-hangars are shown in Figure 3-4.

FIGURE 3-4. EXISTING T-HANGARS

Based Aircraft Hangar Requirements: Future facility requirements for based aircraft typically determine the number of tiedown locations, number of shaded spaces, number of T-hangars and number of conventional type hangars required. The forecast of based aircraft in Chapter 2 estimates 10 aircraft based at the airport once hangar facilities or land to build hangars is included in a terminal area plan and made available to lease. Planning for future hangars should include a mix of T-hangars, box hangars and some larger corporate hangars.

Transient Aircraft Hangar Requirements: Transient single-engine aircraft operators generally do not require aircraft storage facilities unless there is inclement weather expected (such as hail or snow) or if the operator is planning an extended stay. Some higher performance single-engine and multi-engine aircraft operators may desire overnight aircraft storage or a heated hangar in the winter.

General: The airport sponsor should consider providing long-term land leases to interested parties for the construction of aircraft storage hangars. Allowing the tenant to retain ownership of the hangar while

leasing the ground reduces capital outlay requirements for the Town of Taylor, enables the Town to collect property taxes on the hangar and other improvements and provides motivation for the tenant to maintain the hangar in good condition to maximize resale value at the end of the lease period. However, recent legislation has made aircraft hangars an eligible cost under the Airport Improvement Program (AIP). While this creates an opportunity for airport sponsors willing to build hangars to meet existing demand, hangars are still typically considered a lower priority than airside projects. The Town of Taylor should still consider applying for federal grants to construct needed hangars. The Town should also charge a standard annual, monthly and overnight tiedown fee for use of the open apron.

AVIATION FUEL FACILITIES

Fuel is available Monday-Saturday during business hours at the Taylor Municipal Airport. The Town of Taylor offers 100-Low Lead avgas to based and transient aircraft owners. Based upon a review of historical monthly fuel sales, the existing avgas fuel facility is sufficient to handle normal avgas demand. The existing fuel facility at the Taylor Municipal Airport will need to be relocated as the existing location results in aircraft penetration of the taxiway object free area (TOFA) during refueling. The system is also outdated and repair parts are no longer available. It is also recommended that a self-serve credit card reader fueling system be installed to provide 24-hour fuel access at the airport. If the Town of Taylor desires to attract more business jet traffic, consideration should also be given to adding a Jet-A fuel tank or fuel truck. Recent legislation has also made airport fuel facilities eligible for federal funding under AIP. However, as with hangars, fuel facility projects are also considered a low priority. The Town of Taylor should still apply for federal grants to relocate and replace the existing fuel facility.

AIRPORT ACCESS AND VEHICLE PARKING

The Taylor Municipal Airport is accessed by traveling west on Willow Lane off of Main Street (Highway 77) and then turning left or south on Airport Road. The current location of Airport Road penetrates the Runway 21 object free area (ROFA). It is recommended that Airport Road be relocated to correct this design standard deficiency. It is recommended that the airport provide adequate automobile parking to accommodate pilots, employees, visitors and passengers. Peak hour demand estimates were developed in Chapter 2 and were used to determine vehicle-parking requirements. The peak hour estimates would require a minimum of 8 vehicle-parking spaces for pilots, employees, visitors and passengers in the short term and 10 vehicle-parking spaces in the medium to long term. Existing vehicle parking should be reconfigured in conjunction with the apron reconfiguration.

FENCING AND SECURITY

The Taylor Municipal Airport is currently encompassed by a five-strand barbed-wire fence and the terminal area is surrounded by a four-foot chain link fence. The primary purpose of this fencing is to restrict inadvertent access to the airport by wildlife and persons. There are currently three gate areas available to access the airport. The gate area at the end of Runway 21 should be closed as it is a runway object free area (OFA) penetration and access to the hangars at the Runway 21 end should be provided through one of the two gates located near the terminal area. This gate access should be considered in the terminal area plan.

AIRPORT RESCUE AND FIRE FIGHTING (ARFF) EQUIPMENT & STORAGE BUILDING

Airport Rescue and Fire Fighting (ARFF) equipment is not required at airports that do not serve scheduled passenger service with aircraft having 10 or more passenger seats. Local municipal or volunteer fire departments typically provide fire protection to general aviation airports in their district. Mutual aid agreements may also be provided for nearby fire departments to assist in emergency situations. In any case, procedures should be in place to ensure emergency response in case of an accident or emergency at the airport. Although statistically very safe, the most likely emergency situations at general aviation airports are an aircraft accident, fuel or aircraft fire or hazardous material (fuel) spill. The level of protection recommended in FAA Advisory Circular 150/5210-6D, *Aircraft Fire and Rescue Facilities and Extinguisher Agents*, for small general aviation airports is 190 gallons of aqueous film forming foam (AFFF) supplemented with 300 pounds of dry chemical. Proximity suits should be utilized for fire fighter protection. Aviation rated fire extinguishers should be immediately available in the vicinity of the aircraft apron and fueling facilities. Adequate facilities should be provided to store any ARFF vehicle(s) or equipment that is acquired. Currently, aviation fire extinguishers are available at the

Taylor Municipal Airport and the Taylor Fire Department responds to emergencies at the airport. The Taylor Fire Department currently meets approximately 50 percent of these recommendations. It is recommended that the Taylor Fire Department try to meet the recommendations in FAA Advisory Circular 150/5210-6D. However, these are only recommendations as ARFF equipment is technically not required at the Taylor Municipal Airport.

SNOW REMOVAL EQUIPMENT

The Town of Taylor currently provides snow removal services at the airport and these services are considered adequate to meet the existing and future demand at the airport.

INFRASTRUCTURE NEEDS

UTILITIES

Available utilities at the airport have been designed and sized to meet the typical needs of a general aviation airport. Water, electrical power, phone, gas and sewer are positioned to be extended to future terminal area expansion on the east side of the airport. The existing electrical power is a 3-phase line and the water service is via a 6-inch line. A utility corridor running parallel to the hangar area access road is recommended. A load analysis should be conducted to determine appropriate line capacities and flow rates for these utilities.

WEATHER REPORTING

It is recommended that the Automated Weather Observation System (AWOS) be connected to National Airspace Data Interchange Network (NADIN). NADIN consists of the National Weather Service, Air Traffic Control, the Weather Channel, Flight Service Station, FAA, DUATS and other commercial vendors. This will increase the safety and utility of the airport by making automated weather observations more readily accessable to local and transient pilots and will also allow a digital record of these observations for future wind rose development. The AWOS should be relocated to a location on the northwest side of the runway to accommodate future hangar development and meet the AWOS critical area clearance requirements.

LAND USE COMPATIBILITY AND CONTROL

AIRPORT PROPERTY

The existing airport property line encompasses 180 acres according to the airport legal description. According to the Navajo County Assessor's office, the airport is contained within Parcel Number 205-04-019, owned in fee by the Town of Taylor. The Runway Protection Zone (RPZ) for Runway 3 is encompassed within the airport property line. The RPZ for Runway 21 is only partially encompassed by the airport property line and requires an aviation easement or acquisition of approximately 9 acres of the RPZ. The Town of Taylor should also consider acquiring the property on the west side of Runway 3/21 out to the Building Restriction Line (BRL) of 500 feet left of runway centerline (approximately 22 additional acres.

COMPATIBILITY WITH STATE/REGIONAL PLANS

The master plan for the Taylor Municipal Airport should conform to all additional state and regional transportation plans. There is not a current ADOT Highway Plan for the area. According to the ADOT Transportation Planning Division, Taylor is included in the White Mountains Study Area of the Regional Transportation Profile. The White Mountains Study Area is scheduled to be studied in FY 2007.

INDUSTRIAL PARK

A mixed use 150 acre Industrial Park is currently being planned immediately adjacent to Airport Road. The Industrial Park will contain a mix of retail, technical and commercial sites with access to Airport Road. There are also some parcels listed as transitional (flexible) land use that should be coordinated with the airport to ensure compatibility with the airport. According to the draft Industrial Park Plan, the relocated airport access road will bisect the Industrial Park.

ZONING

Development around airports can pose certain hazards to air navigation if appropriate steps are not taken to ensure that buildings and other structures do not penetrate the FAR Part 77 Airspace Surfaces (described in the following section). The FAA therefore recommends that all Airport Sponsors implement height restrictions in the vicinity of the airport to protect these Part 77 Surfaces. A draft height restriction zoning ordinance will be prepared as part of this Master Plan project.

COMPATIBLE LAND USE

In addition to ensuring that obstructions to Part 77 Surfaces are avoided or appropriately marked and lighted, it is recommended that the Airport Sponsor make reasonable efforts to prevent incompatible land uses from the immediate area of the airport. For example, the FAA states in FAA Advisory Circular 150/5200-33A, *Hazardous Wildlife Attractant On or Near Airports* that landfills and/or transfer stations are incompatible land uses with airports. Therefore, these types of facilities should be located at least 5,000 feet from any point on a runway that serves piston type aircraft and 10,000 feet from any point on a runway that serves turbine type aircraft. Furthermore, any facility which may attract wildlife (especially birds) such as sewage treatment ponds and waste water treatment plants should also be located this same distance from any point on the runway. Development proposals should also be reviewed to ensure compatibility in the vicinity of the airport. A draft compatible land use zoning ordinance will be prepared as part of this Master Plan project.

There are currently no on-airport incompatible land uses. There is a mobile home residence adjacent to the terminal building, however, the home owner is contracted by the Town of Taylor to serve as the night and weekend caretaker when the airport is not attended by the Airport Manager.

STATE OF ARIZONA LAND USE PLANNING

Arizona State Statues 28-8485 and 28-8486 require that airport sponsors develop Airport Influence Area (AIA) maps and airport disclosure maps. These documents will be prepared as part of the Airport Layout Plan portion of this study and will be sent to the Arizona Real Estate Department. Airport minimum standards and rules and regulations will also be prepared for the Town of Taylor as part of the Airport Operations Manual.

AIRPORT MANAGEMENT STRUCTURE

The Taylor Municipal Airport is the responsibility of the Taylor Town Manager who reports to the Taylor Town Council. Daily operation and management of the airport is delegated by the Town Manager to the Airport Manger. This management structure is considered adequate for the safe and efficient operation of the Taylor Municipal Airport.

In order to aid the Taylor Municipal Airport in the daily operation of the airport, an Airport Operations Manual will be prepared and include minimum standards, rules and regulations, statements of rates and charges, standard lease agreements, an emergency plan with a crash/rescue grid map, airport self inspection procedures, and an airport security plan. The Town of Taylor also participates in the Aeronautics Division's Pavement Management Plan program. There is currently no runway incursion program; nor is one recommended due to the single runway configuration of the airport.

SUMMARY OF FACILITY REQUIREMENTS

In summary, the facility requirements for the Taylor Municipal Airport are based on the types and volume of aircraft expected to use the airport in the short and long-term timeframes. These facilities will enable the airport to serve its users in a safe and efficient manner. The recommended airside and landside facilities are summarized in Table 3-7.

TABLE 3-7 SUMMARY OF AIRPORT FACILITY REQUIREMENTS

Facility		Short-Term (0-5 years)	Long-Term (6-20 years)
Runway			
	Length (feet)	7,203'	7,203'
	Width (feet)	75'	75'
	Strength (pounds)	12,500 (SWG)	30,000 (SWG), 45,000 (DWG)
Taxiways			
	Parallel	Yes	Yes
	Bypass Taxiways	Yes	Yes
	Width (feet)	35	35
	Strength (pounds)	12,500 (SWG)	30,000 (SWG), 45,000 (DWG)
Apron			
	Tie Downs	13	20*
	Area	5,000 SY	5,000 SY
Fencing			
	Around terminal area	Chain link	Chain link, controlled access
NAVAID			
	Approaches	NPI	NPI – WAAS
Lighting & Visual Aids			
	Runway Edge	MIRL	MIRL
	Taxiway/Apron Edge	Reflectors	MITL
	Threshold Lights	Yes	Yes
	REILs	Yes	Yes
	Approach Slope Indicator	PAPI-2	PAPI-2
	Segmented Circle/Wind Cone	Yes	Yes
	Rotating Beacon	Yes	Yes
Access & Parking			
	Automobile	8	10
Hangar Facilities			
	Small Box or T-Hangars	10	13
	Conventional-Small	0	2
	Conventional-Medium/Large	1	2
Fuel			
	100 LL (gallons)	5,000	5,000
	Jet-A (gallons)	5,000 or Truck	5,000 or Truck
	Fuel Service	24-hours AvGas Jet A as Rqd	24-hours AvGas Jet A as Rqd
Other			
	AWOS	Yes	Yes
	Unicom	Automated	Automated
	Land	7 acres for RPZ	21 Acres for BRL

**As required based on demand*

FEDERAL AVIATION REGULATION (FAR) PART 77 AIRSPACE SURFACES

Federal Aviation Regulations (FAR) Part 77 establishes several Imaginary Surfaces that are used as a guide to provide a safe, unobstructed operating environment for aviation. These surfaces, which are typical for civilian airports, are shown in Figure 3-5. The Primary, Approach, Transitional, Horizontal and Conical Surfaces identified in FAR Part 77 are applied to each runway at both existing and new airports on the basis of the type of approach procedure available or planned for that runway and the specific FAR Part 77 runway category criteria. For the purpose of this section, a visual/utility runway is a runway that is intended to be used by propeller driven aircraft of 12,500 pound maximum gross weight and less. A non-precision instrument/utility runway is a runway that is intended to be used by aircraft of 12,500 pounds maximum gross weight and less with a straight-in instrument approach procedure and instrument designation indicated on an FAA approved airport layout plan, a military service approved military airport layout plan or by any planning document submitted to the FAA by competent authority. A non-precision instrument/larger-than-utility runway is a runway intended for the operation of aircraft weighing more than 12,500 pounds that also has a straight-in instrument approach procedure..

As described previously, the Taylor Municipal Airport currently has a non-precision instrument approach to Runway 21 and a visual approach to Runway 3. These are considered "utility" category approaches as there are currently less than 500 annual operations by aircraft over 12,500 pounds. The FAR Part 77 Airspace Surfaces for these classifications are described in the following paragraphs. While it is desirable to eliminate penetrations of FAR Part 77 airspace surfaces, in some cases, penetrations (also known as obstructions) may be mitigated with appropriate marking and/or lighting. The anticipated future LNAV/VNAV approach will result in a non-precision, greater than utility approach.

PRIMARY SURFACE

The Primary Surface is an imaginary surface of specific width longitudinally centered on a runway. Primary Surfaces extend 200 feet beyond each end of the paved surface of runways, but do not extend past the end of non-paved runways. The elevation of any point on the Primary Surface is the same as the elevation of the nearest point on the runway centerline. The width of the Primary Surface varies from 250, 500 or 1,000-feet depending on the type of approach and approach visibility minimums.

APPROACH SURFACE

The Approach Surface is a surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the Primary Surface. An Approach Surface is applied to each end of the runway based upon the type of approach available or planned for that runway, either 20:1, 34:1 or 50:1. The inner edge of the surface is the same width as the Primary Surface. It expands uniformly to a width corresponding to the FAR Part 77 runway classification criteria.

TRANSITIONAL SURFACE

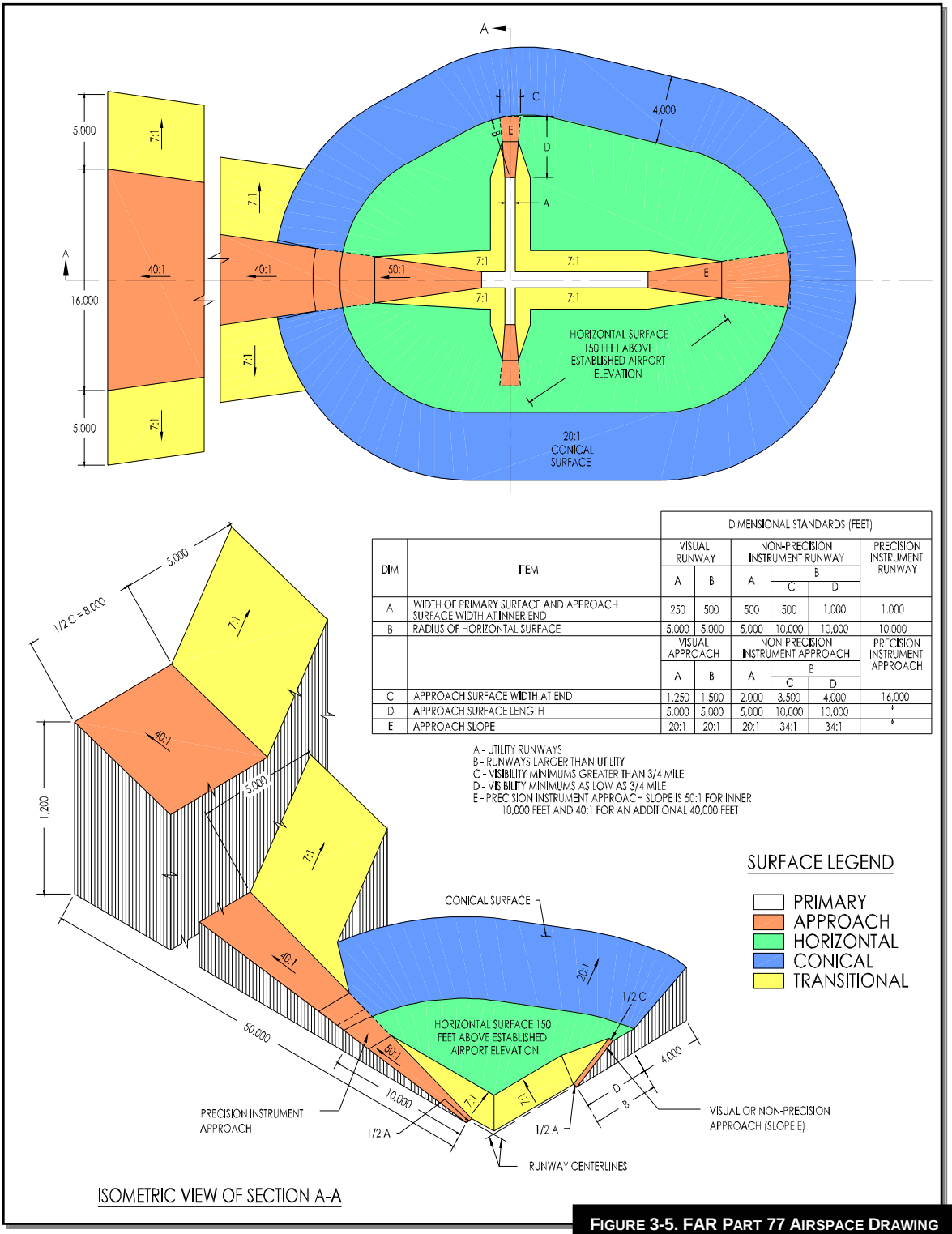
The Transitional Surfaces extend outward and upward at right angles to the runway centerlines from the sides of the Primary and Approach Surfaces at a slope of 7:1 and end at the Horizontal Surface.

HORIZONTAL SURFACE

The Horizontal Surface is considered necessary for the safe and efficient operation of aircraft in the vicinity of an airport. As specified in FAR Part 77, the Horizontal Surface is a horizontal plane 150 feet above the established airport elevation. The airport elevation is defined as the highest point of an airport's useable runways, measured in feet above mean sea level. The perimeter is constructed by arcs of specified radius from the center of each end of the Primary Surface of each runway. The radius of each arc is 5,000 feet for runways designated as utility or visual and 10,000 feet for all other runways.

CONICAL SURFACE

The Conical Surface extends outward and upward from the periphery of the Horizontal Surface at a slope of 20:1 for a horizontal distance of 4,000 feet.



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B		
					C	D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT APPROACH
		A	B	A	B		
					C	D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

A - UTILITY RUNWAYS
B - RUNWAYS LARGER THAN UTILITY
C - VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
D - VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
E - PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET

FIGURE 3-5. FAR PART 77 AIRSPACE DRAWING

SUMMARY OF DESIGN STANDARDS

Table 3-8 summarizes the FAA design standards (described in Chapter 1) for the recommended airport facilities.

TABLE 3-8 SUMMARY OF DIMENSIONAL CRITERIA

Design Criteria	Existing	Future
Airport Reference Code	B-II	B-II
Approach Type	NPI, Utility 1-mile visibility minimums	NPI > Utility 1–mile visibility minimums
FAA Airport Design Standards (AC 150/5300-13, Change 7)		
Runway centerline to parallel taxiway centerline	240'	240'
Runway centerline to edge of aircraft parking apron	250'	250'
Runway width	75'	75'
Runway shoulder width	10'	10'
Runway Safety Area width	150'	150'
Runway Safety Area length beyond runway end	300'	300'
Runway Object Free Area width	500'	500'
Runway Object Free Area length beyond runway end	300'	300'
Runway Obstacle Free Zone width	400'	400'
Runway Obstacle Free Zone length beyond runway end	200'	200'
Runway Protection Zone	500'x700'x1,000'	500'x700'x1,000'
Taxiway width	35'	35'
Taxiway Safety Area width	79'	79'
Taxiway Object Free Area width	131'	131'
Taxilane Object Free Area width	115'	115'
Runway centerline to aircraft hold lines	200'	200'
Airspace Surfaces (Part 77)		
Primary Surface width	500'	500'
Primary Surface length beyond runway ends	200’	200'
Approach Surface dimensions	500'x2,000'x5,000'	500'x3,500'x10,000'
Approach Surface slope	20:1	34:1
Transitional Surface slope	7:1	7:1
Horizontal Surface radius from runway	5,000'	10,000'
Conical Surface width	4,000'	4,000'

Source: FAA AC 150/5300-13, Airport Design; FAR Part 77, Objects Affecting Navigable Airspace

Chapter Four
Development Alternatives

Taylor Municipal Airport
Airport Master Plan

Chapter Four
Development Alternatives

INTRODUCTION

The preceding Chapter and discussion of facility requirements provides the basis for alternative concepts for developing the airport and meeting the recommended facility requirements and design standards. The facility requirements provide recommended development for the majority of needs for the Taylor Municipal Airport. This Chapter will focus on the feasible and prudent alternatives that the Planning Advisory Committee and the airport sponsor considered for the existing and future aviation needs of the area. Airside development is typically the most critical factor in airport planning as these facilities are the focal point of the airport complex and are the physically dominant features of airport development. However, as determined in the previous Chapter, the majority of airside needs are met at the Taylor Municipal Airport. The only airside change to the existing airport configuration is a relocation of the Runway 21 threshold of 200-feet to provide a Runway Protection Zone (RPZ) clear of residences (Figure 4-1). The Truck shop and parking area currently in the RPZ are to be relocated by the Town of Taylor. A runway length of 7,000 feet is considered adequate for the 20-year planning period. Should an extension be required outside of the 20-year planning period, this extension would most likely take place on the Runway 3 end due to terrain and development off the end of Runway 21.

FIGURE 4-1. RUNWAY 21 THRESHOLD RELOCATION

DEVELOPMENT ALTERNATIVES

AIRSIDE

The primary airside needs of the Taylor Municipal Airport are met. The only immediate airside concerns are the incompatible land uses in the Runway 21 RPZ. Consequently, this Chapter will focus on the landside development of the airport. The Town of Taylor should relocate the Runway 21 threshold 200 feet to remove the residence from the RPZ. The Town also plans to relocate the trucking business and acquire the property in the RPZ. The only additional airside consideration is a potential runway extension to 8,000 feet in the event that the airport is upgraded to a C-II ARC. This extension should take place at the Runway 3 end due to terrain off the end of Runway 21 and the proximity of Runway 21 to the Town of Taylor.

LANDSIDE

In order to recommend a landside development concept, several important questions need to be answered:

- Should the sponsor protect for an Airport Reference Code upgrade to Category C by setting buildings back and planning for a relocated parallel taxiway at a 300-foot separation?
- What should the Building Restriction Line (BRL) be based on?
- Where should the future fueling facility be located in order to allow for Group II setbacks and aircraft circulation on the apron?
- How can the future apron area be configured to maximize the existing grading?
- How can future corporate hangars be incorporated into the future apron area?
- Should the sponsor consider removal of the existing cottonwood trees south of the apron?
- Where should the future vehicle parking area be located?
- What type of instrument approach visibility minimums will the airport have?

The following landside development alternatives were evaluated and discussed during the Planning Advisory Committee Meeting in September of 2004. The Building Restriction Line (BRL) is an imaginary line typically determined by the height of the tallest structure on the airport and is based on the FAR Part 77 airspace surfaces. For instance, if a 35-foot structure exists or is planned at an airport with a 250-foot primary surface, the structure would half to be set back 495 feet from the runway centerline to clear the transitional surface. The transitional surface starts at the end of the primary surface (250 feet from centerline) and rises at a 7:1 slope. Consequently, a 35-foot structure must be multiplied by 7, which equals 245 feet. The primary surface of 250 feet is then added to the 245 feet to arrive at the determined BRL of 495 feet. However, transitional surface penetrations can be approved by the FAA provided the obstructions are lighted. Because the terminal area at the Taylor Municipal Airport is constrained by downward sloping terrain, the BRL will be based on the Object Free Area (OFA) of the parallel taxiway rather than the FAR Part 77 surfaces. Future hangars will need to be obstruction lighted.

It was determined that the future instrument approach minimums for the airport would be 1-mile visibility. It was also determined that some of the large trees near the terminal area could stay, provided they are cut back so as to not penetrate any FAR Part 77 surfaces. Finally, it was determined that the terminal area portion of the parallel taxiway should stay at a 240-foot runway separation. A number of recommended facilities are included in all three alternatives including the corporate hangar area, the relocation of the fuel facilities and the relocation of the AWOS. (NOTE: A detailed graphical layout of Alternatives A, B and C can be found at the end of this Chapter):

- Alternative A – Set the BRL at 305.5-feet, reconfigure and expand the aircraft parking apron, provide for up to 21 aircraft tiedowns and 28 T-hangars and keep the ARC at B-II.
- Alternative B – Set the BRL at 305.5-feet, reconfigure and expand the aircraft parking apron, relocate the vehicle parking area, provide for up to 25 aircraft tiedowns and 28 T-hangars and keep the ARC at B-II.
- Alternative C – Set the BRL at 400-feet, expand the aircraft and vehicle parking areas, provide for up to 25 aircraft tiedowns and 16 T-hangars and protect for an ARC upgrade to C-II outside of the 20-year planning period.

Alternative A – Set the BRL at 305.5-feet, reconfigure and expand the aircraft parking apron, provide for up to 21 aircraft tiedowns and 28 T-hangars and keep the ARC at B-II.

This alternative involves setting the BRL at 305.5-foot separation from the runway centerline. This BRL is based on the taxiway object free area for Group II aircraft of 131 feet (65.5 feet from the taxiway centerline plus 240 foot runway/taxiway separation). Alternative A also involves realigning and adding aircraft tiedowns for larger aircraft. The vehicle parking lot remains in its existing location in this alternative. A new T-hangar access road will also have to be constructed in this alternative until the existing T-hangars are relocated to the new terminal area.

The major advantages to this alternative are:

- Expands aircraft parking apron and taxilanes to accommodate Group II aircraft.
- Provides area for needed T-hangar expansion with direct access to parallel taxiway.
- Provides controlled access for airport terminal area.
- Provides area for FBO expansion.
- Provides area for future corporate hangar development.
- Relocates fueling area out of taxiway object free area.
- Provides vehicle access to existing T-hangars with minimal grading required.

The major disadvantages to this alternative are:

- Reduces number of aircraft ties downs from 24 to 21.
- A future upgrade in Airport Reference Code would potentially require the relocation of some T-hangars.
- Does not provide direct vehicle parking access to the existing terminal.
- Requires removal of caretaker's residence and air medivac trailer.

Alternative B – Set the BRL at 305.5-feet, reconfigure and expand the aircraft parking apron, relocate the vehicle parking area, provide for up to 25 aircraft tiedowns and 28 T-hangars and keep the ARC at B-II.

This alternative also involves a BRL of 305.5-feet. The aircraft and vehicle parking areas are both expanded in this alternative. The aircraft-parking apron is expanded to the southeast and into the existing vehicle parking area. The vehicle parking area is relocated toward the existing terminal building where the residence to be removed is located. A new T-hangar access road will also have to be constructed in this alternative until the existing T-hangars are relocated to the new terminal area.

The major advantages to this alternative are:

- Expands aircraft parking apron and taxilanes to accommodate Group II aircraft.
- Provides an increase in the number of aircraft tiedowns and accommodates large aircraft parking.
- Provides area for needed T-hangar expansion with direct access to parallel taxiway.
- Provides controlled access for airport terminal area.
- Provides area for FBO expansion.
- Provides area for future corporate hangar development.
- Relocates fueling area out of taxiway object free area.

- Provides vehicle-parking area adjacent to terminal building.
- Provides vehicle access to existing T-hangars with minimal grading required.

The major disadvantages to this alternative are:

- A future upgrade in Airport Reference Code would potentially require the relocation of some T-hangars.
- Requires removal of caretaker's residence and air medivac trailer.

Alternative C – Set the BRL at 400-feet, expand the aircraft and vehicle parking areas, provide for up to 25 aircraft tiedowns and 16 T-hangars and protect for an ARC upgrade to C-II outside of the 20-year planning period.

This alternative involves a BRL of 400-feet in order to protect for an upgrade in Airport Reference Code outside of the 20-year planning period. This BRL is based on a Category C runway object free area of 800 feet (400 feet on each side of the runway). The future T-hangars are located at the BRL allowing for fewer hangars than in Alternatives A and B. The aircraft and vehicle parking area is identical to Alternative B. The gravel access road to the existing T-hangars will require additional fill in this alternative as it is located approximately 30-feet from the edge of the existing apron area grading.

The major advantages to this alternative are:

- Expands aircraft parking apron and taxilanes to accommodate Group II aircraft.
- Provides an increase in the number of aircraft tiedowns and accommodates large aircraft parking.
- Provides area for needed T-hangar expansion with direct access to parallel taxiway.
- Provides controlled access for airport terminal area.
- Provides area for FBO expansion.
- Provides area for future corporate hangar development.
- Relocates fueling area out of taxiway object free area.
- Provides vehicle-parking area adjacent to terminal building.

The major disadvantages to this alternative are:

- Requires longer taxilanes to access future T-hangars.
- Requires additional earthwork for access road to existing T-hangars.
- Requires removal of caretaker's residence and air medivac trailer.
- Constrains T-hangar development to four unit T-hangars for each taxilane built.

NO ACTION ALTERNATIVE

The Town of Taylor also considered a no action alternative in accordance with FAA Advisory Circular 150-5070-6A. This alternative would involve maintaining the airport in its current configuration and not developing the recommended facilities or correcting the non-standard conditions. However, because the majority of airside needs are met and there is existing demand to base aircraft at the airport, this alternative was not considered feasible or prudent. The airport is also in need of development to correct existing design standard deficiencies. By developing the terminal area and providing lease parcels for hangars, the Town is maximizing the revenue potential of the airport in an effort to become as financially self sustaining as possible.

SELECTION OF THE PREFERRED ALTERNATIVE

Alternatives A, B and C all involve a similar amount of pavement and include similar facilities. Therefore, cost was not considered a significant factor in comparing alternatives and recommending a preferred alternative. All three alternatives address all FAA safety and design standard deficiencies and provide for the needed apron and T-hangar area expansion. These alternatives were discussed and analyzed during

the September Planning Advisory Committee meeting. Input was received from all members of the Planning Advisory Committee including representatives from the Arizona Aeronautics Division and the Federal Aviation Administration. Upon further review of the advantages and disadvantages of each alternative and based on input from the Planning Advisory Committee, Alternative B is recommended as the preferred alternative.

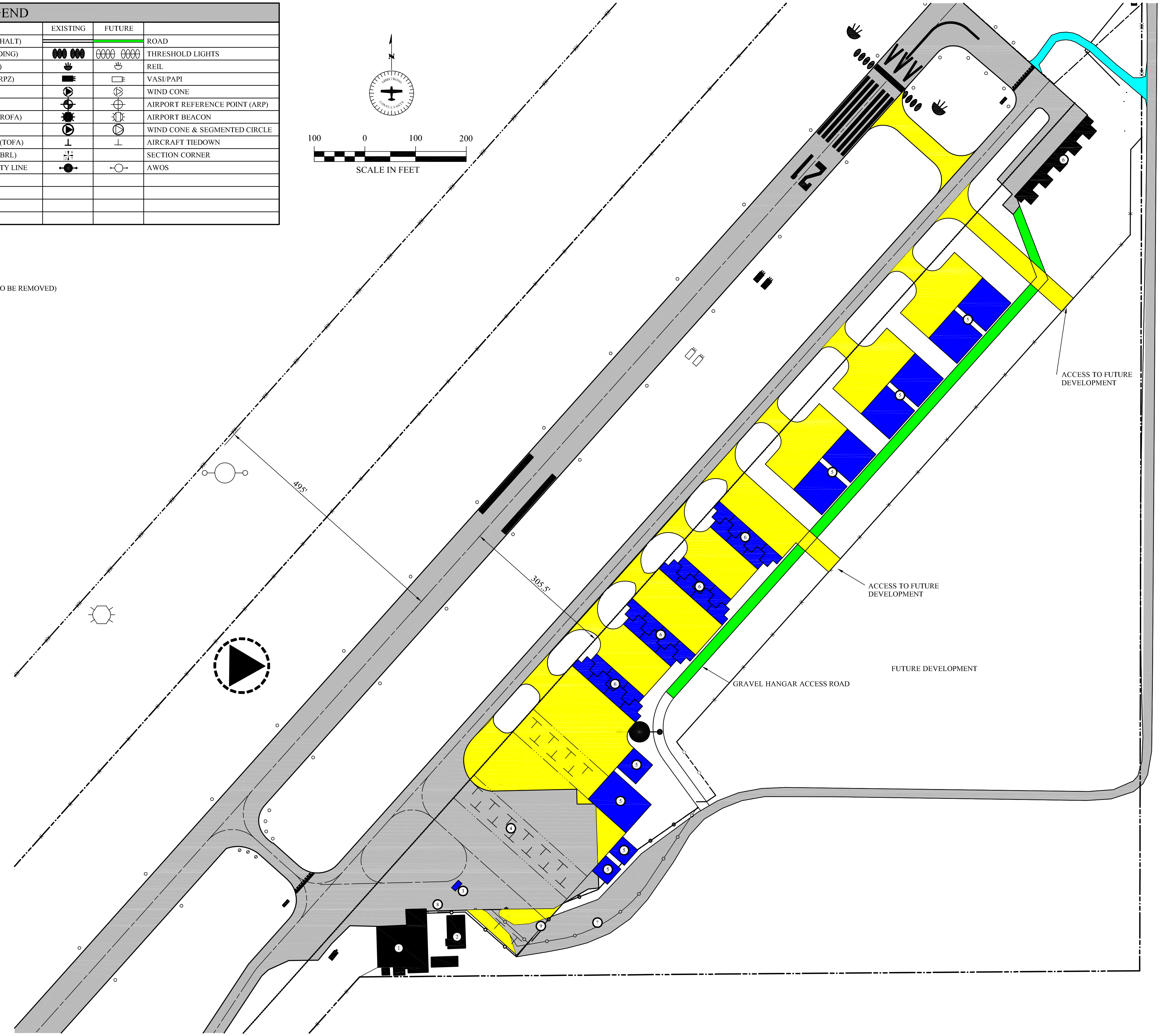
The primary advantage to Alternative B is that it provides much needed T-hangar area expansion and maximizes the use of the existing grading of the apron area. A development plan including taxilane access to T-hangars will make the airport more attractive to potential based aircraft owners and allow the Town of Taylor to better market its airport and the services provided at the airport. The resulting increase in fuel sales and hangar area leases will also provide a valuable revenue stream for the Town in its efforts to make the airport self-sustaining. This alternative was approved by the Taylor Town Council and will be carried forward into the Airport Layout Plan.

LEGEND					
EXISTING	FUTURE/ULTIMATE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)			ROAD
		STRUCTURE/FACILITIES (BUILDING)			THRESHOLD LIGHTS
		AIRPORT PROPERTY LINE (APL)			REIL
		RUNWAY PROTECTION ZONE (RPZ)			VASI/PAPI
		RUNWAY SAFETY AREA (RSA)			WIND CONE
		OBSTACLE FREE ZONE (OFZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY OBJECT FREE AREA (ROFA)			AIRPORT BEACON
		TAXIWAY SAFETY AREA (TSA)			WIND CONE & SEGMENTED CIRCLE
		TAXIWAY OBJECT FREE AREA (TOFA)			AIRCRAFT TIEDOWN
		BUILDING RESTRICTION LINE (BRL)			SECTION CORNER
		FENCING ON AIRPORT PROPERTY LINE			AWOS
4125		CONTOURS			
		TO BE REMOVED			
		FUTURE ASPHALT			
		FUTURE STRUCTURE			

1. TERMINAL/FBO
2. CARETAKER RESIDENCE (TO BE REMOVED)
3. FUEL
4. APRON
5. BOX HANGARS
6. T-HANGARS
7. AUTO PARKING
8. PEDESTRIAN GATE
9. AUTO GATE

100 0 100 200

SCALE IN FEET



ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services

861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769

1501 Stampede Ave. Suite 3030
Cody, WY 82414
ph: 307.527.4042 fax: 307.527.4043
email: aci@armstrongconsultants.com

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

AIRPORT LAYOUT PLANS

No.	Revision	Date	By

Project No: 045690
Date: 7.20.05
File Name: 5690520

Drawn: RF
Checked: REH
Approved: DAC

ALTERNATIVE A

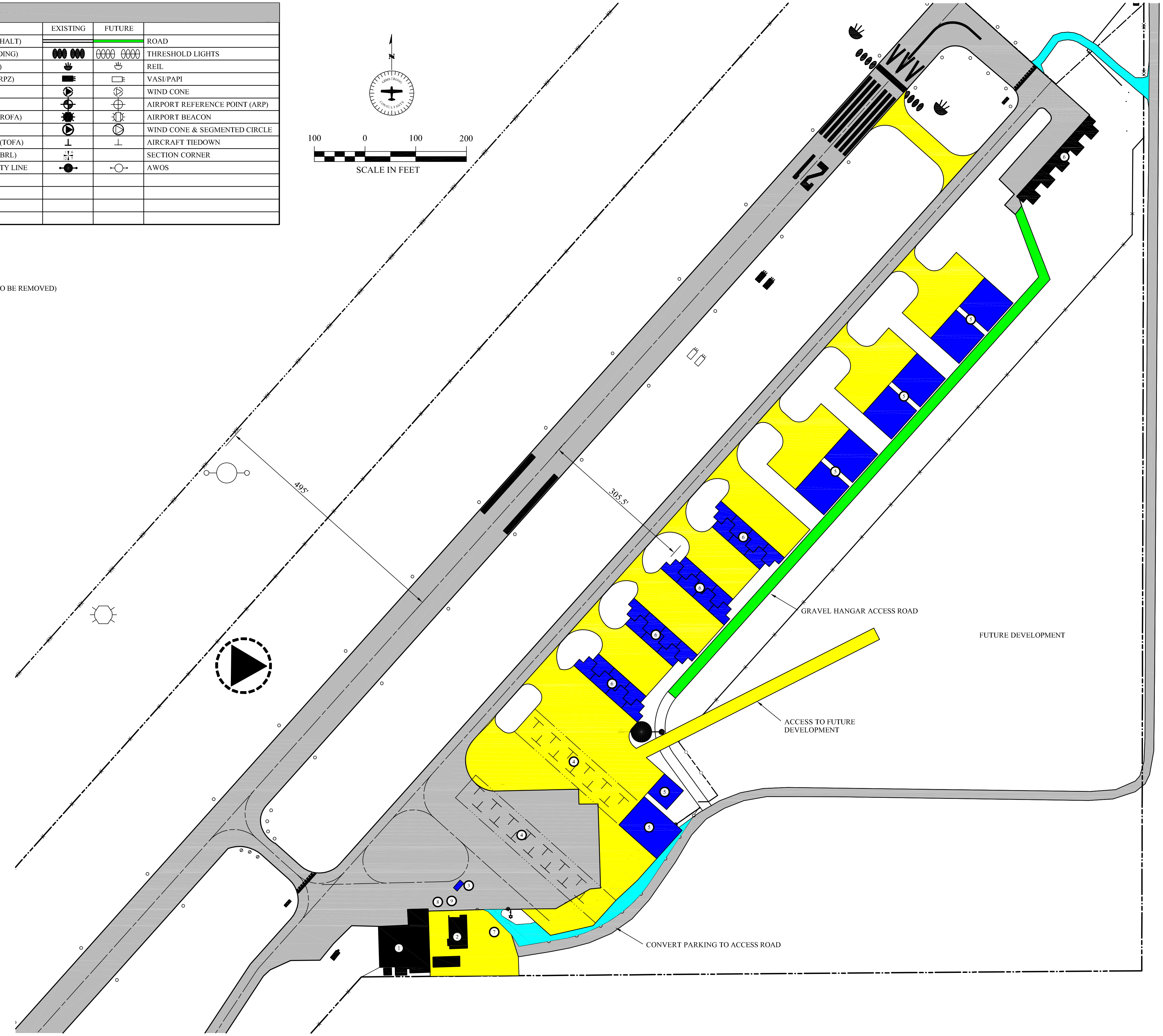
Sheet: 1 of: 1

EXISTING	FUTURE/ULTIMATE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)			ROAD
		STRUCTURE/FACILITIES (BUILDING)			THRESHOLD LIGHTS
		AIRPORT PROPERTY LINE (APL)			REIL
		RUNWAY PROTECTION ZONE (RPZ)			VASI/PAPI
		RUNWAY SAFETY AREA (RSA)			WIND CONE
		OBSTACLE FREE ZONE (OFZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY OBJECT FREE AREA (ROFA)			AIRPORT BEACON
		TAXIWAY SAFETY AREA (TSA)			WIND CONE & SEGMENTED CIRCLE
		TAXIWAY OBJECT FREE AREA (TOFA)			AIRCRAFT TIEDOWN
		BUILDING RESTRICTION LINE (BRL)			SECTION CORNER
		FENCING ON AIRPORT PROPERTY LINE			AWOS
4125		CONTOURS			
		TO BE REMOVED			
		FUTURE ASPHALT			
		FUTURE STRUCTURE			

100 0 100 200

SCALE IN FEET

1. TERMINAL/FBO
2. CARETAKER RESIDENCE (TO BE REMOVED)
3. FUEL
4. APRON
5. BOX HANGARS
6. T-HANGARS
7. AUTO PARKING
8. PEDESTRIAN GATE
9. AUTO GATE



ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769
1501 Stampede Ave. Suite 3030
Cody, WY 82414
ph: 307.527.4042 fax: 307.527.4043
email: aci@armstrongconsultants.com

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

AIRPORT LAYOUT PLANS

No.	Revision	Date	By

Project No: 045690
Date: 7.20.05
File Name: 5690520

Drawn: RF
Checked: REH
Approved: DAC

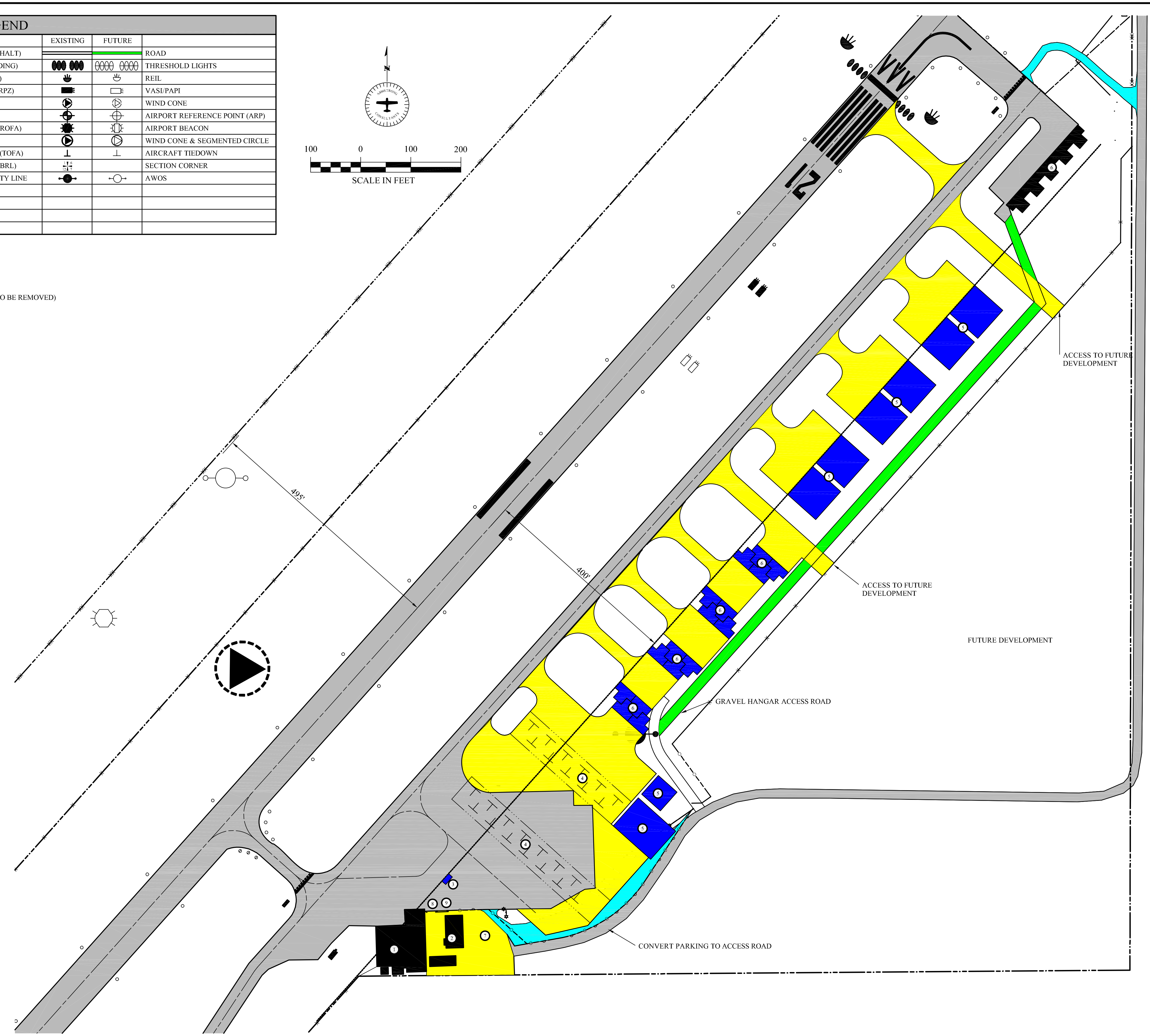
ALTERNATIVE B

Sheet: 1 of: 1

LEGEND

EXISTING	FUTURE/ULTIMATE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)			ROAD
		STRUCTURE/FACILITIES (BUILDING)			THRESHOLD LIGHTS
		AIRPORT PROPERTY LINE (APL)			REIL
		RUNWAY PROTECTION ZONE (RPZ)			VASI/PAPI
		RUNWAY SAFETY AREA (RSA)			WIND CONE
		OBSTACLE FREE ZONE (OFZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY OBJECT FREE AREA (ROFA)			AIRPORT BEACON
		TAXIWAY SAFETY AREA (TSA)			WIND CONE & SEGMENTED CIRCLE
		TAXIWAY OBJECT FREE AREA (TOFA)			AIRCRAFT TIEDOWN
		BUILDING RESTRICTION LINE (BRL)			SECTION CORNER
		FENCING ON AIRPORT PROPERTY LINE			AWOS
4125		CONTOURS			
		TO BE REMOVED			
		FUTURE ASPHALT			
		FUTURE STRUCTURE			

1. TERMINAL/FBO
2. CARETAKER RESIDENCE (TO BE REMOVED)
3. FUEL
4. APRON
5. BOX HANGARS
6. T-HANGARS
7. AUTO PARKING
8. PEDESTRIAN GATE
9. AUTO GATE



ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services

861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769

1501 Stampede Ave. Suite 3030
Cody, WY 82414
ph: 307.527.4042 fax: 307.527.4043
email: aci@armstrongconsultants.com

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

AIRPORT LAYOUT PLANS

No.	Revision	Date	By

Project No: 045690
Date: 7.20.05
File Name: 5690520

Drawn: RF
Checked: REH
Approved: DAC

ALTERNATIVE C

Sheet: 1 of: 1

Chapter Five
Airport Plans

Taylor Municipal Airport
Airport Master Plan

Chapter Five
Airport Layout Plan

INTRODUCTION

This set of plans, referred to as the Airport Layout Plan (ALP), has been prepared in accordance with Federal Aviation Administration (FAA) Advisory Circular 5300-13, Change 8, *Airport Design*, the FAA, Western-Pacific Regional ALP checklist as well as the State of Arizona, Aeronautics Department, ALP checklist. The purpose of this set of plans is to graphically depict the recommendations for the airport layout, disposition of obstructions and future use of land in the vicinity of the airport.

- Cover Sheet
- Airport Layout Plan Drawing
- Terminal/Building Area Plan Drawing
- Inner Portion of the Approach Surface Drawing
- Airport Airspace Drawing
- Land Use Drawing
- Exhibit “A” Property Map
- Aerial Photograph

In addition to the Airport Layout Plan drawing set, a model zoning ordinance and avigation easement guide has been prepared and is included in Appendix C.

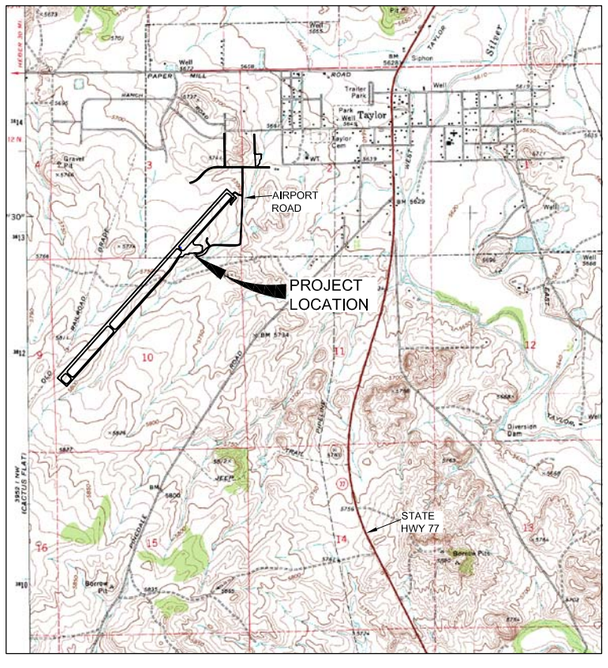
Taylor Municipal Airport

Taylor, Arizona

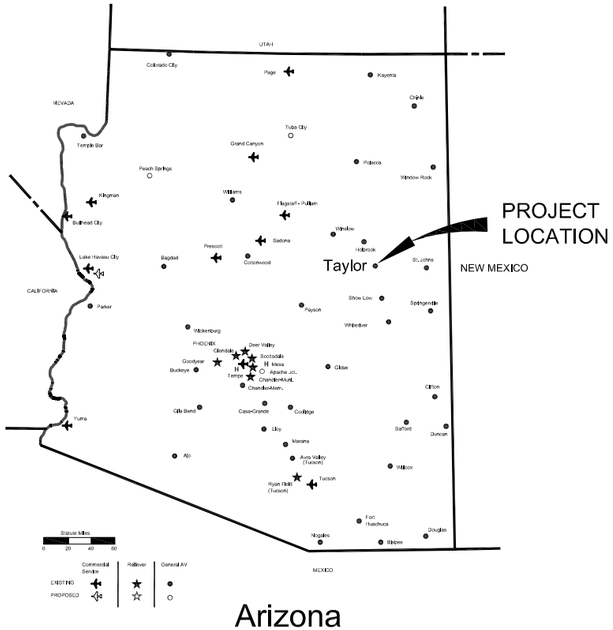
AIRPORT LAYOUT PLANS

PREPARED BY:
ARMSTRONG CONSULTANTS, INC.

A.C.I. PROJECT NO. 045690
November 30, 2005
A.I.P. No. 03-04-0065-12



VICINITY MAP



Arizona

LOCATION MAP

INDEX TO SHEETS

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services

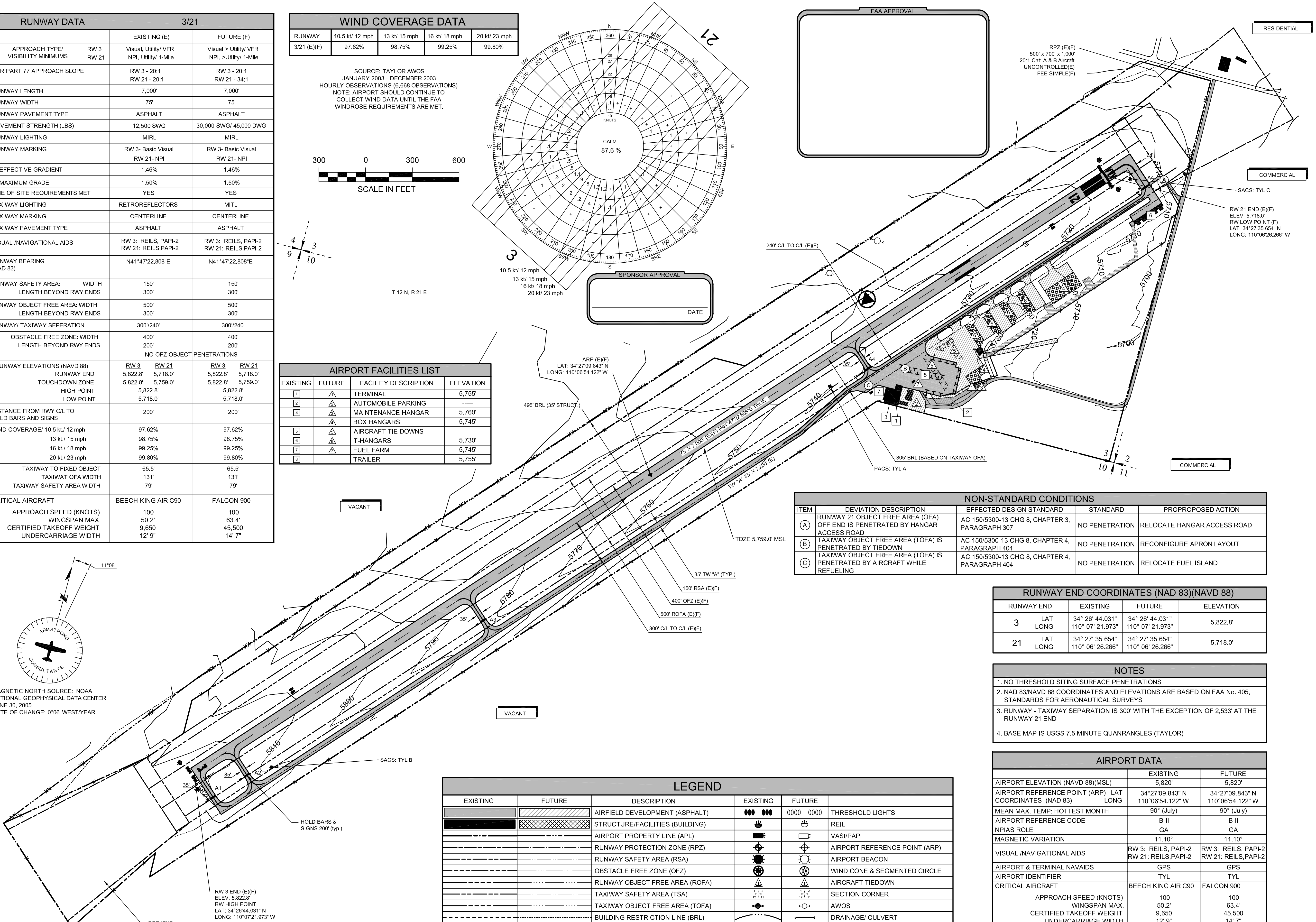
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769

5690501

RUNWAY DATA	3/21	
	EXISTING (E)	FUTURE (F)
APPROACH TYPE/ VISIBILITY MINIMUMS RW 3 / RW 21	Visual, Utility/ VFR NPI, Utility/ 1-Mile	Visual > Utility/ VFR NPI, >Utility/ 1-Mile
FAR PART 77 APPROACH SLOPE	RW 3 - 20:1 RW 21 - 20:1	RW 3 - 20:1 RW 21 - 34:1
RUNWAY LENGTH	7,000'	7,000'
RUNWAY WIDTH	75'	75'
RUNWAY PAVEMENT TYPE	ASPHALT	ASPHALT
PAVEMENT STRENGTH (LBS)	12,500 SWG	30,000 SWG/ 45,000 DWG
RUNWAY LIGHTING	MIRL	MIRL
RUNWAY MARKING	RW 3- Basic Visual RW 21- NPI	RW 3- Basic Visual RW 21- NPI
% EFFECTIVE GRADIENT	1.46%	1.46%
% MAXIMUM GRADE	1.50%	1.50%
LINE OF SITE REQUIREMENTS MET	YES	YES
TAXIWAY LIGHTING	RETROREFLECTORS	MITL
TAXIWAY MARKING	CENTERLINE	CENTERLINE
TAXIWAY PAVEMENT TYPE	ASPHALT	ASPHALT
VISUAL /NAVIGATIONAL AIDS	RW 3: REILS, PAPI-2 RW 21: REILS,PAPI-2	RW 3: REILS, PAPI-2 RW 21: REILS,PAPI-2
RUNWAY BEARING (NAD 83)	N41°47'22.808"E	N41°47'22.808"E
RUNWAY SAFETY AREA: WIDTH LENGTH BEYOND RWY ENDS	150' 300'	150' 300'
RUNWAY OBJECT FREE AREA: WIDTH LENGTH BEYOND RWY ENDS	500' 300'	500' 300'
RUNWAY/ TAXIWAY SEPERATION	300'/240'	300'/240'
OBSTACLE FREE ZONE: WIDTH LENGTH BEYOND RWY ENDS	400' 200' NO OFZ OBJECT	400' 200' PENETRATIONS
RUNWAY ELEVATIONS (NAVD 88) RUNWAY END TOUCHDOWN ZONE HIGH POINT LOW POINT	RW 3 / RW 21 5,822.8' / 5,718.0' 5,822.8' / 5,759.0' 5,822.8' 5,718.0'	RW 3 / RW 21 5,822.8' / 5,718.0' 5,822.8' / 5,759.0' 5,822.8' 5,718.0'
DISTANCE FROM RWY C/L TO HOLD BARS AND SIGNS	200'	200'
WIND COVERAGE/ 10.5 kt./ 12 mph 13 kt./ 15 mph 16 kt./ 18 mph 20 kt./ 23 mph	97.62% 98.75% 99.25% 99.80%	97.62% 98.75% 99.25% 99.80%
TAXIWAY TO FIXED OBJECT TAXIWAT OFA WIDTH TAXIWAY SAFETY AREA WIDTH	65.5' 131' 79'	65.5' 131' 79'
CRITICAL AIRCRAFT	BEECH KING AIR C90	FALCON 900
APPROACH SPEED (KNOTS) WINGSPAN MAX. CERTIFIED TAKEOFF WEIGHT UNDERCARRIAGE WIDTH	100 50.2' 9,650 12' 9"	100 63.4' 45,500 14' 7"

WIND COVERAGE DATA				
RUNWAY	10.5 kt/ 12 mph	13 kt/ 15 mph	16 kt/ 18 mph	20 kt/ 23 mph
3/21 (E)(F)	97.62%	98.75%	99.25%	99.80%

SOURCE: TAYLOR AWOS
JANUARY 2003 - DECEMBER 2003
HOURLY OBSERVATIONS (6,668 OBSERVATIONS)
NOTE: AIRPORT SHOULD CONTINUE TO COLLECT WIND DATA UNTIL THE FAA WINDROSE REQUIREMENTS ARE MET.



AIRPORT FACILITIES LIST			
EXISTING	FUTURE	FACILITY DESCRIPTION	ELEVATION
1	1	TERMINAL	5,755'
2	2	AUTOMOBILE PARKING	-----
3	3	MAINTENANCE HANGAR	5,760'
	4	BOX HANGARS	5,745'
5	5	AIRCRAFT TIE DOWNS	-----
6	6	T-HANGARS	5,730'
7	7	FUEL FARM	5,745'
8		TRAILER	5,755'

NON-STANDARD CONDITIONS				
ITEM	DEVIATION DESCRIPTION	EFFECTED DESIGN STANDARD	STANDARD	PROPROPOSED ACTION
A	RUNWAY 21 OBJECT FREE AREA (OFA) OFF END IS PENETRATED BY HANGAR ACCESS ROAD	AC 150/5300-13 CHG 8, CHAPTER 3, PARAGRAPH 307	NO PENETRATION	RELOCATE HANGAR ACCESS ROAD
B	TAXIWAY OBJECT FREE AREA (TOFA) IS PENETRATED BY TIEDOWN	AC 150/5300-13 CHG 8, CHAPTER 4, PARAGRAPH 404	NO PENETRATION	RECONFIGURE APRON LAYOUT
C	TAXIWAY OBJECT FREE AREA (TOFA) IS PENETRATED BY AIRCRAFT WHILE REFUELING	AC 150/5300-13 CHG 8, CHAPTER 4, PARAGRAPH 404	NO PENETRATION	RELOCATE FUEL ISLAND

RUNWAY END COORDINATES (NAD 83)(NAVD 88)				
RUNWAY END		EXISTING	FUTURE	ELEVATION
3	LAT LONG	34° 26' 44.031" 110° 07' 21.973"	34° 26' 44.031" 110° 07' 21.973"	5,822.8'
21	LAT LONG	34° 27' 35.654" 110° 06' 26.266"	34° 27' 35.654" 110° 06' 26.266"	5,718.0'

NOTES

1. NO THRESHOLD SITING SURFACE PENETRATIONS
2. NAD 83/NAVD 88 COORDINATES AND ELEVATIONS ARE BASED ON FAA No. 405, STANDARDS FOR AERONAUTICAL SURVEYS
3. RUNWAY - TAXIWAY SEPARATION IS 300' WITH THE EXCEPTION OF 2,533' AT THE RUNWAY 21 END
4. BASE MAP IS USGS 7.5 MINUTE QUANRANGLES (TAYLOR)

AIRPORT DATA		
	EXISTING	FUTURE
AIRPORT ELEVATION (NAVD 88)(MSL)	5,820'	5,820'
AIRPORT REFERENCE POINT (ARP) LAT COORDINATES (NAD 83) LONG	34°27'09.843" N 110°06'54.122" W	34°27'09.843" N 110°06'54.122" W
MEAN MAX. TEMP: HOTTEST MONTH	90° (July)	90° (July)
AIRPORT REFERENCE CODE	B-II	B-II
NPIAS ROLE	GA	GA
MAGNETIC VARIATION	11.10°	11.10°
VISUAL /NAVIGATIONAL AIDS	RW 3: REILS, PAPI-2 RW 21: REILS,PAPI-2	RW 3: REILS, PAPI-2 RW 21: REILS,PAPI-2
AIRPORT & TERMINAL NAVAIDS	GPS	GPS
AIRPORT IDENTIFIER	TYL	TYL
CRITICAL AIRCRAFT	BEECH KING AIR C90	FALCON 900
APPROACH SPEED (KNOTS) WINGSPAN MAX. CERTIFIED TAKEOFF WEIGHT UNDERCARRIAGE WIDTH	100 50.2' 9,650 12' 9"	100 63.4' 45,500 14' 7"
AIRPORT IS LOCATED IN SECTIONS 3,9, & 10, T. 12 N., R. 21 E., GILA AND SALT RIVER MERIDIAN, SW OF THE TOWN OF TAYLOR, ARIZONA		

LEGEND					
EXISTING	FUTURE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)			THRESHOLD LIGHTS
		STRUCTURE/FACILITIES (BUILDING)			REIL
		AIRPORT PROPERTY LINE (APL)			VASI/PAPI
		RUNWAY PROTECTION ZONE (RPZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY SAFETY AREA (RSA)			AIRPORT BEACON
		OBSTACLE FREE ZONE (OFZ)			WIND CONE & SEGMENTED CIRCLE
		RUNWAY OBJECT FREE AREA (ROFA)			AIRCRAFT TIEDOWN
		TAXIWAY SAFETY AREA (TSA)			SECTION CORNER
		TAXIWAY OBJECT FREE AREA (TOFA)			AWOS
		BUILDING RESTRICTION LINE (BRL)			DRAINAGE/ CULVERT
		BARB FENCING/ WILDLIFE FENCING	4125	4125	CONTOURS
					PACS/ SACS

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

A.I.P. No. 03-04-0065-12
AIRPORT LAYOUT PLANS

No.	Revision	Date	By
1	MASTER PLAN (ACI # 895192)	5.11.93	ACI
2	AIP CONSTRUCTION COMPLETED	5.24.00	ACI
3	MASTER PLAN UPDATE (ACI # 945459)	11.22.05	ACI

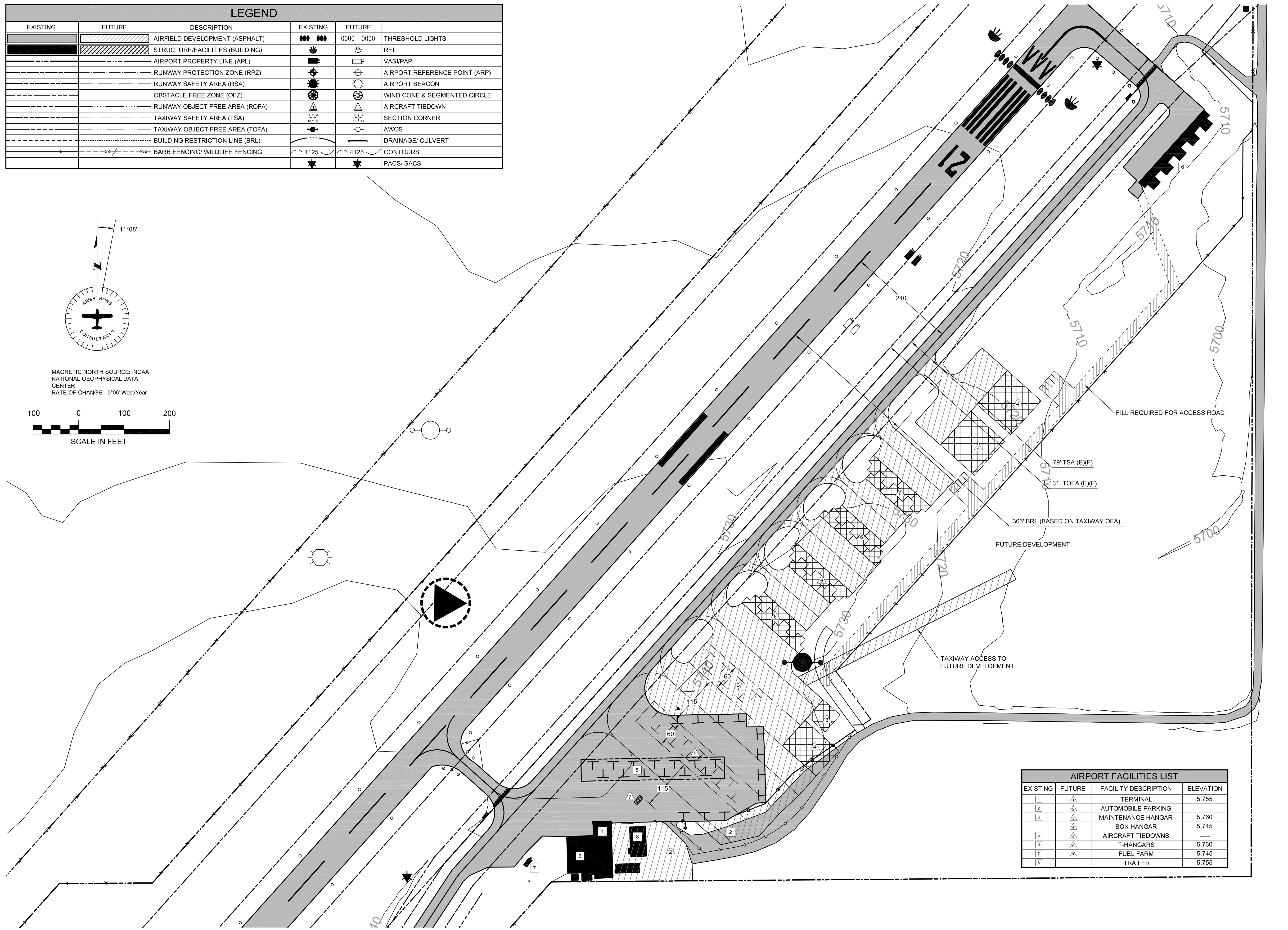
Project No: 045690
Date: 11.30.05
File Name: 5690502

Drawn: RF
Checked: REH
Approved: DAC

AIRPORT LAYOUT PLAN

LEGEND

EXISTING	FUTURE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)		0000 0000	THRESHOLD LIGHTS
		STRUCTURE/FACILITIES (BUILDING)			REIL
		AIRPORT PROPERTY LINE (APL)			VASI/PAPI
		RUNWAY PROTECTION ZONE (RPZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY SAFETY AREA (RSA)			AIRPORT BEACON
		OBSTACLE FREE ZONE (OFZ)			WIND CONE & SEGMENTED CIRCLE
		RUNWAY OBJECT FREE AREA (ROFA)			AIRCRAFT TIEDOWN
		TAXIWAY SAFETY AREA (TSA)			SECTION CORNER
		TAXIWAY OBJECT FREE AREA (TOFA)			AWOS
		BUILDING RESTRICTION LINE (BRL)			DRAINAGE/ CULVERT
		BARB FENCING/ WILDLIFE FENCING	4125	4125	CONTOURS
					PACS/ SACS



AIRPORT FACILITIES LIST

EXISTING	FUTURE	FACILITY DESCRIPTION	ELEVATION
1	1	TERMINAL	5,755'
2	2	AUTOMOBILE PARKING	----
3	3	MAINTENANCE HANGAR	5,760'
	4	BOX HANGAR	5,745'
5	5	AIRCRAFT TIEDOWNS	----
6	6	T-HANGARS	5,730'
7	7	FUEL FARM	5,745'
8		TRAILER	5,755'

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TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

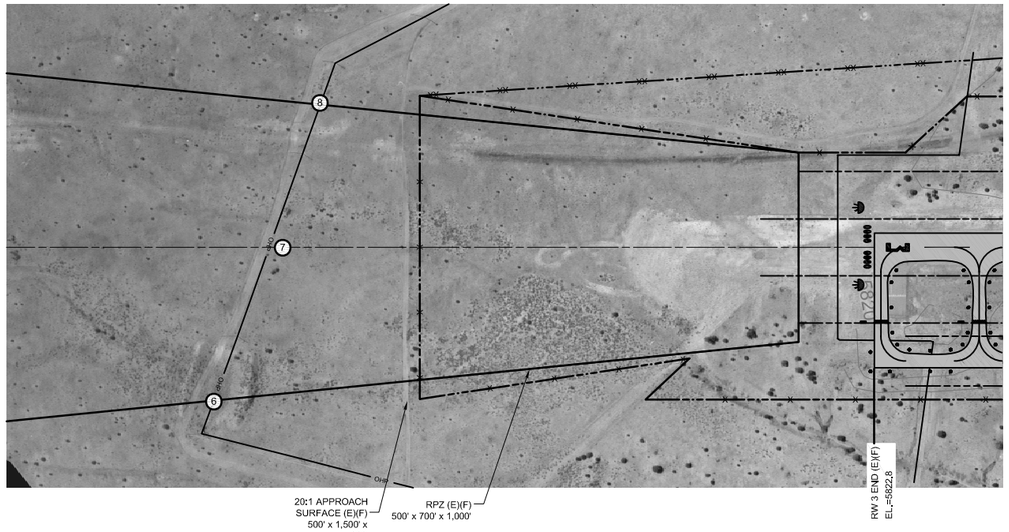
A.I.P. No. 03-04-0065-12
AIRPORT LAYOUT PLANS

No.	Revision	Date	By

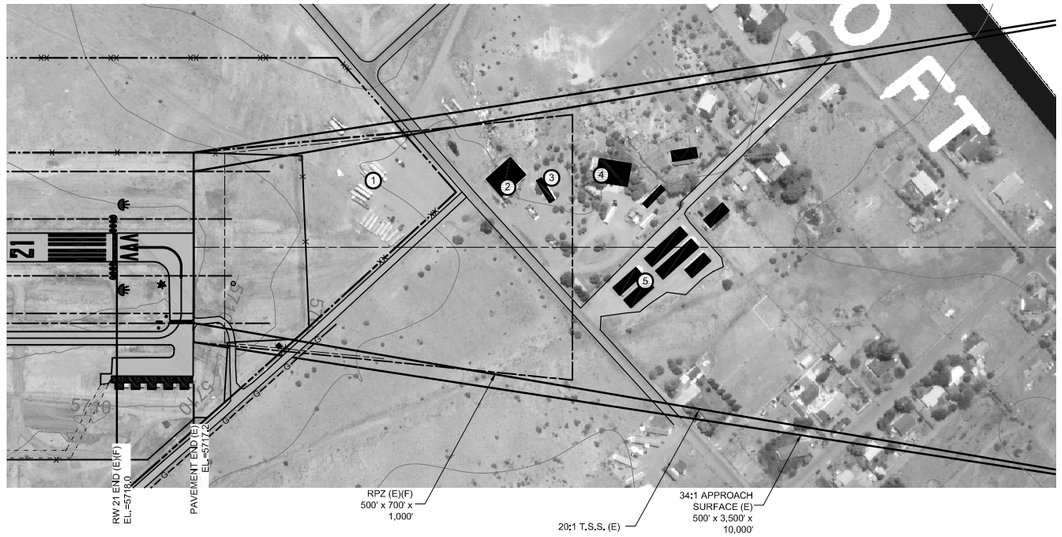
Project No: 045690
Date: 11.30.05
File Name: 5690503

Drawn: RF
Checked: REH
Approved: DAC

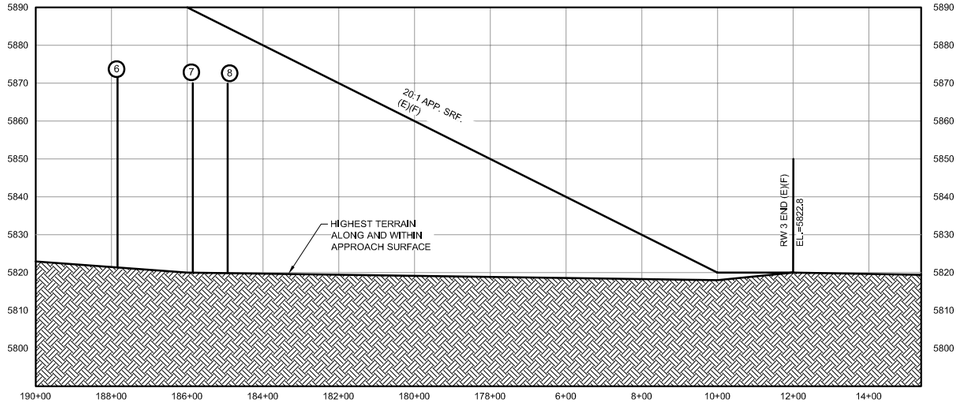
TERMINAL AREA DRAWING



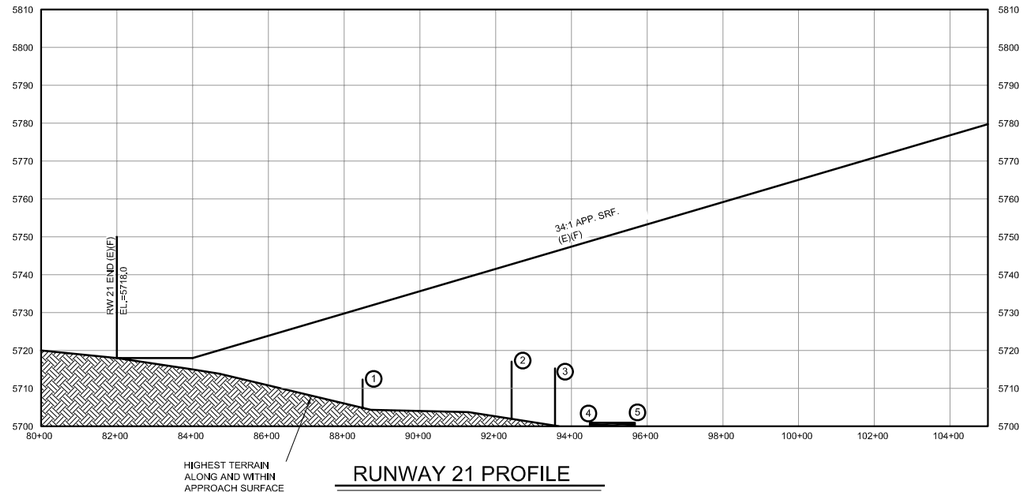
RUNWAY 3 PLAN



RUNWAY 21 PLAN



RUNWAY 3 PROFILE



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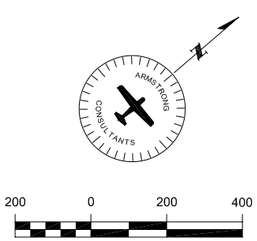

OBJECTS WITHIN INNER APPROACH SURFACE					
NO.	OBJECT	TOP ELEVATION	20:1 (E) PENETRATION	34:1 (F) PENETRATION	PROPOSED ACTION
1	TRAILER PARKING	5713'	-15'	-19'	CLOSE PARKING AREA
2	BUILDING	5718'	-30'	-26'	NONE
3	BUILDINGS	5715'	-37'	-31'	NONE
4	RESIDENCE	5702'	-57'	-48'	REOCATE THRESHOLD
5	BUILDINGS	5702'	-62'	-51'	NONE
6	OVER HEAD POWER	5870'	-27'	-27'	NONE
7	OVER HEAD POWER	5870'	-19'	-19'	REOCATE THRESHOLD
8	OVER HEAD POWER	5870'	-15'	-15'	NONE

NOTE: OBJECT ELEVATIONS IN FEET MSL (VERTICAL DATUM NAVD88).

LEGEND					
EXISTING	FUTURE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)			THRESHOLD LIGHTS
		STRUCTURE/FACILITIES (BUILDING)			REIL
		AIRPORT PROPERTY LINE (APL)			VASI/PAPI
		RUNWAY PROTECTION ZONE (RPZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY SAFETY AREA (RSA)			AIRPORT BEACON
		OBSTACLE FREE ZONE (OFZ)			WIND CONE & SEGMENTED CIRCLE
		RUNWAY OBJECT FREE AREA (ROFA)			AIRCRAFT TIEDOWN
		TAXIWAY SAFETY AREA (TSA)			SECTION CORNER
		TAXIWAY OBJECT FREE AREA (TOFA)			AWOS
		BUILDING RESTRICTION LINE (BRL)			DRAINAGE/ CULVERT
		BARB FENCING/ WILDLIFE FENCING	4125	4125	CONTOURS
					PACS/ SACS

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

A.I.P. No. 03-04-0065-12
AIRPORT LAYOUT PLANS

No.	Revision	Date	By

Project No: 045690
Date: 11.30.05
File Name: 5690504

Drawn: RF
Checked: REH
Approved: DAC

RW 3/21 (E)(F)
INNER
APPROACH

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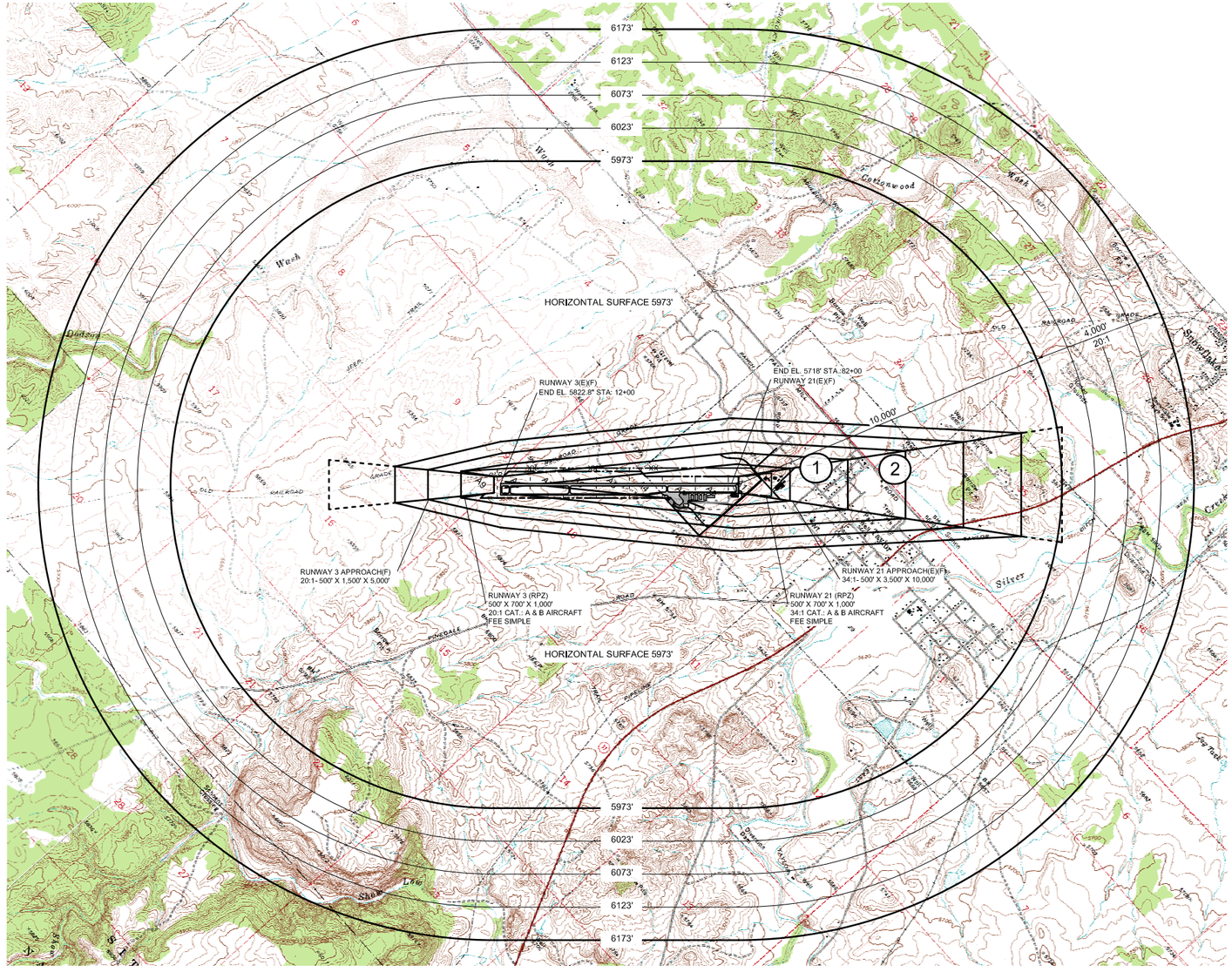


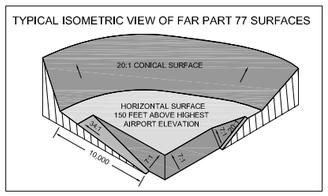
1 APPROACH SURFACE HEIGHT:
AGL- 113'

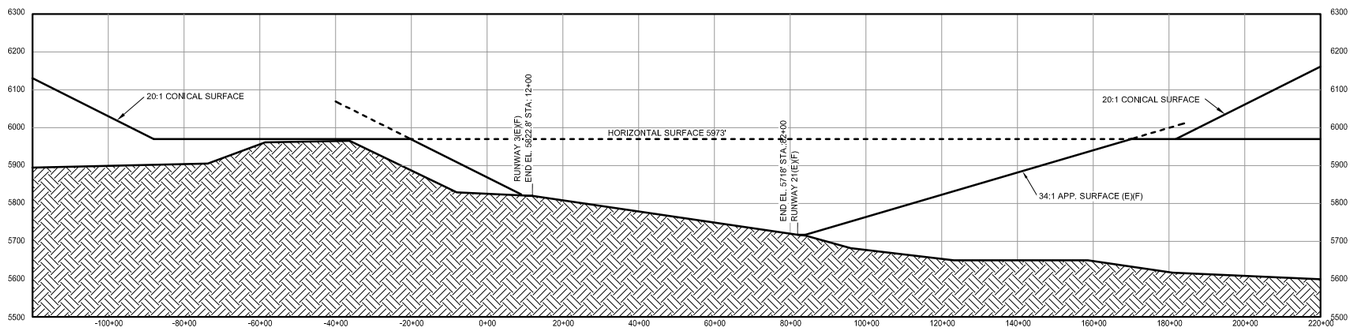
2 APPROACH SURFACE HEIGHT:
AGL- 213'

NOTE: AGL- ABOVE GROUND LEVEL

2000 0 2000 4000
SCALE IN FEET

TYPICAL ISOMETRIC VIEW OF FAR PART 77 SURFACES





RUNWAY 3/21 (E)(F) PROFILE

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

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Project No: 045690
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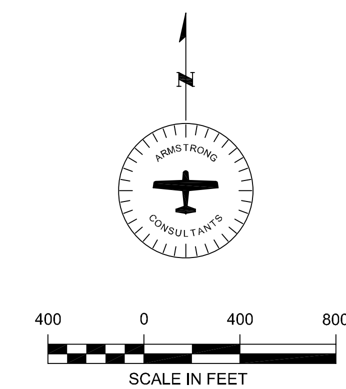
File Name: 5690505

Drawn: RF
Checked: REH
Approved: DAC

FAR
PART "77"
AIRSPACE



Zoning Ordinances Currently in Effect

Ordinance #95 of the Town of Taylor, Arizona, ammended the Town Code by adding new provisions to create an AO (airport overlay) zoning district in the Town Zoning Ordinance.

Notice of Proposed Construction

All Proposed non-AIP construction on airport property, regardless of height or depiction on the approved ALP, must be submitted to FAA using Form 7460-1, *Notice of Proposed Construction or Alteration*, or Form 7480-1, *Notice of Landing Area Proposal,* as appropriate.

Noise Contour

There is no existing 65 DNL noise contour. The noise comtour shown is the future 2025 65 dnl.

LEGEND

EXISTING	FUTURE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)		0000 0000	THRESHOLD LIGHTS
		STRUCTURE/FACILITIES (BUILDING)			REIL
		AIRPORT PROPERTY LINE (APL)			VASI/PAPI
		RUNWAY PROTECTION ZONE (RPZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY SAFETY AREA (RSA)			AIRPORT BEACON
		OBSTACLE FREE ZONE (OFZ)			WIND CONE & SEGMENTED CIRCLE
		RUNWAY OBJECT FREE AREA (ROFA)			AIRCRAFT TIEDOWN
		TAXIWAY SAFETY AREA (TSA)			SECTION CORNER
		TAXIWAY OBJECT FREE AREA (TOFA)			AWOS
		BUILDING RESTRICTION LINE (BRL)			DRAINAGE/ CULVERT
		BARB FENCING/ WILDLIFE FENCING	4125	4125	CONTOURS
					PACS/ SACS

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861 Rood Avenue
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TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

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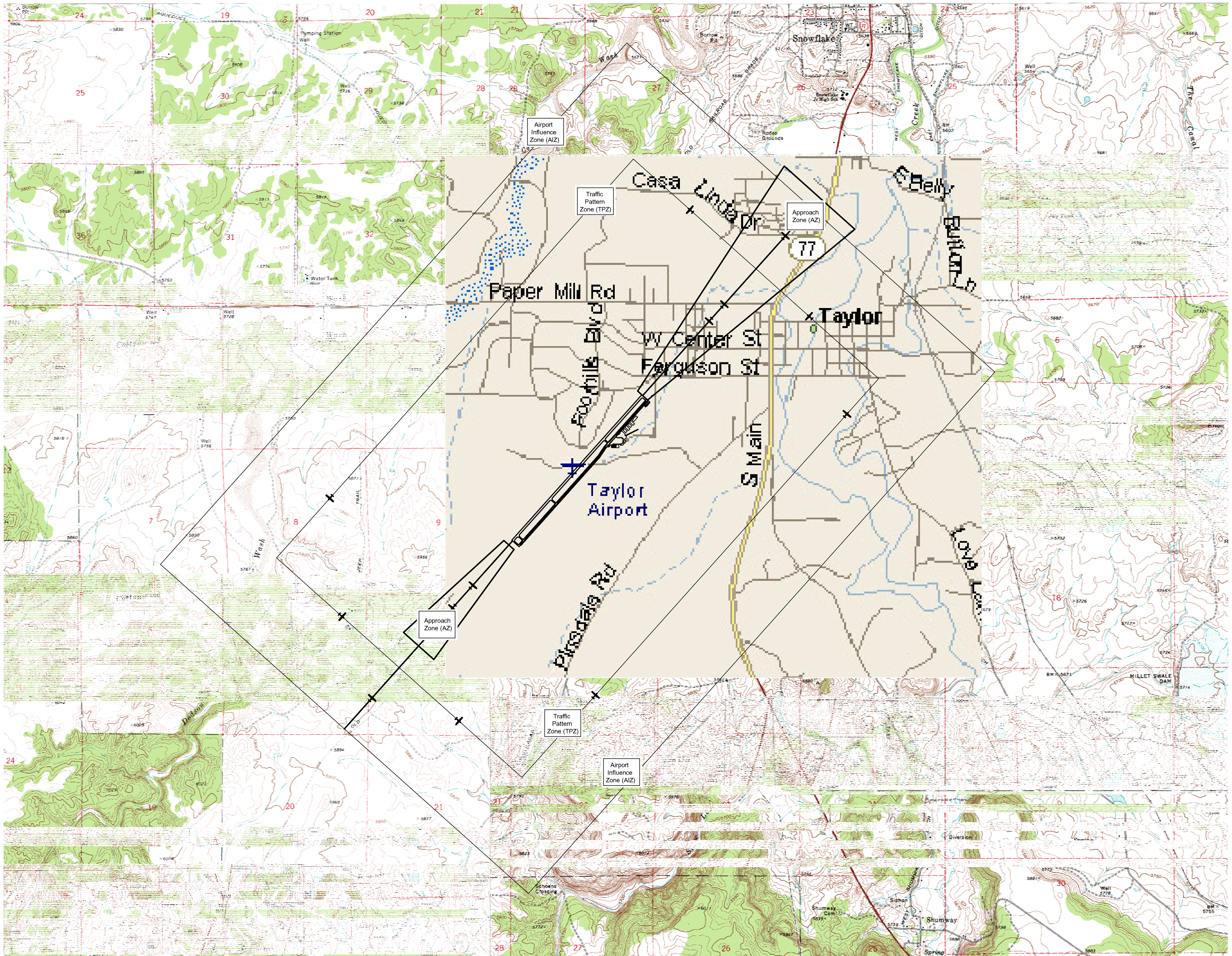
No.	Revision	Date	By

Project No: 045690
Date: 11.30.05
File Name: 5690506

Drawn: RF
Checked: REH
Approved: DAC

ON AIRPORT LAND USE

Sheet: 6 of: 9



LAND USE COMPATIBILITY GUIDELINES

Land Use Category	Airport Influence Zone (AIZ)	Traffic Pattern Zone (TPZ)	Approach Zone (AZ)
Residential			
single-family, nursing homes, mobile homes, multi-family, apartments, condominiums	+	o (3)	- (1,3)
transient lodging, hotel, motel	+	o (3)	- (1,3)
Public			
schools, libraries, hospitals	+	o (3)	- (3)
churches, auditoriums, concert halls	+	o (3)	- (3)
transportation, parking, cemeteries	++	++	++
Commercial and Industrial			
offices, retail trade,	++	+	o (3)
service commercial, wholesale trade, warehousing, light industrial,	++	+	o (3)
general manufacturing, utilities, extractive industry	++	++	o (3)
Agricultural and Recreational			
cropland	++	++	++
livestock breeding	++	++	++
parks, playgrounds, zoos, golf courses, riding stables, water recreation	++	++	++
outdoor spectator sports	++	+	- (3)
amphitheaters	o	- (4)	- -
open space	++	++	++

NOTE: DEVELOPMENT PROJECTS WHICH ARE WILDLIFE ATTRACTANT, INCLUDING SEWERAGE PONDS AND LANDFILLS, WITHIN 10,000 FEET OF THE AIRPORT ARE UNACCEPTABLE. (REF.: FAA AC 150/5200-33)

(1) If allowed, avigation easements and disclosure must be required as a condition of development.
(2) Any structures associated with uses allowed in the RPZ must be located outside the RPZ.
(3) If no reasonable alternative exists, use should be located as far from extended centerline as possible.
(4) If no reasonable alternative exists, use should be located as far from extended runway centerline and traffic patterns as possible.
(5) Transportation facilities in the RPZ (i.e. roads, railroads, waterways) must be configured to comply with Part 77 requirements.

CRITERIA

Land Use Availability	Interpretation/Comments
++ Clearly Acceptable	The activities associated with the specified land use will experience little or no impact due to airport operations. Disclosure of airport proximity should be required as a condition of development.
+ Normally Acceptable	The specified land use is acceptable in this zone or area. Impact may be perceived by some residents. Disclosure of airport proximity should be required as a condition of development. Dedication of avigation easements may also be advisable.
o Marginally Acceptable	An impact will be perceived as a result of allowing the specified use in this zone or area. Disclosure of airport proximity and avigation easements should be required as a condition of development.
- Normally Unacceptable	Specified use should be allowed only if no reasonable alternative exists. Disclosure of airport proximity and avigation easements must be required as a condition of development.
- - Clearly Unacceptable	Specified use must not be allowed. Potential safety or overflight nuisance impacts are likely in this area.

NOTICE OF PROPOSED CONSTRUCTION

An FAA Form 7460-1, Notice of Proposed Construction or Alteration must be submitted for any construction or alteration (including hangars and other on-airport and off-airport structures, towers, etc) over 200 feet in height, or within 20,000 horizontal feet of the airport greater in height than an imaginary surface extending outward and upward from the runway at a slope of 100 to 1.

NOTE: DEVELOPMENT PROJECTS WHICH ARE WILDLIFE ATTRACTANTS, INCLUDING SEWAGE TREATMENT PONDS AND WETLAND MITIGATION BANKS WITHIN 10,000 FEET OF THE RUNWAY OR NEW LANDFILLS WITHIN 6 MILES OF THE AIRPORT ARE UNACCEPTABLE. (REFERENCE FAA ADVISORY CIRCULAR 150/5200-33)

TYPICAL TRAFFIC PATTERN DIRECTION AND FLIGHT TRACK AREA.

N

2000 0 2000 4000

SCALE IN FEET

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
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Grand Junction, CO 81501
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TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

A.I.P. No. 03-04-0065-12
AIRPORT LAYOUT PLANS

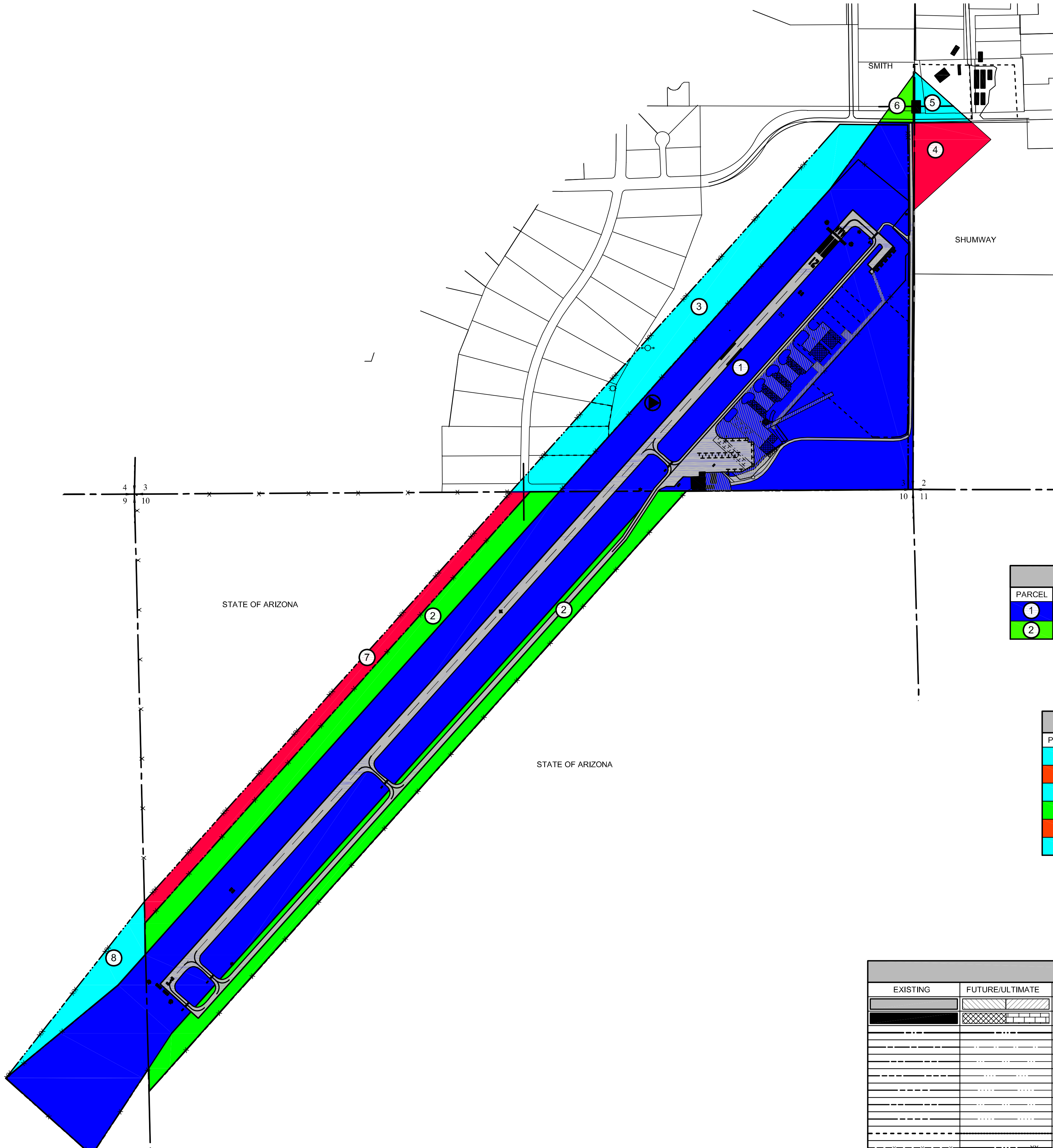
No.	Revision	Date	By

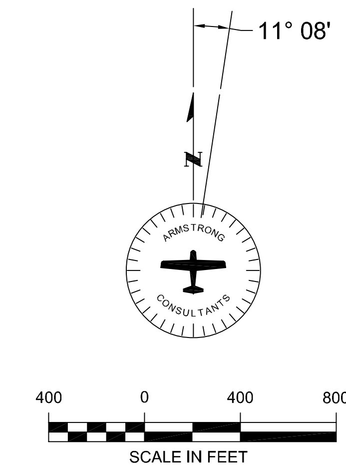
Project No: 045690
Date: 11.30.05
File Name: 5690507

Drawn: RF
Checked: REH
Approved: DAC

OFF AIRPORT LAND USE

Sheet: 7 of: 9





EXISTING AIRPORT ALLOCATION

PARCEL	OWNER	GRANTOR	INTEREST	DATE	Book	Page	Parcel	ACRES	FEDERAL PART.
1	TOWN OF TAYLOR		FEE SIMPLE	---	205	04	019	146.62 ac.	---
2	TOWN OF TAYLOR	STATE OF AZ	FEE SIMPLE	7/10/2003	PATENT No. 53-105493-01			32.94 ac.	A.I.P. No. 03-04-0065-10

FUTURE AIRPORT ALLOCATION

PARCEL	CURRENT OWNER	INTEREST	BOOK	Page	Parcel	ACRES	PURPOSE OF ACQ.
3	Rolling Hills Land and Cattle Co.	FEE SIMPLE	205	10	001 A	19.23 ac.	AERONAUTICAL
4	Shumway, Lee M. & Erma Jan.	FEE SIMPLE	205	09	013 A	4.31 ac.	RPZ PROTECTION
5	Smith, Charles R & Frances L.	FEE SIMPLE	205	09	047 C-E	1.67 ac.	RPZ PROTECTION
6	Smith, Charles R & Frances L.	FEE SIMPLE	205	10	001 W	0.89 ac.	RPZ PROTECTION
7	State of Arizona	FEE SIMPLE	205	04	006 K	0.89 ac.	AERONAUTICAL
8	Shumway, Peter D. & Loretta	FEE SIMPLE	205	42	---	0.89 ac.	AERONAUTICAL

LEGEND

EXISTING	FUTURE/ULTIMATE	DESCRIPTION	EXISTING	FUTURE/ULT.	
		AIRFIELD DEVELOPMENT (ASPHALT)			ROAD
		STRUCTURE/FACILITIES (BUILDING)			THRESHOLD LIGHTS
		AIRPORT PROPERTY LINE (APL)			REIL
		RUNWAY PROTECTION ZONE (RPZ)			VASI/PAPI
		RUNWAY SAFETY AREA (RSA)			WIND CONE
		OBSTACLE FREE ZONE (OFZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY OBJECT FREE AREA (ROFA)			AIRPORT BEACON
		TAXIWAY SAFETY AREA (TSA)			WIND CONE & SEGMENTED CIRCLE
		TAXIWAY OBJECT FREE AREA (TOFA)			AIRCRAFT TIEDOWN
		BUILDING RESTRICTION LINE (BRL)			SECTION CORNER
		FENCING ON AIRPORT PROPERTY LINE			AWOS
4125		CONTOURS			

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

A.I.P. No. 03-04-0065-12
AIRPORT LAYOUT PLANS

No.	Revision	Date	By

Project No: 045690
Date: 11.30.05
File Name: 5690508

Drawn: RF
Checked: REH
Approved: DAC

EXHIBIT "A"
PROPERTY
MAP

Sheet: 8 of: 9

Sheet: 9 of 9

AERIAL PHOTO

Drawn: RF
Checked: REH
Approved: DAC

Project No: 045690
Date: 11.30.05
File Name: 5690509

No.	Revision	Date	By

THE PREPARATION OF THIS DOCUMENT WAS FINANCED IN PART, THROUGH THE AIRPORT IMPROVEMENT PROGRAM FINANCIAL ASSISTANCE FROM THE FEDERAL AVIATION ADMINISTRATION, AS PROVIDED UNDER TITLE 49, UNITED STATES CODE, SECTION 47104. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THIS PLAN BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE OR WOULD HAVE JUSTIFICATION IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

A.I.P. No. 03-04-0065-12
AIRPORT LAYOUT PLANS

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airport engineering and planning services

861 Rood Avenue
Grand Junction, CO 81501
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Chapter Six
Environmental Overview

Taylor Municipal Airport
Airport Master Plan

Chapter Six
Environmental Overview

INTRODUCTION

This environmental overview examines the environmental impacts associated with the proposed airport improvements listed in the Capital Improvement Program (CIP) in the next Chapter. The proposed improvements most likely to result in environmental impacts include land acquisition for the Runway Protection Zone (RPZ), the AWOS relocation, and for the Building Restriction Line (BRL) on the west side of the airport. All other improvements occur on existing airport property. This chapter is intended to provide an overview of the potential impacts and identify additional environmental documentation that may be required as a prerequisite to development.

AIR QUALITY

The Clean Air Act of 1970 was enacted to reduce emissions of specific pollutants via uniform Federal standards. These standards include the National Ambient Air Quality Standards (NAAQS) which set maximum allowable ambient concentrations of ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), lead (Pb) and particulate matter 10 microns or smaller (PM_{10}). Section 176(c) of the Act, in part, states that no Federal agency shall engage in, support in any way or provide financial assistance for, license or permit or approve any activity that does not conform to the State Implementation Plan.

Federal Aviation Administration Order 5050.4B requires air quality analysis for projects in areas not in compliance with the Environmental Protection Agency (EPA) approved State Implementation Plan (SIP). Because the entire area is considered in attainment with the SIP, no further air quality analysis is required.

Construction emissions, specifically dust, are not a long-term factor. These emissions are described in the "Construction Impacts" section of this Chapter. The necessary permits will be obtained before construction begins and construction projects will conform to FAA Advisory Circular (AC) 150-5370-10A, *Standards for Specifying Construction of Airports*.

The following best management practices are recommended to minimize construction emissions:

I. Site Preparation
   A. Minimize land disturbance;
   B. Use watering trucks to minimize dust;
   C. Cover trucks when hauling dirt or debris;
   D. Stabilize the surface of dirt piles and any disturbed areas;
   E. Use windbreaks to prevent any accidental dust pollution; and
   F. Segregate storm water drainage from construction sites and material piles.

II. Construction Phase
   A. Cover trucks when transferring materials; and
   B. Minimize unnecessary vehicular and machinery activities.

III. Completion Phase
   A. Revegetate any disturbed land not used;
   B. Remove unused material and dirt piles; and
   C. Revegetate all disturbed areas if appropriate.

COASTAL RESOURCES

There are no coastal zones associated with the proposed development. Therefore, compliance with the Coastal Zone Management Act of 1972 and the Coastal Barriers Resources Act of 1982 is not a factor.

COMPATIBLE LAND USE

Land use compatibility considerations include safety, height hazards and noise exposure. Although extremely rare, most aircraft accidents occur within 5,000 feet of a runway. Therefore, the ability of the pilot to bring the aircraft down in a manner that minimizes the severity of an accident is dependent upon the type of land uses within the vicinity of the airport. Land uses are reviewed in three zones surrounding the airport: the Runway Protection Zone (RPZ), the Approach Zone and the Flight Pattern Zone. The RPZ is a trapezoidal area extending 1,200 feet beyond the ends of the runway and is typically included within the airport property boundary. Residential and other uses that result in congregations of people are restricted from the runway protection zone. The approach zone generally falls within the FAR Part 77 Approach Surface area. Within the approach zone, public land uses, such as schools, libraries, hospitals and churches should be avoided. New residential developments should include avigation easements and disclosure agreements. The flight pattern zone is generally the area within one mile of the airport. Within the flight pattern zone, avigation easements should be considered and disclosure statements required.

The closest populated areas to the Taylor Municipal Airport are located immediately north of the airport. The majority of the Town of Taylor is located within either the Traffic Pattern Zone or the Airport Influence Zone. There are also an number of residential land uses in the Approach Zone to Runway 21. The planned 200-foot relocation of the Runway 21 threshold will increase the height of the approach zone over these incompatible land uses and reduce noise exposure to the residences.

Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*, provides imaginary surfaces surrounding an airport that should be protected from penetration by objects. These include the approach surface, horizontal surface and conical surface. These surfaces were described in Chapter 4. Proposed structures in the vicinity of the airport should be reviewed against the Part 77 criteria to ensure hazards to air navigation are not created. Because the terrain off the end of Runway 21 is lower than the runway elevation, no penetrations to the approach surface currently exist. Objects penetrating these surfaces could result in a hazard to air navigation.

The Town of Taylor has recently implemented an Airport Overlay Zoning Ordinance, including Compatible Land Use Overlay and Height Restriction drawings. This ordinance and drawings will protect the airport from future incompatible land uses and any objects that may be considered hazards to air navigation. A copy of the ordinance and zoning maps are included in Appendix B.

CONSTRUCTION IMPACTS

Local, State and Federal ordinances and regulations address the impacts of construction activities, including construction noise, dust and noise from heavy equipment traffic, disposal of construction debris and air and water pollution.

Construction operations for the proposed development will cause specific impacts resulting solely from and limited exclusively to the construction period. Construction impacts are distinct in that they are temporary in duration and the degree of adverse impacts decreases as work is concluded. The following construction impacts can be expected:

- A temporary increase in particulate and gaseous air pollution levels as a result of dust generated by construction activity and by vehicle emissions from equipment and worker's automobiles;
- Increases in solid and sanitary wastes from the workers at the site;
- Traffic volumes that would increase in the airport vicinity due to construction activity (workers arriving and departing, delivery of materials, etc.);
- Increase in noise levels at the airport during operation of heavy equipment; and
- Temporary erosion, scarring of land surfaces and loss of vegetation in areas that are excavated or otherwise disturbed to carry out future developments.

All construction projects will comply with guidelines set forth in FAA Advisory Circular 150/5370-10A, *Standards for Specifying the Construction of Airports*. The contractor will obtain the required construction permits. The contractor will also prepare Storm Water Pollution Prevention and Fugitive Dust Control Plans for construction. These requirements will be specified in the contract documents for the construction of the proposed improvements.

DOT ACT – SECTION 4(F)

Section 303c of Title 49, U.S.C., formerly Section 4(f) of DOT Act of 1966, provides that the Secretary of Transportation shall not approve any program or project that requires the use of any publicly owned land from a public park, recreation area or wildlife and waterfowl refuge of National, State or Local significance or land from an historic site of National, State or Local significance, as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such project includes all possible planning to minimize impact. Improvements will not require land from any public park, recreation area or wildlife and waterfowl refuge.

FARMLANDS

The Farmland Protection Policy Act (FPPA) authorizes the Department of Agriculture to develop criteria for identifying the effects of Federal programs upon the conversion of farmland to uses other than agriculture.

Conversion of "Prime or Unique" farmland may be considered a significant impact. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed or fiber without intolerable soil erosion as determined by the Secretary of Agriculture. Unique farmland is land other than prime farmland which is used to produce specific high value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits and vegetables.

Figure 6-1 shows the high quality farmland in the State of Arizona in Red and Green. As shown, there is no high quality farmland in Navajo County.

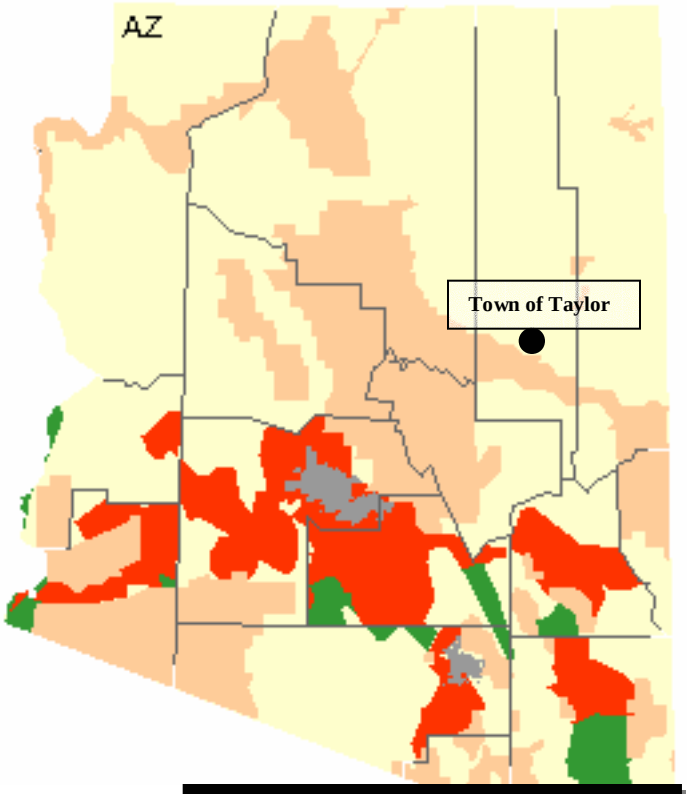


FIGURE 6-1. ARIZONA HIGH QUALITY FARMLAND

FISH, WILDLIFE, AND PLANTS

This category concerns potential impacts to existing wildlife habitat and threatened and endangered species. Examining both the area of land to be altered or removed and its relationship to surrounding habitat quantify the significance of the impacts in this category. For example, removal of a few acres of habitat which represents a small percentage of the area's total similar habitat or which supports a limited variety of common species would not be considered significant. However, removal of a sizeable percentage of the area's similar habitat or habitat which is known to support rare species, would be considered significant impact. Improvements to the Taylor Municipal Airport would remove approximately 27 acres of habitat. The surrounding area offers an abundance of similar habitat and the proposed improvements are not considered to be a significant habitat loss.

Section 7 of the Endangered Species Act, as amended, requires each Federal agency to insure that "any action authorized, funded or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species . . .".

An *Endangered Species* is defined as any member of the animal or plant kingdoms determined to be in danger of extinction throughout all or a significant portion of its range. A *Threatened Species* is defined as any member of the plant or animal kingdoms that are likely to become endangered in the foreseeable future.

The following species are currently listed for Navajo County, but do not necessarily occur in the vicinity of Taylor or with the project areas.

Endangered
Black-footed ferret Mustela nigripes Endangered
California Brown pelican Pelecanus occidentalis californicus Endangered
California condor Gymnogyps californianus Endangered
Peebles Navajo cactus Pediocactus peeblesianus var. peeblesianus Endangered
Southwestern willow flycatcher Empidonax traillii extimus Endangered

Threatened
Apache (Arizona) trout Oncorhynchus apache Threatened
Bald eagle Haliaeetus leucocephalus Threatened
Chiricahua leopard frog Rana chiricahuensis Threatened
Little Colorado spinedace Lepidomeda vittata Threatened
Loach minnow Tiaroga cobitis Threatened
Mexican spotted owl Strix occidentalis lucida Threatened
Navajo sedge Carex specuicola Threatened
Spikedace Meda fulgida Threatened

Candidate
Yellow-billed cuckoo, Coccyzus americanus

Projects occurring in previously undisturbed areas should be evaluated and/or surveyed for the threatened or endangered species prior to construction.

FLOODPLAINS

Floodplains are defined by Executive Order 11988, Floodplain Management, as the lowland and relatively flat areas adjoining coastal water . . . including at a minimum, that area subject to a one percent or greater chance of flooding in any given year . . . ", that is, an area which would be inundated by a 100 year flood. If a proposed action involves a 100 year floodplain, mitigating measures must be investigated in order to avoid significant changes to the drainage system.

As described in FAA Order 5050.4B, *Airport Environmental Handbook*, an airport development project would be a

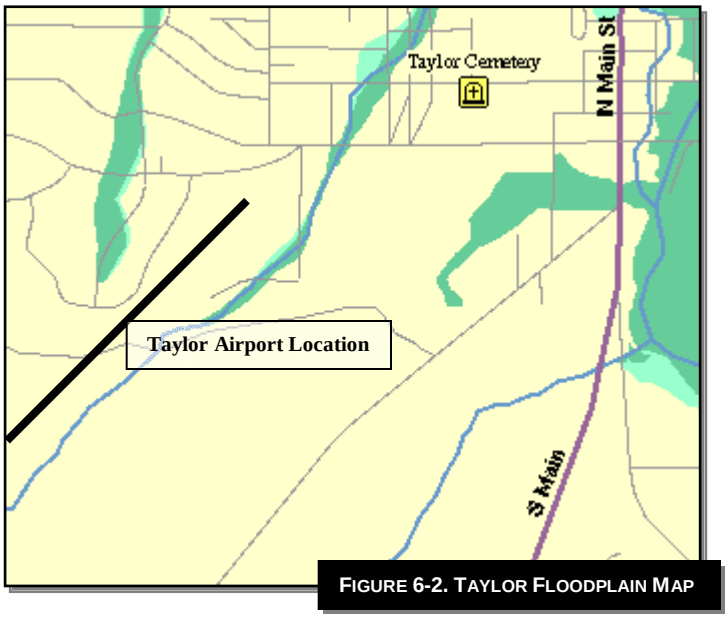


FIGURE 6-2. TAYLOR FLOODPLAIN MAP

significant impact pursuant to NEPA if it results in notable adverse impacts on natural and beneficial floodplain values. Mitigation measures for base floodplain encroachments may include committing to special flood related design criteria, elevating facilities above base flood level, locating nonconforming structures and facilities out of the floodplain or minimizing fill placed in floodplains. While areas designated as 100-year floodplains are located immediately east and west of the airport, the existing and planned property lines for the Taylor Municipal Airport do not encroach upon a designated 100-year floodplain and no floodplain impacts are expected.

HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

Four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances and wastes. The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the Resource Conservation and Recovery Act (RCRA) (as amended by the Federal Facilities Compliance Act of 1992) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA or Superfund) and the Community Environmental Response Facilitation Act of 1992. RCRA governs the generation, treatment, storage and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

The area surrounding the Taylor Municipal Airport is currently used for agricultural and ranching purposes. There is no reason to believe that the proposed improvements will be constructed in an area that contains hazardous waste.

Airport development actions that relate only to construction or expansion of runways, taxiways and related facilities do not normally include any direct relationship to solid waste collection, control or disposal other than that associated with the construction itself. The nature of the proposed airport meets these criteria and will not significantly increase net waste output for the town.

Any solid waste disposal facility (i.e. sanitary landfill) which is located within 5,000 feet of all runways planned to be used by piston-powered aircraft or within 10,000 feet of all runways planned to be used by turbine aircraft, is considered by the FAA to be an incompatible land use because of the potential for conflicts between bird habitat and low-flying aircraft. This determination is found in FAA Advisory Circular 150/5200-33, *Hazardous Wildlife Attractants On or Near Airports*. There are no solid waste disposal facilities within 10,000 feet of the airport. Any planned solid waste disposal facilities should be located at least 10,000 feet from the runway.

HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act of 1966 requires that an initial review be made in order 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 area within which direct and indirect impacts could occur and thus cause a change in historic, architectural, archaeological or cultural properties).

The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery and preservation of significant scientific, prehistorical, historical, archaeological or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally funded or federally licensed project.

There are no known archaeological sites within the vicinity of the Taylor Municipal Airport. Projects occurring in previously undisturbed areas should be evaluated and/or surveyed for historical, architectural, archaeological and cultural resources prior to construction.

LIGHT EMISSIONS AND VISUAL IMPACTS

Airfield lighting is the main source of light emissions emanating from an airport. Rotating airport beacons are provided so pilots can identify the location of an airport at night or in reduced visibility conditions. Rotating beacons consist of alternating white and green lights rotating at six rotations per minute. Beacons are typically mounted on a tower or on top of a hangar or other building. Specifications for spotting airport beacons allow the beam to be angled from 2^{o} to 12^{o} above the horizon. The standard setting is 6^{o}. If necessary, the beacon can be shielded to reduce visibility of the beacon from below the horizon line. Medium Intensity Runway Edge Lights (MIRLs) are single white lights mounted on 18 inch posts spaced at 200 foot intervals along both edges of the runway. They define the boundaries of the runway surface usable for takeoff and landing. Precision Approach Path Indicators (PAPIs) are used for visual decent guidance and consist of two light units located to the left of the runway and perpendicular to the runway centerline. The lights are directed at a glide path angle of 3^{o} above the runway. If the aircraft is above the glide path, the pilot will see all white lights. If the pilot is on the proper glide path, the light unit closest to the runway will be red and the unit farthest from the runway will be white. When the pilot is below the glide path both of the light units will be red. PAPIs have an effective visual range from the air of approximately five miles during the day and up to twenty miles at night. These visual aids are extremely useful and enhance safety in situations where there are few visual references surrounding the airport. Runway End Identifier Lights (REILs) are synchronized flashing lights located laterally on each side of the runway threshold. They are angled upward and outward from the runway and provide rapid and positive identification of the threshold of a runway. This is especially useful in metropolitan and densely developed areas where lights in the vicinity of the airport make it difficult to identify the runway. Proposed improvements will primarily replace existing lighting and will not substantially increase light emission impacts at the Taylor Municipal Airport.

NATURAL RESOURCES, ENERGY SUPPLY, AND SUSTAINABLE DESIGN

Executive Order 13123, Greening the Government Through Efficient Energy Management (64FR 30851, June 8, 1999), encourages each Federal agency to expand the use of renewable energy within its facilities and in its activities. E.O. 13123 also requires each Federal agency to reduce petroleum use, total energy use and associated air emissions and water consumption in its facilities.

It is also the policy of the FAA, consistent with NEPA and the CEQ regulations, to encourage the development of sustainability. All elements of the transportation system should be designed with a view to their aesthetic impact, conservation of resources such as energy, pollution prevention, harmonization with the community environment and sensitivity to the concerns of the traveling public.

Energy requirements associated with airport improvements generally fall into two categories: 1) changed demand for stationary facilities (i.e. airfield lighting and terminal building heating) and 2) those that involve the movement of air and ground vehicles (i.e. fuel consumption). The use of natural resources includes primarily construction materials and water.

Energy requirements are not expected to significantly increase as a result of the proposed improvements. There is an existing water line at the airport, however, wastewater is sent to a septic system. It is recommended that a septic line be extended to the airport.

Demand for aircraft fuel is expected to increase. Aircraft fuel should be stored in above ground tanks at the airport that are required to conform to EPA regulations. Significant increases in ground vehicle fuel consumption are not anticipated.

NOISE

Noise analysis considerations include whether the Federal thresholds of noise exposure are exceeded, whether the 65 day-night level (DNL) noise contour extends beyond airport property and if there are any residences, churches, schools or hospitals within the 65 DNL noise contour.

The basic measure of noise is the sound pressure level that is recorded in decibels (dBA). The important point to understand when considering the impact of noise on communities is that equal levels of sound pressure can be measured for both high and low frequency sounds. Generally, people are less sensitive to sounds of low frequency than they are to high frequencies. An example of this might be the difference between the rumble of automobile traffic on a nearby highway and the high-pitched whine of jet aircraft passing overhead. At any location, over a period of time, sound pressure fluctuates considerably between high and low frequencies. Figure 6-3 depicts a Sound Level Comparison of different noise sources.

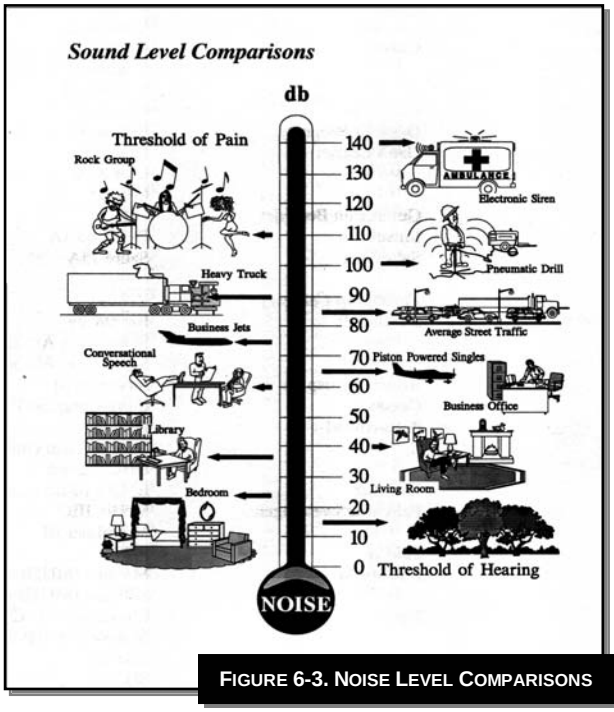


FIGURE 6-3. NOISE LEVEL COMPARISONS

The identification of airport generated noise impacts and implementation of noise abatement measures is a joint responsibility of airport operators and users. FAA Order 5050.4B states that "no noise analysis is needed for proposals involving Design Group I and II airplanes operating at airports whose forecast operations in the period covered by the EA do not exceed 90,000 annual adjusted propeller operations or 700 annual adjusted jet operations . . .". Noise analysis is not required for the Taylor Municipal Airport, however, due to the proximity of the airport to the residential areas of the Town, a noise analysis was completed. The 65 DNL noise contour for the 20-year condition at the airport is shown in Figure 6-4 and does not extend beyond the airport property line.

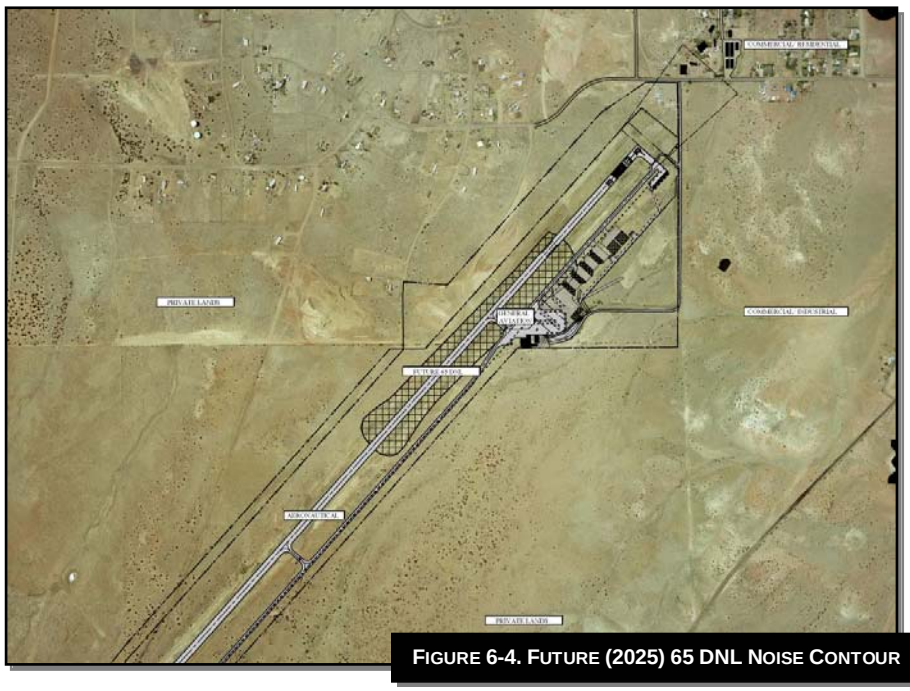


FIGURE 6-4. FUTURE (2025) 65 DNL NOISE CONTOUR

VOLUNTARY NOISE ABATEMENT PROGRAM

Although the noise exposure levels will not exceed 65 DNL over any noise sensitive area, several voluntary measures can be applied to minimize noise exposure to surrounding areas. Several of these measures are listed below. It is recommended that a voluntary noise abatement program be implemented for the airport and publicized to all based and transient pilots.

Pilots:

- Be aware of noise sensitive areas, particularly residential areas near the airport and avoid low flight over these areas.
- Fly traffic patterns tight and high, keeping the aircraft as close to the field as possible.
- In constant-speed-propeller aircraft, do not use high RPM settings in the pattern. Propeller noise from high-performance singles and twins increases drastically at high RPM settings.
- On takeoff, reduce to climb power as soon as safe and practical.
- Climb after liftoff at best-angle-of-climb speed until crossing the airport boundary, then climb at best rate.
- Depart from the start of the runway rather than intersections, for the highest possible altitude when leaving the airport vicinity.
- Avoid prolonged run-ups and do them inside the airport area, rather than at its perimeter.
- Try low-power approaches and always avoid the low, dragged-in approach.

Instructors:

- Teach noise abatement procedures to all students, including pilots you take up for flight reviews.
- Know noise-sensitive areas, and point them out to students.
- Assure students fly at or above the recommended pattern altitude.
- Practice maneuvers over unpopulated areas and vary practice areas so that the same locale is not constantly subjected to aircraft operations.
- During practice of ground-reference maneuvers, be particularly aware of houses or businesses in your flight path.
- Stress that high RPM propeller settings are reserved for takeoff and for short final but not for flying in the pattern. Pushing the propeller to high RPM results in significantly higher levels of noise.

Fixed Base Operators (FBOs):

- Identify noise-sensitive areas and work with customers to create voluntary noise abatement procedures.
- Post any noise abatement procedures in a prominently visible area and remind pilots of the importance of adhering to them.
- Call for the use of the least noise sensitive runway whenever wind conditions permit.
- Initiate pilot education programs to teach and explain the rationale for noise abatement procedures and positive community relations.

Airport Owner and Surrounding Jurisdictions:

- Maintain appropriate zoning in the vicinity of the airport and see that noise sensitive land uses are not authorized within pattern, approach and departure paths.
- Disclose the existence of the airport and the airport influence area to real estate purchasers.
- Publish voluntary noise procedures on the Internet.
- Publish voluntary calm runway use procedures.

Source: Aircraft Owners and Pilots Association (AOPA)

SECONDARY (INDUCED) IMPACTS

These secondary or induced impacts involve major shifts in population, changes in economic climate or shifts in levels of public service demand. The effects are directly proportional to the scope of the project

under consideration. Assessment of induced socioeconomic impacts is usually only associated with major development at large air carrier airports, which involve major terminal building development or roadway alignments and similar work. The extent of the indirect socioeconomic impacts of the proposed development is not of the magnitude that would normally be considered significant; however, positive impacts can be foreseen in the form of direct, indirect and induced economic benefits generated from the airport.

SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, the accompanying Presidential Memorandum and Order DOT 5610.2, Environmental Justice, require FAA to provide for meaningful public involvement by minority and low-income populations and analysis, including demographic analysis, that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse. Included in this process is the disclosure of the effects on subsistence patterns of consumption of fish, vegetation or wildlife and effective public participation and access to this information. The Presidential Memorandum that accompanied E.O. 12898, as well as the CEQ and EPA Guidance, encourage consideration of environmental justice impacts in EA's especially to determine whether a disproportionately high and adverse impact may occur. Environmental Justice is examined during evaluation of other impact categories, such as noise, air quality, water, hazardous materials and cultural resources.

SOCIOECONOMIC IMPACTS

Induced socioeconomic impacts are usually only associated with major development at large air carrier airports. The socioeconomic impacts produced as a result of the proposed improvements to the Taylor Municipal Airport are expected to be positive in nature and would include direct, indirect and induced economic benefits to the local area. These airport improvements are expected to attract additional users and in turn to encourage tourism, industry and to enhance the future growth and expansion of the community's economic base.

If acquisition of real property or displacement of persons is involved, 49 CFR part 24 (implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970), as amended must be met for Federal projects and projects involving Federal funding. Otherwise, the FAA, to the fullest extent possible, observes all local and State laws, regulations and ordinances concerning zoning, transportation, economic development, housing, etc. when planning, assessing or implementing the proposed action.

ENVIRONMENTAL JUSTICE

The focus of the Environmental Justice evaluation is to determine whether the proposed action results in an inequitable distribution of negative effects to special population groups, as compared to negative effects on other population groups. These special population groups include minority or otherwise special ethnicity or low-income neighborhoods.

The proposed action is not expected to result in any significant negative impacts to any population groups and therefore, would not result in disproportionate negative impacts to any special population group. Socioeconomic and induced economic impacts are expected to be positive in nature and are expected to benefit all population groups in the area.

CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Pursuant to Executive Order 13045, Protection of Children from the Environmental Health Risks, Federal agencies are directed, as appropriate and consistent with the agency's mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Agencies are encouraged to participate in implementation of the Order by ensuring that their policies, programs, activities and standards address disproportionate risks to children that result from environmental health risks or safety risks. The proposed improvements are not expected to result in any environmental health risks or safety risks on children.

WATER QUALITY

Water quality considerations related to airport development often include increased surface runoff and erosion and pollution from fuel, oil, solvents and deicing fluids. Potential pollution could come from petroleum products spilled on the surface and carried through drainage channels off of the airport. State and Federal laws and regulations have been established to safeguard these facilities. These regulations include standards for above ground and underground storage tanks, leak detection and overflow protection. An effective Storm Water Pollution Prevention Plan (SWPPP) identifies storm water discharge points on the airport, describes measures and controls to minimize discharges and details spill prevention and response procedures. The Town of Taylor completed a SWPPP in 1996 identifying the direction of flow for a fuel spill and outlining procedures for responding to such an incident. In July of 2002, the EPA amended the Oil Pollution Prevention Regulation at Title 40 of the Code of Federal Regulations, Part 112 (40 CFR Part 112). Subparts A through C of this regulation are often referred to as the "SPCC rule" because they describe requirements for certain facilities (including airports) to prepare and implement Spill Prevention Control and Countermeasure (SPCC) Plans. The current compliance dates are February 16, 2006 to prepare a plan and August 18, 2006 to implement the plan.

In accordance with Section 402(p) of the Clean Water Act, a National Pollution Discharge Elimination System (NPDES) General Permit is required from the Environmental Protection Agency for construction projects that disturb one or more acres of land. Applicable contractors will be required to comply with the requirement and procedures of the NPDES General Permit, including the preparation of a Notice of Intent and a Storm Water Pollution Prevention Plan, prior to the initiation of construction activities.

Recommendations established in FAA Advisory Circular 150/5370-10, *Standards for Specifying Construction of Airports*, Item P-156, *Temporary Air and Water Pollution, Soil Erosion and Siltation Control,* will be incorporated into the project design and specifications. The design and construction of the proposed improvements will incorporate Best Management Practices (BMP) to reduce erosion, minimize sedimentation, control non-storm water discharges and to protect the quality of surface water features potentially effected. These practices will be selected based on the site's characteristics and those factors within the contractor's control and may include: construction scheduling, limiting exposed areas, runoff velocity reduction, sediment trapping and good housekeeping practices. Future fuel storage and dispensing facilities should be designed, constructed, operated and maintained in accordance with Federal, State and Local regulations. Waste fluids, including oils, coolants, degreasers and aircraft wash facility wastewater will be managed and disposed of in accordance with applicable Federal, State and Local regulations.

WETLANDS

Wetlands are defined in Executive Order 11990, *Protection of Wetlands*, as "those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs and similar areas such as sloughs, potholes, wet meadows, river overflows and natural ponds. Jurisdictional Waters of the United States may also include drainage channels, washes, ditches, arroyos or other waterways that are tributaries to Navigable Water of the United States or other waters where the degradation or destruction of which could affect interstate or foreign commerce. Based on site visits and reviews of aerial photography it does not appear that improving the airport would impact wetlands.

WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act (PL 90-542) describes those river areas eligible for protection from development. As a general rule, these rivers possess outstanding scenic, recreational, geological, fish and wildlife, historical, cultural or other similar value.

The Wild and Scenic River list from the National Park Service indicated one Wild and Scenic River listed in Arizona. The Verde River is located in Yavapai County in western Arizona, approximately 75 miles from Taylor and would not be affected by the proposed improvements.

MEANS TO MITIGATE AND/OR MINIMIZE ADVERSE ENVIRONMENTAL IMPACTS

Where appropriate, the mitigation or minimization of environmental impacts was noted in the discussion of impacts. These actions are summarized below:

- Maintain compatible land uses in the vicinity of the airport;
- Acquire land for the runway protection zone for Runway 21;
- Utilize pilot controlled lighting on all airfield lighting and visual aids. Utilize timers or motion sensors for apron and automobile parking area lights;
- Adhere to FAA AC 150/5370-10A, *Standards for Specifying the Construction of Airports* and best management practices to minimize or eliminate impacts to water quality and air quality during construction;

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

The potential environmental impacts of the proposed actions are summarized below in Table 6-1.

TABLE 6-1 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

Air Quality	⦿	Short-term during construction
Coastal Resources	○	
Compatible Land Use	○	
Construction Impacts	⦿	Short-term noise, dust, and exhaust
DOT Act – Section 4(F)	○	
Fish, Wildlife, and Plants	○	
Floodplains	○	
Hazardous Materials, Pollution Prevention, and Solid Waste	○	
Historical, Architectural, Archaeological, and Cultural Resources	○	
Light Emissions, and Visual Impacts	○	
Natural Resources, Energy Supply, and Sustainable Design	○	
Noise	⦿	Increased aircraft operations
Secondary (Induced) Impacts	⦿	Positive – direct/indirect economic benefits
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Heath and Safety Risks	○	
Water Quality	⦿	Water quality certification and update SWPPP
Wetlands	○	
Wild and Scenic Rivers	○	

○ No Impact ⦿ Moderate Impact ● Significant Impact

Based on this information, none of the proposed projects are expected to exceed thresholds of significance established by the FAA in FAA Order 1050.1E Appendix A and FAA Order 5050.4A Chapter 5. As such Categorical Exclusions would apply.

Chapter Seven
Capital Improvement Program (CIP) and Financial Plan

Taylor Municipal Airport
Airport Master Plan

Chapter Seven
Capital Improvement Program (CIP) and Financial Plan

INTRODUCTION

A program of recommended airport development for Taylor Municipal Airport has been formulated to guide the sponsor in the systematic development of the airport and to aid the Federal Aviation Administration, Arizona Department of Transportation Aeronautics Division and the Town in allocating funding over the planning period. In Arizona, projects eligible for Airport Improvement Program (AIP) participation are normally funded at 95 percent by the FAA, 2.5 percent by the State and 2.5 percent by the Sponsor. The grant eligible items typically include airfield and aeronautical related facilities such as runways, taxiways, aprons, lighting and visual aids as well as land acquisition and environmental tasks needed to accomplish the improvements. The public use (non-revenue generating) portions of passenger terminals are also grant eligible. In addition, recent AIP legislation has made fuel systems and hangars eligible, however, these items are considered a low priority for FAA funding.

CAPITAL IMPROVEMENT PROGRAM (CIP)

Future airport development at the Taylor Municipal Airport, as included in this study, covers a twenty-year period. Development items are grouped into three phases. Phase I is short-term (1-5 years) and Phase II is medium-term (6-10 years) and Phase III is long-term (11-20 years). Estimated development costs are based on the proposed improvements (as shown on the airport layout plan) and are included for each item in the Capital Improvement Program (CIP). Proposed improvements are based on the recommended facility requirements discussed in Chapter 3. The phasing of projects assists the airport sponsor in budgetary planning for construction projects. A drawing showing the phasing of each project is included at the end of this Chapter. The sequence in which the below projects are competed is important as the ultimate configuration of the airport will require numerous projects. For instance, the new vehicle parking area must be completed before the Apron Expansion Phase I and the AWOS must be relocated before the Apron Expansion Phase II.

Phase I (1-5 Years)
Install Fuel System
Apron Area Fencing
Runway Threshold Relocate (including PAPIs)
Obstruction Removal
Construct Vehicle Parking
Replace Runway Lighting
Construct Taxilanes to T-hangar area
Land Acquisition for AWOS Relocation
Land Acquisition for RPZ
Apron Expansion and Reconfiguration (Phase I)
Construct T-hangar Access Road
Taxiway Structural Upgrade
Replace Rotating Beacon
Extend Utilities to T-hangar Area
Relocate AWOS
Runway 3/21 Overlay

Phase II (6-10 Years)
Construct Taxilanes to T-hangar area
Construct By-Pass Taxiway to Runway 21
Apron Expansion (Phase II)
Land Acquisition for BRL

Phase III (11-20 Years)
Relocate 5 T-hangars to New Apron Area
Install Parallel Taxiway Lighting
Construct 10-unit T-hangar
Construct Taxilanes to Corporate Hangar Area

TABLE 7-1 20-YEAR CAPITAL IMPROVEMENT PROGRAM

Phase I, Short-Term Development Items	TOTAL	FAA	STATE	SPONSOR
1 Replace Runway Lighting	$180,000	$171,000	$4,500	$4,500
2 Prepare SPCC Plan	$10,000	$0	$0	$10,000
3 Apron Area Fencing	$75,000	$71,250	$1,875	$1,875
4 Runway Threshold Relocate (including PAPIs)	$78,000	$74,100	$1,950	$1,950
5 Obstruction Removal	$15,000	$14,250	$375	$375
6 Construct Vehicle Parking	$65,000	$61,750	$1,625	$1,625
7 Install Fuel System	$50,000	$171,000	$4,500	$4,500
8 Construct Taxilanes to T-hangar area (Phase I)	$145,000	$57,000	$1,500	$1,500
9 Land Acquisition for AWOS Relocation	$54,000	$51,300	$1,350	$1,350
10 Land Acquisition for RPZ	$36,000	$34,200	$900	$900
11 Apron Expansion and Reconfiguration (Phase I)	$135,000	$128,250	$3,375	$3,375
12 Construct T-hangar Access Road	$60,000	$57,000	$1,500	$1,500
13 Taxiway Structural Upgrade	$30,000	$0	$27,000	$3,000
14 Replace Rotating Beacon	$100,000	$95,000	$2,500	$2,500
15 Extend Utilities to T-hangar Area	$60,000	$57,000	$1,500	$1,500
16 Relocate AWOS	$135,000	$128,250	$3,375	$3,375
17 Runway 3/21 Overlay	$1,000,000	$950,000	$25,000	$25,000
Total Short Term Cost	**$2,228,000**	**$2,078,600**	**$81,700**	**$67,700**
Phase II, Medium-Term Development Items	TOTAL	FAA	STATE	SPONSOR
21 Construct Taxilanes to T-hangar area (Phase II)	$145,000	$57,000	$1,500	$1,500
22 Apron Expansion (Phase II)	$240,000	$228,000	$6,000	$6,000
23 Land Acquisition for BRL	$27,000	$25,650	$675	$675
Total Medium-Term Cost	**$412,000**	**$391,400**	**$10,300**	**$10,300**
Phase III, Long-Term Development Items	TOTAL	FAA	STATE	SPONSOR
31 Relocate 5 T-hangars to New Apron Area	$100,000	$95,000	$2,500	$2,500
32 Install Parallel Taxiway Lighting	$100,000	$95,000	$2,500	$2,500
33 Construct 10-unit T-hangar	$200,000	$190,000	$5,000	$5,000
34 Construct Taxilanes to Corporate Hangar Area	$120,000	$114,000	$3,000	$3,000
35 Land Acquisition for BRL	$20,000	$19,000	$5,000	$5,000
Total Long-Term Cost	**$540,000**	**$513,000**	**$13,500**	**$13,500**
TOTAL	**$3,180,000**	**$2,983,000**	**$105,500**	**$91,500**

Cost estimates in 2005 dollars
Cost estimates include 25% Engineering, Administration and Contingencies and 10% Mobilization

CAPITAL DEVELOPMENT

Federal Grant Assistance: The phasing of projects assists the airport sponsor in budgetary planning for construction improvements that are needed to provide safe and functional facilities for aviation demands. Phased development schedules also assist the airport sponsor in contingencies and construction. Table 7-1 assumes that the Federal Aviation Administration will participate with funding from the Airport Improvement Program (AIP) of 95 percent of eligible items and the Arizona Department of Transportation Aeronautics Division will contribute 2.5 percent towards capital improvements. The Town of Taylor would then be responsible for providing 2.5 percent matching funds for grant eligible projects. The Town may meet its local share requirements through cash, in-kind service, force-account, donations or private/third party participation.

The Airport and Airways Act of 1982 created and authorized the Airport Improvement Program (AIP) to assist in the development of a nationwide system of public-use airports adequate to meet the current

projected growth of civil aviation. The Act provides funding for airport planning and development projects at airports included in the National Plan of Integrated Airport Systems (NPIAS).

State Assistance: The Arizona Department of Transportation's (ADOT) Aeronautics Division participates in funding airport development and maintenance projects in the State of Arizona. ADOT normally contributes 90 percent to projects without Federal participation and contributes 2.5 percent matching funds to the FAA's 95 percent funding of Federally eligible capital improvement projects. The resulting local share is generally 2.5 percent for FAA and State funded projects and 10 percent for State only funded projects.

Funding The Local Share: The airport sponsor has several methods available for funding the capital required to meet the local share of airport development costs. The most common methods involve debt financing which amortize the debt over the useful life of the project, force accounts, in-kind service, third-party support and donations.

Bank Financing: Some airport sponsors use bank financing as a means of funding airport development. Generally, two conditions are required. First, the sponsor must show the ability to repay the loan plus interest and second, capital improvements must be less than the value of the present facility or some other collateral used to secure the loan. These are standard conditions which are applied to almost all bank loan transactions.

General Obligation Bonds: General Obligation bonds (GO) are a common form of municipal bonds whose payment is secured by the full faith credit and taxing authority of the issuing agency. GO bonds are instruments of credit and because of the community guarantee, reduce the available debt level of the sponsoring community. This type of bond uses tax revenues to retire debt and the key element becomes the approval of the voters to a tax levy to support airport development. If approved, GO bonds are typically issued at a lower interest rate than other types of bonds.

Self-liquidating General Obligation Bonds: As with General Obligation bonds, Self-liquidating General Obligation Bonds are secured by the issuing government agency. They are retired, however, by cash flow from the operation of the facility. Providing the state court determines that the project is self-sustaining, the debt may be legally excluded from the community's debt limit. Since the credit of the local government bears the ultimate risk of default, the bond issue is still considered, for the purpose of financial analysis, as part of the debt burden of the community. Therefore, this method of financing may mean a higher rate of interest on all bonds sold by the community. The amount of increase in the interest rate depends, in part, upon the degree of risk of the bond. Exposure risk occurs when there is insufficient net airport operating income to cover the level of service plus coverage requirements, thus forcing the community to absorb the residual.

Revenue Bonds: Revenue Bonds are payable solely from the revenues of a particular project or from operating income of the borrowing agency, such as an airport commission which lacks taxing power. Generally, they fall outside of constitutional and statutory limitations and in many cases do not require voter approval. Because of the limitations on the other public bonds, airport sponsors are increasingly turning to revenue bonds whenever possible. However, revenue bonds normally carry a higher rate of interest because they lack the guarantees of municipal bonds. It should also be noted that the general public would usually be wary of the risk involved with a revenue bond issue for a general aviation airport. Therefore, the sale of such bonds could be more difficult than other types of bonds.

Combined Revenue/General Obligation Bonds: These bonds, also known as "Double-Barrel Bonds", are secured by a pledge of back-up tax revenues to cover principal and interest payments in cases where airport revenues are insufficient. The combined Revenue/General Obligation Bond interest rates are usually lower than Revenue Bonds, due to their back-up tax provisions.

Force Accounts, In-kind Service, Donations: Depending on the capabilities of the Sponsor, the use of force accounts, in-kind service, or donations may be approved by the FAA and the State for the Sponsor to provide their share of the eligible project costs. An example of force accounts would be the use of

heavy machinery and operators for earthmoving and site preparation of runways or taxiways; the installation of fencing; or the construction of improvements to access roads. In-kind service may include surveying, engineering or other services. Donations may include land or materials such as gravel or water needed for the project. The values of these items must be verified and approved by the FAA prior to initiation of the project.

Third-Party Support: Several types of funding fall into this category. For example, individuals or interested organizations may contribute portions of the required development funds (Pilot Associations, Economic Development Associations, Chambers of Commerce, etc.). Although not a common means of airport financing, the role of private financial contributions not only increases the financial support of the project, but also stimulates moral support to airport development from local communities. Because of the potential for hangar development, private developers may be persuaded to invest in hangar development. A suggestion would be that the Town authorize long-term leases to individuals interested in constructing a hangar on airport property. This arrangement generates revenue from the airport, stimulates airport activity, and minimizes the sponsor's capital investment requirements. Another method of third-party support involves permitting the fixed base operator (FBO) to construct and monitor facilities on property leased from the airport. Terms of the lease generally include a fixed amount plus a percentage of revenues and a fuel flowage fee. The advantage to this arrangement is that it lowers the sponsor's development costs, a large portion of which is building construction and maintenance.

FINANCIAL PLAN

The ultimate goal of any airport should be the capability to support is own operation and development through airport generated revenues. Unfortunately, few airports similar in size to the Taylor Municipal Airport are able to do this. For example, it is difficult to break even when the fees received from hangar rentals and fuel sales will not adequately amortize the cost of construction projects. Yet the effort to become self-sufficient will generate a more positive perception of the airport by the community.

However, while most airports the size of Taylor Municipal Airport are not able to become self-sustaining, the intrinsic value of such a well-maintained airport for the community or region exceeds the day-to-day operational and maintenance costs of the airport. In other words, the dollars spent in the community or the region by individuals or businesses that use the airport exceeds the expenses that are incurred as a result of operation of the airport. Furthermore, the Taylor Municipal Airport provides access for valuable services to the Towns of Taylor and Snowflake.

PROJECTED REVENUES AND EXPENDITURES

Expenditures: Airport operating expenditures typically include insurance, utilities, maintenance and management costs. Insurance costs include liability insurance for the airport and property insurance for any real property on the airport owned by the Town of Taylor. Utility expenses primarily consist of power costs to operate airfield lighting and visual aids and water for public use areas. Pavement maintenance consists of crack sealing on an annual basis and seal coating and remarking the pavements every five years. Facility maintenance consists of mowing, snow removal and repair and replacement of parts and equipment such as light bulbs, light fixtures, fences, etc. The Automated Weather Observation System (AWOS) is also owned by the Town of Taylor and requires periodic calibration and maintenance. Management costs may include an airport manager or contract services provided by a third party or an FBO. Currently at the Taylor Municipal Airport, an airport manager administers the day-to-day management services for the airport.

Revenues: Airport revenues generally consist of land leases, user fees and property taxes generated from on-airport improvements. A summary of the level of rates and charges used in revenue projections is listed in Table 7-2. The ranges for these rates are considered accurate for general aviation airports. The Wyoming Department of Transportation (WYDOT) Aeronautics Division recently completed a rates and charges survey of general aviation airports in Wyoming, Arizona, Colorado, Idaho, Montana, Nebraska, South Dakota and Utah. These rates are also included in Table 7-2.

TABLE 7-2 RATES AND CHARGES FOR REVENUE PROJECTIONS

	Typical Rates for Small Airports	WYDOT Study Rates	Taylor Rates
Land Leases	$0.08-$0.15/sq. ft./year	$0.11/sq. ft./year	$200/hangar/year
Hangar Leases	$1.00-$5.00/sq. ft./year		-
Tie-Down Fees	$10.00-$30.00/month/aircraft	$21.38/month/aircraft	$20/month/aircraft
Transient Overnight Tie-Down Fees	$0.00-$5.00/night/aircraft	$3.58/night/aircraft	-
Through-the-Fence Fees	$150.00-$450.00/aircraft/year	-	-
Fuel Flowage Fees	$0.02-$0.12/gallon	-	-
Commercial Activity Fees	$0.00-$500/activity/year	-	$1,200/activity/year

Land Leases: Property on the airport that is not devoted to airfield use, vehicle parking, or contained within areas required to be cleared of structures may be leased to individual airport users or aviation related businesses. Typically, the individual is provided a long-term lease on which to construct a hangar, business or others facility. At the termination of the lease, the lessee has the option to renew the lease, sell or lease the buildings or to remove the buildings.

Hangar Leases: Hangars on the airport owned by the airport sponsor can be leased to private aircraft operators or businesses. Typically, as with land leases, the individual or business is provided a long-term lease of the hangar. At the termination of the lease, the lessee has the option to renew the lease or cease use of the hangar.

Tie-Down Fees: A fee is typically established for the use of fixed ramp tiedowns on paved apron areas. The fees are usually established on a monthly or annual basis for based aircraft and on an overnight basis for transient aircraft.

Through-the-Fence Fees: A fee is typically charged to adjacent landowners who are provided access directly from their private parcel to the public use airport facilities. This fee ensures that the level of rates and charges assessed to on-airport users is equitable to off-airport users and that there is not an unfair economic advantage to operating “through-the-fence”. Additionally, through-the-fence operators are required to maintain a secure airport perimeter with fencing and/or gates and to construct paved access taxiways to the airport operating areas. However, the FAA generally discourages through-the-fence operations. Therefore, it is anticipated that all aircraft operations will be conducted from on airport and therefore will not generate through-the-fence fees. In lieu of through-the-fence fees, these aircraft would generate tie-down fees or land lease revenue from hangars.

Fuel Flowage Fee: This fee is typically imposed on all aircraft fuels delivered to the airport and would include all fuels used by aircraft including AvGas, Jet-A, and MoGas. The fee would apply to fixed base operators, self fueling (if authorized) and through-the-fence operators who conduct self-fueling. This is currently not applicable to the Taylor Municipal Airport as the Town of Taylor currently owns and operates the fuel concession.

Commercial Activity Fee: This fee is imposed on commercial activities operating “for profit” at the airport. Typical commercial activities may include fixed base operators, maintenance services, air taxi or charter services, automobile rental, restaurants, retail or other good and services which may be provided at the airport. The fee is in addition to land lease rates which may be charges for their facilities.

TABLE 7-3 ANNUAL AIRPORT REVENUES AND EXPENSES

	2004-2005	Phase I[1]	Phase II	Phase III
Operating Revenues				
Fuel Sales[2]	$20,000	$33,000	$38,500	$46,800
Tie Down Fees	$1,500	$1,500	$1,800	$2,500
Commercial Activity Fee	$1,200	$1,200	$1,200	$1,200
Land Leases	$0	$2,000	$2,200	$3,000
Hangar Lease	$0	$10,000	$10,000	$30,800
Total Operating Revenues	**$22,700**	**$47,700**	**$53,700**	**$84,300**
Operating Expenses				
Travel/Training	$700	$700	$700	$700
Dues, Subscriptions and Memberships	$400	$400	$400	$400
Payroll	$35,000	$35,000	$35,000	$35,000
Maintenance Materials	$3,500	$3,500	$3,500	$3,500
Gasoline and Oil	$16,000	$31,000	$35,000	$43,000
Telephone	$900	$900	$900	$900
Utilities	$13,000	$13,500	$13,500	$13,500
General Insurance	$7,000	$7,500	$7,500	$7,500
Miscellaneous	$800	$800	$800	$800
Total Operating Expenses	**$77,300**	**$93,300**	**$97,300**	**$105,300**
Non-Operating Expenses				
Capital Improvements[3]	$5,200	$11,040	$1,985	$3,050
Annual Surplus (Subsidy)	**($59,800)**	**($56,640)**	**($45,585)**	**($22,350)**

[1] Projections based on last year of each time period (in 2005 dollars)

[2] Projections based on 3 gallons of fuel required per forecasted aircraft operation

[3] Average annual capital expense for each phase

RECOMMENDATIONS

A review of airport revenues indicates that the level of rates and charges at the Taylor Municipal Airport are below similar sized airports. The Town does not currently charge land leases or a lease rate for the Town owned corporate hangar at the airport. The Town also charges only $0.10 per gallon of fuel over what it pays for the fuel. Increasing rates could increase airport revenue, but could also result in decreasing demand for aviation services. The most effective means of increasing revenue at the Taylor Municipal Airport is to accommodate existing unmet demand and to continue to attract new and additional users. Several potential strategies for increasing revenues are listed below:

- Increase rates for ground leases and increase the number of ground leases for aircraft storage hangars;
- Apply for federal funding to construct T-hangars and box hangars to meet existing and future demand; and
- Focus on attracting business/corporate aviation tenants.

Increasing aircraft storage hangars at the airport would result in not only increased direct revenues generated through property leases, but would also produce indirect revenue through increased use of airport services and facilities, such as increased fuel purchases. Several aircraft owners have indicated an interest in leasing land from the airport to construct hangars. Locations for additional nested T-hangars and individual box hangars have been identified on the Terminal Area Drawing (TAD) included in Chapter 5. Business/corporate tenants are typically flight departments for local businesses and provide employment in the local community. They generally operate multi-engine turboprop or business jet

aircraft. Their land lease parcels are usually large, the aircraft are typically operated two to three times per week and fuel purchases are typically larger than other general aviation user (several hundred gallons per fueling).

Whether the improved Taylor Municipal Airport operates at an annual surplus or subsidy depends greatly on the amount of activity and facilities that are constructed at the airport. Existing demand is currently constrained by the lack of aircraft storage facilities. The most efficient way for the Town to accommodate this demand is to construct taxilanes and provide land leases for hangars. If demand for basing aircraft at the Taylor Municipal Airport continues in the long-term, the Town should consider constructing multi-unit T-hangars and/or box hangars. If federal funding is approved to construct these hangars and vacancy rates are low, the Town could potentially increase revenues to the point where they meet or exceed expenditures.

COMMUNITY SUPPORT

While it would certainly be advantageous for an airport to support itself, the indirect and intangible benefits of the airport to the community's economy and growth must be considered. People are directly or indirectly employed on the airport by the Town, FBOs and individual businesses. As airport activity increases, it is probable that employment on the airport will also grow throughout the planning period. The local construction industry will also benefit directly from implementation of the development programs. Other community benefits involve business growth and development that is enhanced by the availability of air transportation including commercial service, corporate and private aviation. Clients and suppliers of area businesses will also benefit from the future improvement to the airfield.

The use of corporate and business aircraft is an increasing trend across the United States. The movement of American industry from large metropolitan areas to smaller communities that offer lower taxes and labor costs and a better working environment has influenced this trend. Time is money in the business environment and corporate aircraft are answering the need for quick and convenient access to and from these new locations for both executives and management personnel. The ability of a community to provide convenient access to corporate aircraft will be reflected not only in benefits to existing businesses and industries but will be a strong factor in attracting new industry. The events of September 11, 2001, have also resulted in increased corporate and business aviation activity as companies are looking to avoid delays inconveniences associated with commercial airline travel.

These factors place the Taylor Municipal Airport in a prime position to capitalize on the trends in the general aviation industry and to maximize the benefits the airport provides to the community.

CONTINUOUS PLANNING PROCESS

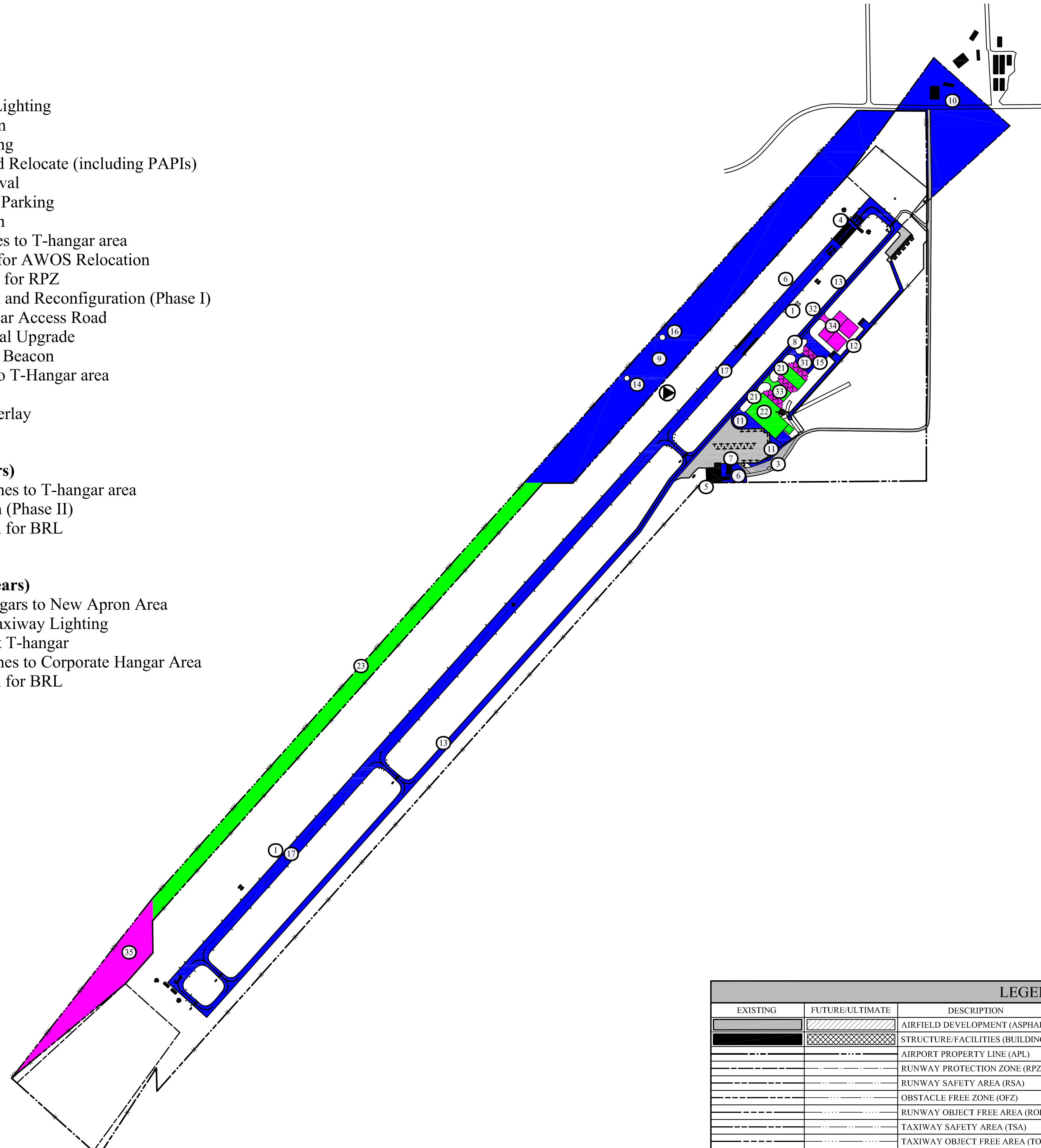
Airport planning is a continuous process that does not end with the completion of a major project. The fundamental issues upon which this master plan are based are expected to remain valid for several years; however, several variables, such as based aircraft, annual aircraft operations, and socioeconomic conditions are likely to change over time. The continuous planning process necessitates that the Town of Taylor consistently monitor the progress of the airport in terms of growth in based aircraft and annual operations, as this growth is critical to the exact timing and need for new airport facilities. The information obtained from this monitoring process will provide the data necessary to determine if the development schedule should be accelerated, decelerated or maintained as scheduled.

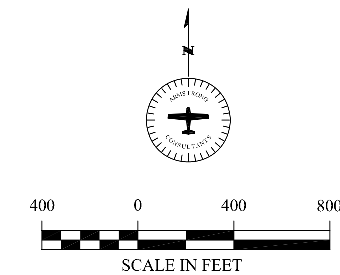
Periodic updates of the Airport Layout Plan, Capital Improvement Plan, and Airport Master Plan are recommended to document physical changes to the airport, review changes in aviation activity and to update improvement plans for the airport. The primary goal of this Airport Master Planning effort is to develop a safe and efficient airport that will meet the demands of its aviation users and stimulate economic development for the Taylor/Snowflake area. The continuous airport planning process is a valuable tool in achieving that goal.

Phase I (1-5 Years)
1 Replace Runway Lighting
2 Prepare SPCC Plan
3 Apron Area Fencing
4 Runway Threshold Relocate (including PAPIs)
5 Obstruction Removal
6 Construct Vehicle Parking
7 Install Fuel System
8 Construct Taxilanes to T-hangar area
9 Land Acquisition for AWOS Relocation
10 Land Acquisition for RPZ
11 Apron Expansion and Reconfiguration (Phase I)
12 Construct T-hangar Access Road
13 Taxiway Structural Upgrade
14 Replace Rotating Beacon
15 Extend Utilities to T-Hangar area
16 Relocate AWOS
17 Runway 3/21 Overlay

Phase II (6-10 Years)
21 Construct Taxilanes to T-hangar area
22 Apron Expansion (Phase II)
23 Land Acquisition for BRL

Phase III (11-20 Years)
31 Relocate 5 T-hangars to New Apron Area
32 Install Parallel Taxiway Lighting
33 Construct 10-unit T-hangar
34 Construct Taxilanes to Corporate Hangar Area
35 Land Acquisition for BRL





LEGEND

EXISTING	FUTURE/ULTIMATE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)			ROAD
		STRUCTURE/FACILITIES (BUILDING)			THRESHOLD LIGHTS
		AIRPORT PROPERTY LINE (APL)			REIL
		RUNWAY PROTECTION ZONE (RPZ)			VASI/PAPI
		RUNWAY SAFETY AREA (RSA)			WIND CONE
		OBSTACLE FREE ZONE (OFZ)			AIRPORT REFERENCE POINT (ARP)
		RUNWAY OBJECT FREE AREA (ROFA)			AIRPORT BEACON
		TAXIWAY SAFETY AREA (TSA)			WIND CONE & SEGMENTED CIRCLE
		TAXIWAY OBJECT FREE AREA (TOFA)			AIRCRAFT TIEDOWN
		BUILDING RESTRICTION LINE (BRL)			SECTION CORNER
		FENCING ON AIRPORT PROPERTY LINE			AWOS
4125		CONTOURS			

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769
1501 Stampede Ave. Suite 3030
Cody, WY 82414
ph: 307.527.4042 fax: 307.527.4043
email: aci@armstrongconsultants.com

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

A.I.P. No. 03-04-0065-12
AIRPORT LAYOUT PLANS

No.	Revision	Date	By

Project No: 045690
Date: 7.20.05
File Name: 5690532

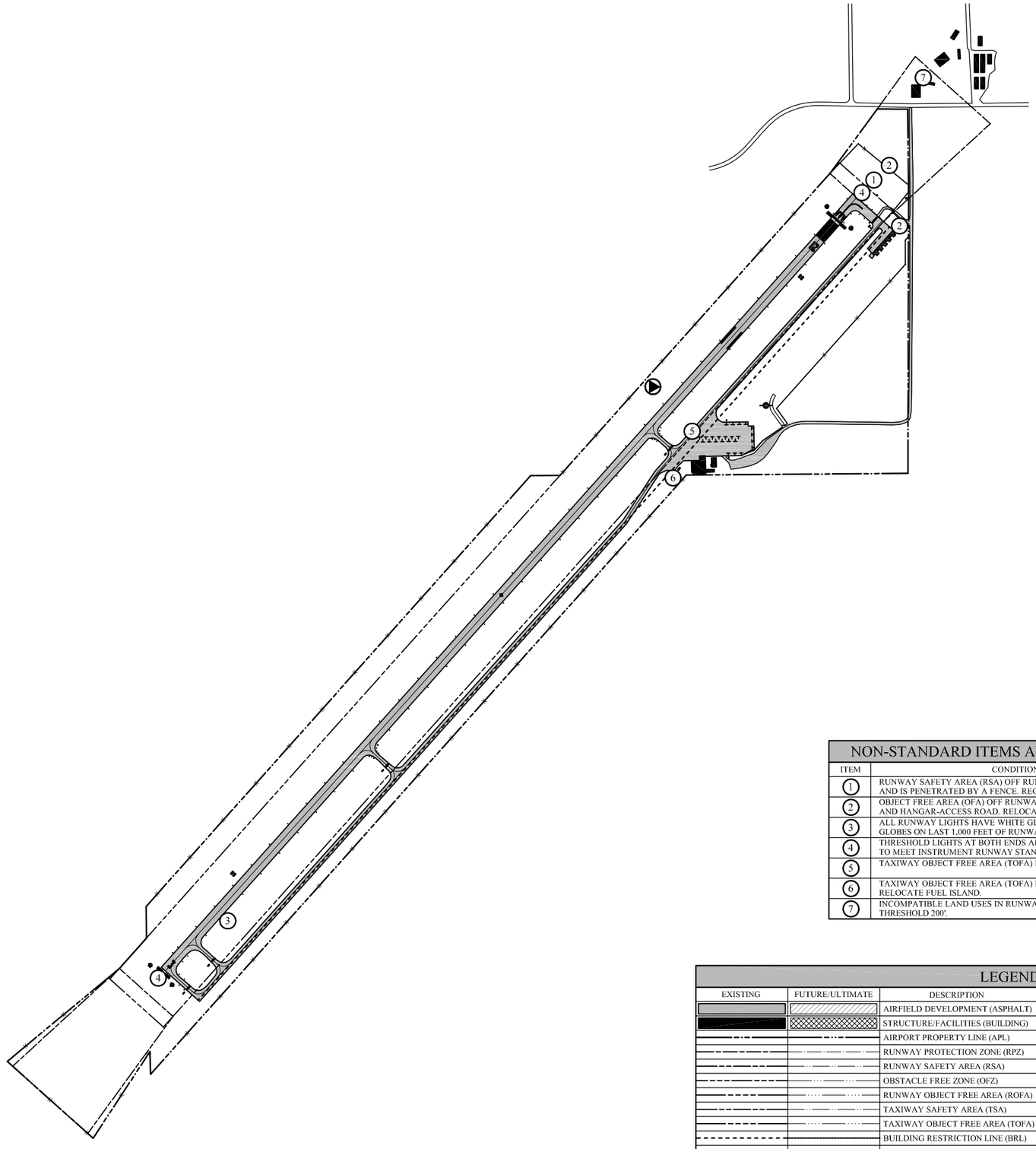
Drawn: RF
Checked: REH
Approved: DAC

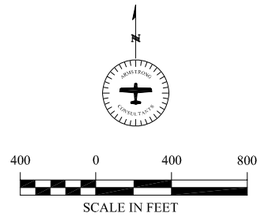
CAPITAL IMPROVEMENT PLAN

Sheet: 1 of: 1

Appendix A
Design Standards Inventory

Taylor Municipal Airport
Airport Master Plan





NON-STANDARD ITEMS AND CORRECTIVE RECOMENDATIONS

ITEM	CONDITION AND CORECTIVE RECOMENDATIONS
1	RUNWAY SAFETY AREA (RSA) OFF RUNWAY 21 END DOES NOT MEET GRADIENT STANDARDS AND IS PENETRATED BY A FENCE. REGRADE RSA AND RELOCATE FENCE.
2	OBJECT FREE AREA (OFA) OFF RUNWAY 21 END IS PENETRATED BY FENCE. AIRPORT ROAD AND HANGAR-ACCESS ROAD. RELOCATE FENCE, HANGAR ACCESS ROAD AND AIRPORT ROAD.
3	ALL RUNWAY LIGHTS HAVE WHITE GLOBES. INSTALL BI-DIRECTIONAL AND BI-COLOR (WHITE-AMBER) GLOBES ON LAST 1,000 FEET OF RUNWAY 21 TO MEET INSTRUMENT RUNWAY STANDARDS.
4	THRESHOLD LIGHTS AT BOTH ENDS ARE 3-LIGHT SYSTEMS. INSTALL 4-LIGHT SYSTEMS AT BOTH ENDS TO MEET INSTRUMENT RUNWAY STANDARDS.
5	TAXIWAY OBJECT FREE AREA (TOFA) IS PENETRATED BY TIEDOWN. RECONFIGURE APRON LAYOUT.
6	TAXIWAY OBJECT FREE AREA (TOFA) IS PENETRATED BY AIRCRAFT WHILE REFUELING. RELOCATE FUEL ISLAND.
7	INCOMPATIBLE LAND USES IN RUNWAY PROTECTION ZONE (RPZ). RELOCATE RUNWAY 21 THRESHOLD 200'.

LEGEND

EXISTING	FUTURE/ULTIMATE	DESCRIPTION	EXISTING	FUTURE	
		AIRFIELD DEVELOPMENT (ASPHALT)			ROAD
		STRUCTURE/FACILITIES (BUILDING)			THRESHOLD LIGHTS
		AIRPORT PROPERTY LINE (APL)			REIL
		RUNWAY PROTECTION ZONE (RPZ)			VASI/PAPI
		RUNWAY SAFETY AREA (RSA)			WIND CONE
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		TAXIWAY OBJECT FREE AREA (TOFA)			AIRCRAFT TIEDOWN
		BUILDING RESTRICTION LINE (BRL)			SECTION CORNER
		FENCING ON AIRPORT PROPERTY LINE			AWOS
4125		CONTOURS			

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Road Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769
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ph: 307.527.4042 fax: 307.527.4043
email: aci@armstrongconsultants.com

TAYLOR MUNICIPAL AIRPORT
TAYLOR, ARIZONA

AIRPORT LAYOUT PLANS

No.	Revision	Date	By

Project No: 045690
Date: 7.20.05
File Name: 5690531

Drawn: RF
Checked: REH
Approved: DAC

DESIGN STANDARDS INVENTORY

Sheet: 1 of: 1

Appendix B
Taylor Airport Overlay Zoning Ordinance

Taylor Municipal Airport
Airport Master Plan

ORDINANCE NUMBER _95___

ORDINANCE OF THE TOWN OF TAYLOR, ARIZONA AMENDING THE TOWN CODE BY ADDING NEW PROVISIONS TO CREATE AN AO (AIRPORT OVERLAY) ZONING DISTRICT IN THE TOWN ZONING ORDINANCE.

An ordinance of the Town Council of the Town of Taylor, Arizona, amending the Town Zoning Ordinance as it relates to the creation of a new Zoning District classification

BE IT ORDAINED by the Town Council of the Town of Taylor, Arizona that the Town code be amended adding a new subsection 2-9 to Chapter 2 of the Zoning Ordinance. Said addition shall read as follows:

An Ordinance regulating and restricting the height of structures and objects of natural growth, and otherwise regulating the use of property, in the vicinity of the Taylor Airport by creating the appropriate zones and establishing the boundaries thereof; providing for changes in the restrictions and boundaries of such zones; defining certain terms used herein, referring to the Taylor Airport Height Restriction and Compatible Land Use Overlay Drawings which are incorporated in and made a part of this ordinance; providing for enforcement; establishing a board of adjustment; and imposing penalties.

SECTION I

SHORT TITLE

This Ordinance shall be known and may be cited as the Taylor Municipal Airport Overlay Zoning Ordinance.

SECTION II

DEFINITIONS

As used in this Ordinance, unless the context otherwise requires:

1. AIRPORT - Taylor Municipal Airport.

2. AIRPORT ELEVATION - The highest point of an airport's usable landing area measured in feet from mean sea level.

3. AIRPORT SPONSOR - A public agency or tax-supported organization that is authorized to own and operate the airport, to obtain property interests, to obtain funds, and to be legally, financially, and otherwise able to meet all applicable requirements of current laws and regulations.

4. APPROACH SURFACE - A surface longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface and at the same slope as the approach zone height limitation slope set forth in Section IV of this Ordinance. In plan the perimeter of the approach surface coincides with the perimeter of the approach zone.

5. APPROACH, TRANSITIONAL, HORIZONTAL, AND CONICAL ZONES - These zones are set forth in Section III of this Ordinance.

6. BOARD OF ADJUSTMENT – The Town of Taylor, Town Council shall serve as the Board of Adjustment.

7. 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.

8. CONTROLLING JURISDICTION - The public agency or organization that is authorized to control land uses and implement zoning laws and regulations.

9. HAZARD TO AIR NAVIGATION - An obstruction determined to have a substantial adverse effect on the safe and efficient utilization of the navigable airspace.

10. HEIGHT - For the purpose of determining the height limits in all zones set forth in this Ordinance and shown on the zoning map, the datum shall be mean sea level elevation unless otherwise specified.

11. HELIPORT PRIMARY SURFACE - The primary surface coincides in size and shape with the designated takeoff and landing area of a heliport. This surface is a horizontal plane at the elevation of the established heliport elevation.

12. HORIZONTAL SURFACE - A horizontal plane 150 feet above the established airport elevation, the perimeter of which in plan coincides with the perimeter of the horizontal zone.

13. LARGER THAN UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of greater than 12,500 pounds maximum gross weight and jet powered aircraft.

14. NAVD 88 - North American Vertical Datum 1988. All elevations in this ordinance are referenced to the 1988 North American Vertical Datum.

15. NONCONFORMING USE - Any pre-existing structure, object of natural growth, or use of and which is inconsistent with the provisions of this Ordinance or an amendment thereto.

16. NONPRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in nonprecision instrument approach procedure has been approved or planned. It also means a runway for which a nonprecision approach system is planned and is so indicated on an approved Airport Layout Plan or any other planning document.

17. OBSTRUCTION - Any structure, growth, or other object, including a mobile object, which exceeds a limiting height set forth in Section IV of this Ordinance.

18. PERSON - An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity; includes a trustee, a receiver, an assignee, or a similar representative of any of them.

19. PRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS), a Precision Approach Radar (PAR) or a Global Positioning System (GPS). It also means a runway for which a precision approach system is planned and is so indicated on an approved airport layout plan or any other planning document.

20. PRIMARY SURFACE - A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; for military runways or when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The width of the primary surface is set forth in Section III of this Ordinance. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

21. RUNWAY - A defined area on an airport prepared for landing and takeoff of aircraft along its length.

22. STRUCTURE - An object, including mobile object, constructed or installed by man, including but without limitation, buildings, towers, cranes, smokestacks, earth formation, and overhead transmission lines.

23. TRANSITIONAL SURFACES - These surfaces extend outward at 90 degree angles to the runway centerline and the runway centerline extended at a slope of seven (7) feet horizontally for each foot vertically from the sides of the primary and approach surfaces to where they intersect the horizontal and conical surfaces. Transitional surfaces for those portions of the precision approach surfaces, which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at 90 degree angles to the extended runway centerline.

24. TREE - Any object of natural growth.

25. UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.

26. VISUAL RUNWAY - A runway intended solely for the operation of aircraft using visual approach procedures.

SECTION III

AIRPORT HEIGHT RESTRICTION ZONES

In order to carry out the provisions of this Ordinance, there are hereby created and established certain zones which include all of the land lying beneath the Approach Surfaces, Transitional Surfaces, Horizontal Surfaces, and Conical Surfaces as they apply to the Taylor Airport. Such zones are shown on the Taylor Airport Height Restriction Overlay Zoning Map which is made part of and attached to this Ordinance. Said map was prepared by Armstrong Consultants and is dated February 1, 2005.

An area located in more than one (1) of the following zones is considered to be only in the zone with the more restrictive height limitation. The various zones are hereby established and defined as follows:

1. Precision Instrument Runway Approach Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 1,000 feet wide. The approach surface expands outward uniformly to a width of 16,000 feet at a horizontal distance of 50,000 feet from the primary surface. The centerline of the approach zone is the continuation of the centerline of the runway.

2. Nonprecision Instrument Runway Approach Zone (Larger Than Utility Runway) - The inner edge of this approach zone coincides with the width of the primary surface and is 500 feet wide. The approach zone expands outward uniformly to a width of 3,500 feet at a horizontal distance 10,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

3. Nonprecision Instrument Runway Approach Zone (Utility Runway) - The inner edge of this approach zone coincides with the width of the primary surface and is 500 feet wide. The approach zone expands outward uniformly to a width of 2,000 feet at a horizontal distance 5,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

4. Visual Runway Approach Zone (Larger Than Utility Aircraft) - The inner edge of this approach zone coincides with the width of the primary surface. The approach surface expands uniformly to a width of 1,500 feet at a horizontal distance of 5,000 feet from the primary surface. The centerline of the approach zone is a continuation of the centerline of the runway.

5. Visual Runway Approach Zone (Utility Aircraft) - The inner edge of this approach zone coincides with the width of the primary surface and is 250 feet wide. The approach surface expands uniformly to a width of 1,250 feet at a horizontal distance of 5,000 feet from the primary surface. The centerline of the approach zone is a continuation of the centerline of the runway.

6. Transitional Zones - The transitional zones are the areas beneath the transitional surfaces

7. Horizontal Zones - The horizontal zone is established by swinging arcs of 5,000 or 10,000 feet radii from the center of each end of the primary surface of the primary runway and connecting the adjacent arcs by drawing lines tangent to those arcs. The horizontal zone does not include the approach and transitional zones.

8. Conical Zone - The conical zone is established as the area that commences at the periphery of the horizontal zone and extends outward therefrom a horizontal distance of 4,000 feet.

SECTION IV

AIRPORT ZONE HEIGHT LIMITATIONS

Except as otherwise provided in this Ordinance, no structure shall be erected, altered, or maintained, and no tree shall be allowed to grow in any zone created by this Ordinance to a height in excess of the applicable height limit herein established for such zone. Such applicable height limitations are hereby established for each of the zones in question as follows:

1. Precision Instrument Runway Approach Zone - Slopes fifty (50) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet and continues on for a distance of 40,000 feet at a slope of forty (40) feet outward for each foot upward along the extended runway centerline.

2. Nonprecision Instrument Runway Approach Zone (Larger Than Utility Runway) - Slopes thirty-four (34) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline.

3. Nonprecision Instrument Runway Approach Zone (Utility Runway) - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

4. Visual Runway Approach Zone - Slopes twenty (20) feet outward for each foot upward beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

5. Transitional Zones - Slope seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the primary surface and the approach surface, and extending to a height of 150 feet above the airport elevation which is established at 5820 feet above mean sea level.. In addition to the foregoing, there are established height limits sloping seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the approach surface, and extending to where they intersect the conical surface. Where the precision instrument runway approach zone projects beyond the conical zone, there are established height limits sloping seven (7) feet outward for each foot upward beginning at the sides of and at the same elevation as the approach surface, and extending a horizontal distance of 5,000 feet measured at 90-degree angles to the extended runway centerline.

6. Horizontal Zone - Established at 150 feet above the airport elevation or at a height of 5970 above mean sea level.

7. Conical Zone - Slopes twenty (20) feet outward for each foot upward beginning at the periphery of the horizontal zone and at 150 feet above the airport elevation and extending to a height of 350 feet above the airport elevation.

SECTION V
COMPATIBLE LAND USE REGULATIONS

1. Airport Compatible Land Use Overlay Zoning Districts Established - For the purpose of regulating the development of noise sensitive land uses to promote compatibility between the Airport and the surrounding land uses, to protect the Airport from incompatible development and to promote the health, safety, and general welfare of property users, the Controlled Area of Taylor Airport is divided into Airport Compatible Land Use Overlay Zoning districts. The Airport Compatible Land Use Overlay Zoning districts established herein shall be known as:

Abbreviated Designation	Zoning District Name
AIZ	Airport Influence Zone
TPZ	Traffic Pattern Zone
AZ	Approach Zone

2. Airport Compatible Land Use Overlay Zoning Map -

(A) The boundaries of the Airport Compatible Land Use Overlay Zoning Districts set out herein are delineated upon the Off Airport Land Use Drawing, said drawing being adopted by reference and made a part of this Chapter as fully as if the same were set forth herein in detail.

3. Airport Compatible Land Use Overlay Zoning District Boundaries.

(A) The Airport Compatible Land Use Overlay Zoning District boundary lines shown on the official Airport Compatible Land Use Overlay Zoning District Map shall be located and delineated along contour lines established for the airport. Where uncertainty exists as to the boundaries of the Airport Compatible Land Use Overlay Zoning Districts as shown on the official Map, the following rules shall apply:

(1) Boundaries shall be scaled from the nearest physical feature shown on the map.

(2) Boundaries may be scaled from the nearest platted lot line as shown on the map.

(3) Distances not specifically indicated on the original Airport Compatible Land Use Overlay Zoning District Map shall be determined by a scaled measurement on the map.

(B) Where physical features on the ground differ from the information shown on the Official Airport Compatible Land Use Overlay Zoning District Map or when there arises a question as to how or where a parcel of property is zoned and such questions cannot be resolved by the application of Section V-3.(A), the property shall be considered to be classified as the most restrictive Airport Compatible Land Use Overlay Zoning District.

(C) Where a parcel of Land lies within more than one (1) Airport Compatible Land Use Overlay Zoning District, the zone within which each portion of the property is located shall apply individually to each portion of the development.

4. Use of Land and Buildings.

(A) Within the Airport Compatible Land Use Overlay Zoning Districts as defined herein, no land shall hereafter be used and no structure or other object shall hereafter be erected, altered, converted, or modified other than for those compatible land uses permitted by underlying comprehensive zoning districts, as specified in the local Land Use Code. Additional land uses are prohibited in the Airport Compatible Land Use Overlay Zoning Districts, regardless of underlying zoning, as set forth in the Land Use Compatibility Table included as Attachment A of this document.

(B) Where any use of prohibited land and buildings set forth in Section V-4.(A) conflicts with any other allowed land use or structure set forth in Town of Taylor Land Use Code, this Chapter shall apply.

(C) Section V-4 does not apply to property within the official boundaries of the Airport.

(D) Where specified on the Airport Compatible Land Use Table, the property owner shall dedicate, in advance of receiving a building permit, an aviation easement to the controlling jurisdiction. The purpose of this easement shall be to establish a maximum height restriction on the use of property and to hold the public harmless for any damages caused by noise, vibration, fumes, dust, fuel, fuel particles, or other effects that may be caused by the

operation of aircraft landing at, taking off from, or operating on, or at, public airport facilities.

5. Additional Land Use Regulations.

(A) Within the controlling jurisdiction the more restrictive of local Land Use Code or Section V-4.(A), shall apply to the development of all property covered by the Airport Compatible Land Use Overlay Zoning District Map.

(B) On property within the Off Airport Land Use Drawing boundary, but outside the jurisdictional limits of the airport sponsor, Section V-4A shall apply to formulate land use recommendations or responses to land use comment requests from other jurisdictions.

(C) When a provision of this Section conflicts with any airport, Height Hazard Restrictions, the most restrictive provision shall apply.

(D) Notwithstanding any other provisions of this Chapter or other Chapter of the local Land Use Code, no use may be made of land, water, or Structures within any zone established by this Chapter in such a manner as to create electrical interference with navigational signals or radio communication between the Airport and aircraft, make it difficult for pilots to distinguish between Airport lights and others, or result in glare in the eyes of pilots using the Airport; impair visibility in the vicinity of the Airport; create bird strike Hazards, or otherwise in any way endanger or interfere with the landing, taking off, or flight operations of aircraft utilizing the Airport.

(E) When a subdivision plat is required for any property within an Airport Compatible Land Use Overlay Zoning District or within an area shown on the Airport Height Restriction Overlay Zoning Map for the controlling jurisdiction, the property owner shall dedicate an aviation hazard easement to the controlling jurisdiction over and across that property. This easement shall establish a height restriction on the use of the property and hold the public harmless from any damages caused by noise, vibration, fumes, dust, fuel, fuel particles, or other effects that may be caused by the operation of aircraft taking off, landing, or operating on or near the airport.

SECTION VI

NONCONFORMING USES

1. Regulations Not Retroactive - The regulations prescribed by this Ordinance shall not be construed to require the removal, lowering, or other change or alteration of any structure or tree not conforming to the regulations as of the effective date of this Ordinance, or otherwise interfere with the continuance of nonconforming use. Nothing contained herein shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which was begun prior to the effective date of this Ordinance, and is diligently prosecuted.

2. Marking and Lighting - Notwithstanding the preceding provision of this Section, the owner of any existing nonconforming structure or tree is hereby required to permit the installation, operation, and maintenance thereon of such markers and lights as shall be deemed necessary by the Town of Taylor Council to indicate to the operators of aircraft in the vicinity of the airport the presence of such airport obstruction. Such markers and lights shall be installed, operated, and maintained at the expense of the Town of Taylor.

SECTION VII

PERMITS

1. Future Uses - Except as specifically provided in a, hereunder, no material change shall be made in the use of land, no structure shall be erected or otherwise established, and no tree shall be planted in any zone hereby created unless a permit therefor shall have been applied for and granted. Each application for a permit shall indicate the purpose for which the permit is desired, with sufficient particularity to permit it to be determined whether the regulating use, structure, or tree would conform to the regulations herein prescribed. An FAA Form 7460-1, Notice of Proposed Construction or Alteration shall accompany each application. If such determination is in the affirmative, the permit shall be granted. No permit for a use inconsistent with the provisions of this Ordinance shall be granted unless a variance has been approved in accordance with Section VII, 4.

    a) In the area lying within the limits of the approach zones, transition zones, horizontal zone and conical zone, no FAA Form 7460-1 shall be required by this Ordinance for any tree or structure less than 200 feet above ground level which is also lower than an imaginary surface extending outward and upward at a slope of 100 feet horizontal for each 1 foot vertical beginning at the closest point of the closest runway.

    Nothing contained in any of the foregoing exceptions shall be construed as permitting or intending to permit any construction, or alteration of any structure, or growth of any tree in excess of any of the height limits established by this Ordinance.

2. Existing Uses - No permit shall be granted that would allow the establishment or creation of any obstruction or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation than it was on the effective date of this Ordinance or any amendments thereto or than it is when the application for a permit is made. Except as indicated, all applications for such a permit shall be granted.

3. Nonconforming Uses Abandoned or Destroyed - Whenever the Town of Taylor determines that a nonconforming tree or structure has been abandoned or more than 80 percent torn down, physically deteriorated, or decayed, no permit shall be granted that would allow such structure or tree to exceed the applicable height limit or otherwise deviate from the zoning regulations.

4. Variances - Any person desiring to erect or increase the height of any structure, or permit the growth of any tree, or use of property, not in accordance with the regulations prescribed in this Ordinance, may apply to the Board of Adjustment for a variance from such regulations. The

application for variance shall be accompanied by a determination from the Federal Aviation Administration as to the effect of a proposal on the operation of air navigation facilities and the safe, efficient use of navigable airspace. Such variances shall be allowed where it is duly found that a literal application or enforcement of the regulations will result in unnecessary hardship and relief granted, will not be contrary to the public interest, will not create a hazard to air navigation, will do substantial justice, and will be in accordance with the spirit of this Ordinance.

Additionally, no application for variance to the requirements of this Ordinance may be considered by the Board of Adjustment unless a copy of the application has been furnished to the Airport Manager or FBO for advice as to the aeronautical effects of the variance. If the Airport Manager or FBO does not respond to the application within fifteen (15) days after receipt, the Board of Adjustment may act on its own to grant or deny said application.

5. Obstruction Marking and Lighting - Any permit or variance granted may, if such action is deemed advisable to effectuate the purpose of this Ordinance and be reasonable in the circumstances, be so conditioned as to require the owner of the structure or tree in question to install, operate, and maintain, at the owner's expense such markings and lights as condition may require in accordance with FAA provisions.

SECTION VIII

ENFORCEMENT

It shall be the duty of the Zoning Administrator to administer and enforce the regulations prescribed herein. Applications for permits and variances shall be made to Town of Taylor upon a form published for that purpose. Applications required by this Ordinance to be submitted to Zoning Administrator shall be promptly considered and granted or denied. Application for action by the Board of Adjustment shall be forthwith transmitted by the Zoning Administrator.

SECTION IX

BOARD OF ADJUSTMENT

1. There is hereby created a Board of Adjustment to have and exercise the following powers: (1) to hear and decide appeals from any order, requirements, decision, or determination made by the Zoning Administrator in the enforcement of this Ordinance; (2) to hear and decide special exceptions to the terms of this Ordinance upon which such Board of Adjustment under such regulations may be required to pass; and (3) to hear and decide specific variances.

2. The Board of Adjustment shall consist of seven (7) members those members being the Town Council of the Town of Taylor as required by the Taylor Zoning Ordinance.

3. The Board of Adjustment shall adopt rules for its governance and in harmony with the provisions of this Ordinance and the requirements of the Town of Taylor Zoning Ordinance.

4. The Board of Adjustment shall make written findings of facts and conclusions of law giving the

facts upon which it acted and its legal conclusions from such facts in reversing, affirming, or modifying any order requirement, decision, or determination which comes before it under the provisions of this Ordinance.

5. The concurring vote of a majority of the members of the Board of Adjustment shall be sufficient to reverse any order, requirement, decision, or determination of the Zoning Administrator or decide in favor of the application on any matter upon which it is required to pass under this Ordinance, or to effect variation to this Ordinance.

SECTION X

APPEALS

1. Any person aggrieved, or any taxpayer affected, by any decision of the Zoning Administrator made in the administration of the Ordinance, may appeal to the Board of Adjustment.

2. All appeals hereunder must be taken within a reasonable time as provided by Section 6-3 of the Town of Taylor Zoning Ordinance.

3. An appeal shall stay all proceedings in furtherance of the action appealed from unless the Zoning Administrator certifies to the Board of Adjustment, after the notice of appeal has been filed with it, that by reason of the facts stated in the certificate a stay would in the opinion of the Zoning Administrator cause imminent peril to life or property. In such case, proceedings shall not be stayed except by the order of the Board of Adjustment on notice to the Zoning Admistrator and on due cause shown.

4. The Board of Adjustment shall fix a reasonable time for hearing appeals, give public notice and due notice to the parties in interest, and decide the same within a reasonable time. Upon the hearing, any party may appear in person or by agent or by attorney.

5. The Board of Adjustment may, in conformity with the provisions of this Ordinance, reverse or affirm, in whole or in part, or modify the order, requirement, decision, or determination appealed form and may make such order, requirement, decision, or determination as may be appropriate under the circumstances.

SECTION XI

JUDICIAL REVIEW

Any person aggrieved, or any taxpayer affected, by any decision of the Board of Adjustment, may appeal to the Superior Court of Navajo County as provided for in Section 7-10 of the Town of Taylor Zoning Ordinance.

SECTION XII

PENALTIES

Each violation of this Ordinance or of any regulations, order, or ruling promulgated hereunder shall constitute a misdemeanor and shall be punishable by a fine of not more than Fifty (50)dollars or

imprisonment for not more than ten (10) days or both; and each day a violation continues to exist shall constitute a separate offense.

SECTION XIII

CONFLICTING REGULATIONS

Where there exists a conflict between any of the regulations or limitations prescribed in this Ordinance and any other regulations applicable to the same area, whether the conflict be with respect to the height of structures or trees, and the use of land, or any other matter, the more stringent limitation or requirements shall govern and prevail.

SECTION XIV

SEVERABILITY

If any of the provisions of this Ordinance or the application thereof to any person or circumstances are held invalid, such invalidity shall not affect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end, the provisions of this Ordinance are declared to be severable.

SECTION XV

EFFECTIVE DATE

WHEREAS, the immediate operation of the provisions of this Ordinance is necessary for the preservation of the public health, public safety, and general welfare, this Ordinance shall be in full force and effect from and after its passage by the Town of Taylor and publication and posting as required by law.

PASSED AND ADOPTED by the Town Council of the Town of Taylor, Arizona, this _____ day of _____ 2004.

_____

Floyd Fuentes, Mayor

ATTEST:

_____

Kelly Jones, Town Clerk

ATTACHMENT A

LAND USE COMPATIBILITY TABLE

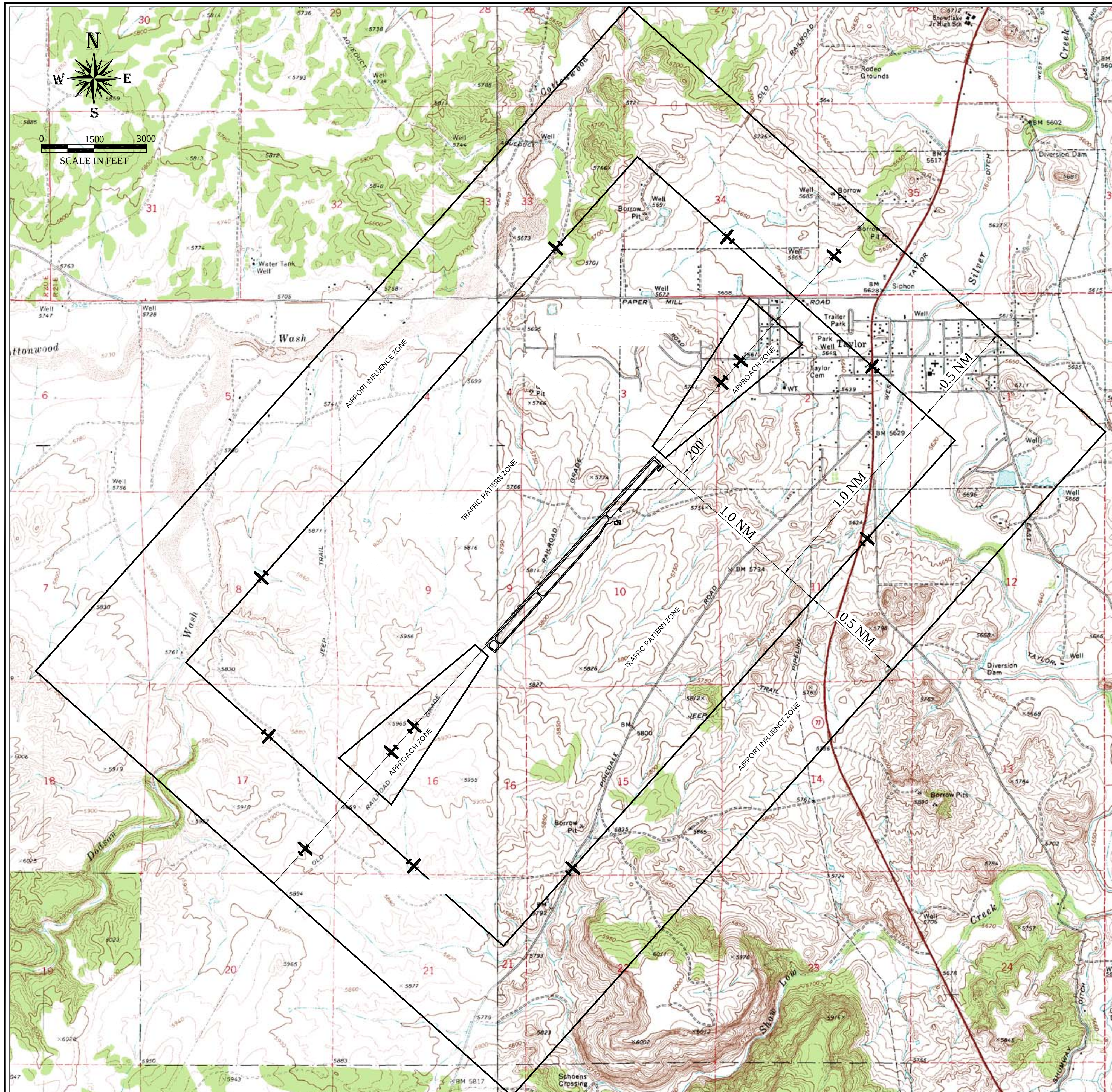
LAND USE CATEGORY	AIRPORT INFLUENCE ZONE (AIZ)	TRAFFIC PATTERN ZONE (TPZ)	APPROACH ZONE (AZ)
RESIDENTIAL			
Single-Family, Nursing Homes, Mobile Homes, Multi-Family, Apartments, condominiums	+	o(3)	-(1,3)
PUBLIC			
Schools, Libraries, Hospitals	+	o(3)	-(3)
Churches, Auditoriums, Concert Halls	+	o(3)	-(3)
Transportation, Parking, Cemeteries	++	++	++
COMMERCIAL & INDUSTRIAL			
Offices, Retail Trade	++	+	o(3)
Service Commercial, Wholesale Trade, Warehousing, Light Industrial	++	+	o(3)
General Manufacturing, Utilities, Extractive industry	++	++	o(3)
AGRICULTURAL & RECREATIONAL			
Cropland	++	++	++
Livestock Breeding	++	++	++
Parks, Playgrounds, Zoos, Golf Courses, Riding Stables, Water Recreation	++	++	++
Outdoor Spectator Sports,	++	+	-(3)
Amphitheaters	o	-(4)	--
Open Space	++	++	++

++ Clearly Acceptable + Normally Acceptable o Marginally Acceptable - Normally Unacceptable - Clearly Unacceptable

Note: Development projects which are wildlife attractant, including sewerage ponds and landfills, within 10,000 feet of the airport are unacceptable. (Ref.: FAA AC 150/5200-33)

Conditions:

(1) If allowed, avigation easements and disclosure must be required as a condition of development.
(2) Any structures associated with uses allowed in the RPZ must be located outside the RPZ.
(3) If no reasonable alternative exists, use should be located as far from extended centerline as possible.
(4) If no reasonable alternative exists, use should be located as far form extended runway centerline and traffic patterns as possible.
(5) Transportation facilities in the RPZ (i.e. roads, railroads, waterways) must be configured to comply with Part 77 requirements.



LAND USE COMPATIBILITY GUIDELINES

Land Use Category	Airport Influence Zone (AIZ)	Traffic Pattern Zone (TPZ)	Approach Zone (AZ)
Residential			
single-family, nursing homes, mobile homes, multi-family, apartments, condominiums	+	o (3)	- (1,3)
transient lodging, hotel, motel	+	o (3)	- (1,3)
Public			
schools, libraries, hospitals	+	o (3)	- (3)
churches, auditoriums, concert halls	+	o (3)	- (3)
transportation, parking, cemeteries	++	++	++
Commercial and Industrial			
offices, retail trade,	++	+	o (3)
service commercial, wholesale trade, warehousing, light industrial,	++	+	o (3)
general manufacturing, utilities, extractive industry	++	++	o (3)
Agricultural and Recreational			
cropland	++	++	++
livestock breeding	++	++	++
parks, playgrounds, zoos, golf courses, riding stables, water recreation	++	++	++
outdoor spectator sports	++	+	- (3)
amphitheaters	o	- (4)	- -
open space	++	++	++

NOTE: DEVELOPMENT PROJECTS WHICH ARE WILDLIFE ATTRACTANT, INCLUDING SEWERAGE PONDS AND LANDFILLS, WITHIN 10,000 FEET OF THE AIRPORT ARE UNACCEPTABLE. (REF.: FAA AC 150/5200-33)

(1) If allowed, avigation easements and disclosure must be required as a condition of development.
(2) Any structures associated with uses allowed in the RPZ must be located outside the RPZ.
(3) If no reasonable alternative exists, use should be located as far from extended centerline as possible.
(4) If no reasonable alternative exists, use should be located as far from extended runway centerline and traffic patterns as possible.
(5) Transportation facilities in the RPZ (i.e. roads, railroads, waterways) must be configured to comply with Part 77 requirements.

CRITERIA

Land Use Availability	Interpretation/Comments
++ Clearly Acceptable	The activities associated with the specified land use will experience little or no impact due to airport operations. Disclosure of airport proximity should be required as a condition of development.
+ Normally Acceptable	The specified land use is acceptable in this zone or area. Impact may be perceived by some residents. Disclosure of airport proximity should be required as a condition of development. Dedication of avigation easements may also be advisable.
o Marginally Acceptable	An impact will be perceived as a result of allowing the specified use in this zone or area. Disclosure of airport proximity and avigation easements should be required as a condition of development.
- Normally Unacceptable	Specified use should be allowed only if no reasonable alternative exists. Disclosure of airport proximity and avigation easements must be required as a condition of development.
- - Clearly Unacceptable	Specified use must not be allowed. Potential safety or overflight nuisance impacts are likely in this area.

NOTICE OF PROPOSED CONSTRUCTION

An FAA Form 7460-1, Notice of Proposed Construction or Alteration must be submitted for any construction or alteration (including hangars and other on-airport and off-airport structures, towers, etc) over 200 feet in height, or within 20,000 horizontal feet of the airport greater in height than an imaginary surface extending outward and upward from the runway at a slope of 100 to 1.

NOTE: DEVELOPMENT PROJECTS WHICH ARE WILDLIFE ATTRACTANTS, INCLUDING SEWAGE TREATMENT PONDS AND WETLAND MITIGATION BANKS WITHIN 10,000 FEET OF THE RUNWAY OR NEW LANDFILLS WITHIN 6 MILES OF THE AIRPORT ARE UNACCEPTABLE. (REFERENCE FAA ADVISORY CIRCULAR 150/5200-33)

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769
1701 Stampede Ave. Suite 201
Cody, WY 82414
ph: 307.527.4042 fax: 307.527.4043
email: aci@armstrongconsultants.com

TAYLOR AIRPORT
TAYLOR, ARIZONA

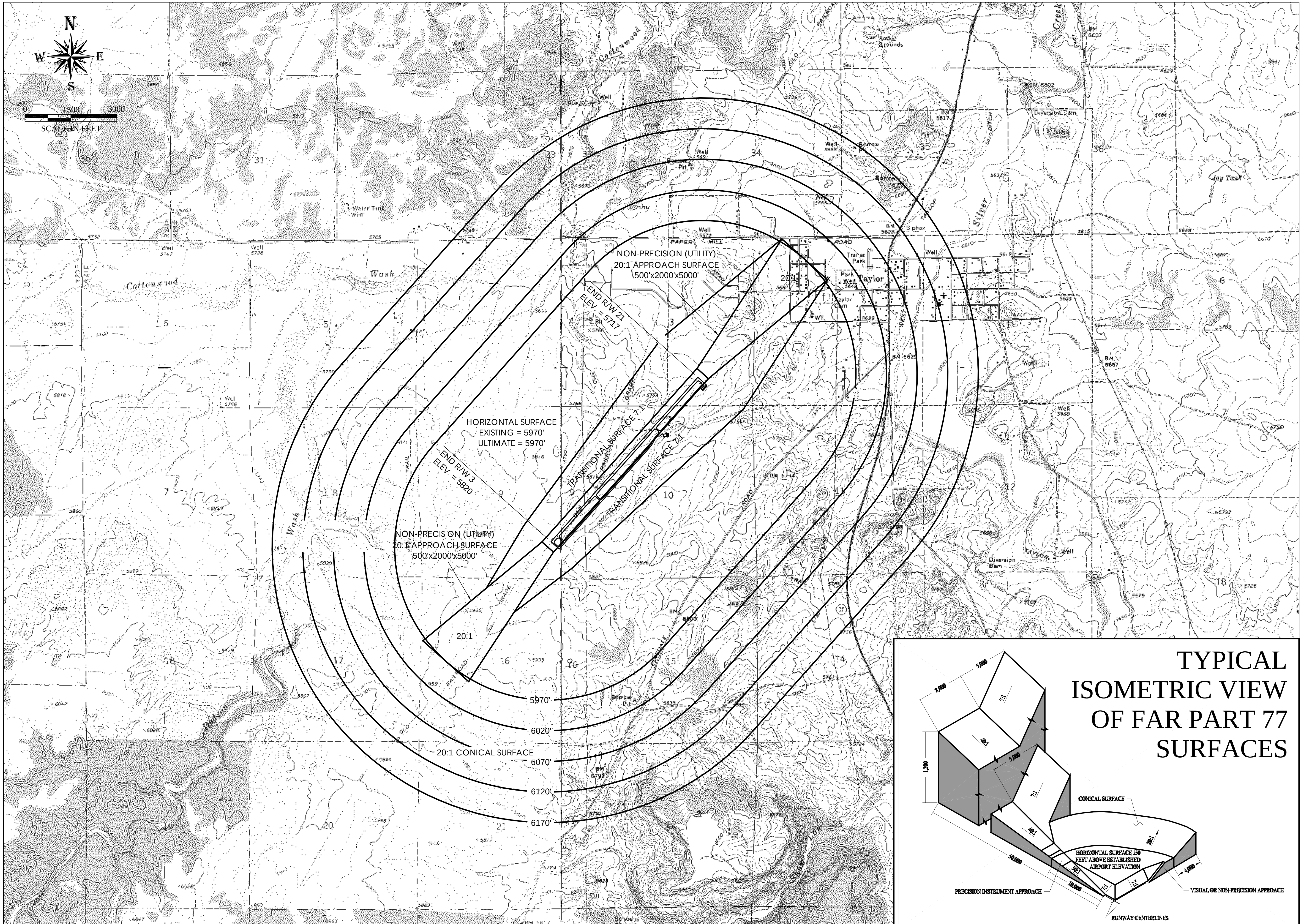
No.	Revision	Date	By

Project No: 008888
Date: 10.21.03
File Name: TAYLOR

Drawn: JOS
Checked: REH
Approved: DAC

OFF AIRPORT LAND USE

Sheet: 1 of: 1



ARMSTRONG CONSULTANTS, Inc.
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861 Rood Avenue
Grand Junction, CO 81501
ph: 970.242.0101 fax: 970.241.1769
1701 Stampede Ave. Suite 201
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FAR PART "77"
AIRSPACE

Sheet: 1 of: 1

Appendix C
Acronyms

Taylor Municipal Airport
Airport Master Plan

COMMONLY USED ACRONYMS

AC	Advisory Circular
AD	Airport Design
ADG	Airplane Design Group
AGL	Above Ground Level
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ALS	Approach Lighting System
ARC	Airport Reference Code
ARP	Airport Reference Point
ARTCC	Air Route Traffic Control Center
ASDA	Accelerate Stop Distance
ASDE	Airport Surface Detection Equipment
ASR	Airport Surveillance Radar
ASV	Annual Service Volume
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
AWOS	Automated Weather Observation system
BRL	Building Restriction Line
CAT	Category
CFR	Code of Federal Regulations
CWY	Clearway
CY	Calendar Year
DME	Distance Measuring Equipment
EL	Elevation
EMT	Emergency Medical Technician
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FBO	Fixed Base Operator
FSS	Flight Service System
FY	Fiscal Year
GA	General Aviation
GPS	Global Positioning System
HIRL	High Intensity Runway Lights
IEMT	Intermediate Emergency Medical Technician
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
LDA	Landing Distance Available
LOC	Localizer
MALS	Medium Intensity Approach Lighting System
MALSF	Medium Intensity Approach Lighting System
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
ME	Multi-Engine
MIRL	Medium Intensity Runway Lights
MITL	Medium Intensity Taxiway Lights
MLS	Microwave Landing System
MOA	Military Operating Area
MSL	Mean Sea Level
NAVAID	Navigational Aid
NDB	Nondirectional Beacon
NM	Nautical Mile
NPIAS	National Plan of Integrated Airport Systems
ODALS	Onmnidirectional Approach Lighting System
OFA	Object Free Area
OFZ	Obstacle Free Zone
PAPI	Precision Approach Path Indicator
PAR	Precision Approach Radar
RAIL	Runway Alignment Indicator Lights
REIL	Runway End Identifier Lights
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RVR	Runway Visual Range
RW	Runway
SWY	Stopway
TERPS	Terminal Instrument Procedures
TH	Threshold
TL	Taxilane
TODA	Takeoff Distance Available
TOFA	Taxiway Object Free Area
TORA	Takeoff Run Available
TSA	Taxiway Safety Area
TVOR	Very High Frequency Omnirange on an Airport
TW	Taxiway
USGS	United States Geological Society
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VOR	Very High Frequency Omnirange
WAAS	Wide Area Augmentation System

Appendix D
Glossary of Terms

Taylor Municipal Airport
Airport Master Plan

GLOSSARY OF TERMS

Above Ground Level (AGL)	A height above ground as opposed to MSL (height above Mean Sea Level).
Advisory Circular (AC)	Publications issued by the FAA to provide a systematic means of providing non-regulator guidance and information in a variety of subject areas.
Airport Improvement Program (AIP)	The AIP of the Airport and Airways Improvement Act of 1982 as amended. Under this program, the FAA provide funding assistance for the design and development of airports and airport facilities.
Aircraft Mix	The number of aircraft movements categorized by capacity group or operational group and specified as a percentage of the total aircraft movements.
Aircraft Operation	An aircraft takeoff or landing.
Airport	An area of land or water used or intended to be used for landing and takeoff of aircraft, includes buildings and facilities, if any.
Airport Elevation	The highest point of an airport's useable runways, measured in feet above mean sea level.
Airport Hazard	Any structural or natural object located on or near a public airport, or any use of land near such airport, that obstructs the airspace required for flight of aircraft on approach, landing, takeoff, departure, or taxiing at the airport.
Airport Land Use Regulations	Are designed to preserve existing and/or establish new compatible land uses around airports, to allow land use not associated with high population concentration, to minimize exposure of residential uses to critical aircraft noise areas, to avoid danger from aircraft crashes, to discourage traffic congestion and encourage compatibility with non-motorized traffic from development around airports, to discourage expansion of demand for governmental services beyond reasonable capacity to provide services and regulate the area around the airport to minimize danger to public health, safety, or property from the operation of the airport, to prevent obstruction to air navigation and to aid in realizing the policies of a County Comprehensive Plan and Airport Master Plan.
Airport Layout Plan (ALP)	A graphic presentation, to scale, of existing and proposed airport facilities, their location on the airport and the pertinent

	Funding assistance, an airport must have an FAA-approved ALP.
Airport Master Record, Form 5010	
	The official FAA document, which lists basic airport data for reference and inspection purposes.
Airport Reference Code (ARC)	
	The ARC is a coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport.
Airport Reference Point (ARP)	
	The latitude and longitude of the approximate center of the airport.
Airspace	
	Space above the ground in which aircraft travel; divided into corridors, routes and restricted zones.
Air Traffic	
	Aircraft operating in the air or on an airport surface, excluding loading ramps and parking areas.
Approach Surface	
	A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.
Automated Weather Observing System (AWOS)	
	This equipment automatically gathers weather data from various locations on the airport and transmits the information directly to pilots by means of computer generated voice messages over a discrete frequency.
Based aircraft	
	An aircraft permanently stationed at an airport.
Building Restriction Line	
	A line, which identifies suitable building area locations on airports.
Ceiling	
	The height above the earth's surface of the lowest layer of clouds or other phenomena which obscure vision.
Conical Surfaces	
	A surface extending outward and upward form the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.
Controlled Airspace	
	Airspace in which some or all aircraft may be subject to air traffic control to promote safe and expeditious flow of air traffic.
Critical/Design Aircraft	
	In airport design, the aircraft which controls one or more design items such as runway length, pavement strength, lateral separation, etc., for a particular airport. The same aircraft need not be critical for all design items.
Clearance and dimensional information required to show conformance with applicable standards. To be eligible for AIP.	
	Day Night Level (DNL)

	between 10:00 PM and 7:00 AM
Decibel	Measuring unit for sound based on the pressure level.
Design Type	The design type classification for an airport refers to the type of runway that the airport has based upon runway dimensions and pavement strength.
Federal Aviation Administration (FAA)	The federal agency responsible for the safety and efficiency of the national airspace and air transportation system.
FAR Part 77	A definition of the protected airspace required for the safe navigation of aircraft.
Fixed Base Operator (FBO)	An individual or company located at an airport and providing commercial general aviation services.
Fuel Flowage Fees	A fee charged by the airport owner based upon the gallons of fuel either delivered to the airport or pump at the airport.
General Aviation (GA)	All aviation activity in the United States, which is neither military nor conducted by major, national or regional airlines.
Glider	A heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its lifting surfaces and whose free flight does not depend principally on an engine (FAR Part 1),
Global Positioning System (GPS)	The global positioning system is a space based navigation system, which has the capability to provide highly accurate three-dimensional position, velocity and time to an infinite number of equipped users anywhere on or near the Earth. The typical GPS integrated system will provide: position, velocity, time, altitude, groundspeed and ground track error, heading and variation. The GPS measures distance, which it uses to fix position, by timing a radio signal that starts at the satellite and ends at the GPS receiver. The signal carries with it, data that discloses satellite position and time of transmission and synchronizes the aircraft GPS system with satellite clocks.
Hazard to Air Navigation	An object which, as a result of an aeronautical study, the FAA determines will have a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft, operation of air navigation facilities or existing or potential airport capacity.
Horizontal Surface	A horizontal plane 150 feet above the established airport elevation, the perimeter which is constructed by swinging arcs of specified radii form the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs.
24-hour average sound level, including a 10 decibel penalty for sound occurring	Imaginary Surfaces

	Surfaces established in relation to the end of each runway or designated takeoff and landing areas, as defined in paragraphs 77.25, 77.28 and 77.29 of FAR Part 77, *Objects Affecting Navigable Airspace*. Such surfaces include the approach, horizontal, conical, transitional, primary and other surfaces.
Itinerant Operations	All operations at an airport, which are not local operations.
Jet Noise	The noise generated externally to a jet engine in the turbulent jet exhaust.
Knots	Nautical miles per hour, equal 1.15 statute miles per hour.
Large Airplane	An airplane of more than 12,500 pounds maximum certified takeoff weight.
Local Operations	Operations by aircraft flying in the traffic pattern or within sight of the control tower, aircraft known to be arriving or departing from flight in local practice areas, or aircraft executing practice instrument approaches at the airport.
Location Identifier	A three-letter or other code, suggesting where practicable, the location name that it represents.
Maneuvering Area	That part of an airport to be used for the takeoff and landing of aircraft and for the movement of aircraft associated with takeoff and landing, excluding aprons.
Master Plan	A planning document prepared for an airport, which outlines directions and developments in detail for 5 years and less specifically for 20 years. The primary component of which is the Airport Layout Plan.
Mean/Maximum Temperature	The average of all the maximum temperatures usually for a given period of time.
Mean Sea Level (MSL)	Height above sea level.
Medium Intensity Runway Lights (MIRL)	For use on VFR runways or runway showing a nonprecision instrument flight rule (IFR) procedure for either circling or straight-in approach.
Minimum Altitude	That designated altitude below which an IFR pilot is not allowed to fly unless arriving or departing an airport or for specific allowable flight operations.
	National Airspace System

The common network of United States airspace, navigation aids, communications facilities and equipment, air traffic control equipment and facilities, aeronautical charts and information, rules, regulations, procedures, technical information and FAA manpower and material.

National Plan of Integrated Airport Systems (NPIAS)

A plan prepared annually by the FAA which identifies, for the public, the composition of a national system of airports together with the airport development necessary to anticipate and meet the present and future needs of civil aeronautics, to meet requirements in support of the national defense and to meet the special needs of the Postal Service. The plan includes both new and qualitative improvements to existing airports to increase their capacity, safety, technological capability, etc.

NAVAID

A ground based visual or electronic device used to provide course or altitude information to pilots.

Noise

Defined subjectively as unwanted sound. The measurement of noise involve understanding three characteristics of sound: intensity, frequency and duration.

Noise Contours

Lines drawn about a noise source indicating constant energy levels of noise exposure. DNL is the measure used to describe community exposure to noise.

Noise Exposure Level

The integrated value, over a given period of time of a number of different events of equal or different noise levels and durations.

Non-Precision Instrument

A runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance for which a straight-in nonprecision instrument approach procedure has been approved.

Notice to Airmen (NOTAM)

A notice containing information (not known sufficiently in advance to publicize by other means concerning the establishment, condition or change in any component (facility, service, or procedure) of or hazard in the National Airspace System, the timely knowledge of which is essential to personnel concerned with flight operations.

Object

Includes, but is not limited to, above ground structures, NAVAIDs, people, equipment, vehicles, natural growth, terrain and parked aircraft.

Object Free Area (OFA)

A two-dimensional ground area-surrounding runways, taxiways and taxilanes which is clear of objects except for object whose location is fixed by function.

Obstacle Free Zone (OFZ)

	approach OFZ and the inner-transitional OFZ, which is clear of object penetrations other than frangible NAVAIDs.
Obstruction	An object which penetrates an imaginary surface described in the FAA's Federal Aviation Regulations (FAR), Part 77.
Parking Apron	An apron intended to accommodate parked aircraft.
Pattern	The configuration or form of a flight path flown by an aircraft or prescribed to be flown, as in making an approach to a landing
Precision Approach Path Indicators (PAPI)	The visual approach slope indicator system furnishes the pilot visual slope information to provide safe descent guidance. It provides vertical visual guidance to aircraft during approach and landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that they are "on path" if they see red/white, "above path" if they see white/white and "below path" if they see red/red.
Primary Surface	A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway, but when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway.
Rotating Beacon	A visual navaid operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport.
Runway	A defined rectangular surface on an airport prepared or suitable for the landing or takeoff of airplanes.
Runway End Identifier Lights (REIL)	REILs are flashing strobe lights which aid the pilot in identifying the runway end at night or in bad weather conditions.
Runway Gradient	The average gradient consisting of the difference in elevation of the two ends of the runway divided by the runway length may be used provided that no intervening point on the runway profile lies more than five feet above or below a straight line joining the two ends of the runway. In excess of five feet the runway profile will be segmented and aircraft data will be applied for each segment separately.
Runway Lighting System	A system of lights running the length of a system that may be either high intensity (HIRL), medium intensity (MIRL), or low intensity (LIRL).
Runway Orientation	The magnetic bearing of the centerline of the runway.
The airspace defined by the runway OFZ and, as appropriate, the inner-	Runway Protection Zone (RPZ)

Runway Safety Area (RSA)	protection of people and property on the ground.
Segmented Circle	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion form the runway.
Small Aircraft	A basic marking device used to aid pilots in locating airports and which provides a central location for such indicators and signal devices as may be required.
Taxiway	An airplane of 12,500 pounds or less maximum certified takeoff weight.
Terminal Area	A defined path established for the taxiing of aircraft from one part of an airport to another.
Threshold	The area used or intended to be used for such facilities as terminal and cargo buildings, gates, hangars, shops and other service buildings, automobile parking, airport motels, restaurants, garages and automobile services and a specific geographical area within which control of air traffic is exercised.
Touch and Go Operations	The beginning of that portion of the runway available for landing.
Traffic Pattern	Practice flight performed by a landing touch down and continuous takeoff without stopping.
Transitional Surface	The traffic flow that is prescribed for aircraft landing at, taxiing on or taking off form an airport. The usual components are the departure, crosswind, downwind, and base legs; and the final approach.
Universal Communications (UNICOM)	These surfaces extend outward and upward at right angles to runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces.
Visual Flight Rules (VFR)	A private aeronautical advisory communications facility for purpose other than air traffic control. Only one such station is authorized in any landing area. Service available are advisory in nature primarily concerning the airport services and airport utilization. Locations and frequencies of UNICOMs are listed on aeronautical charts and publications.
Visual Runway	Rules that govern flight procedures under visual conditions.
An area off the runway end used to enhance the	A runway intended for visual approaches only with no straight-in instrument approach procedure either existing or planned for that runway.

ARMSTRONG CONSULTANTS, Inc.
airport engineering and planning services
861 Rood Avenue
Grand Junction, CO 81501
Ph (970) 242-0101
Fax (970) 241-1769