AIRPORT MASTER PLAN

WORKING PAPER 1

TAOS REGIONAL AIRPORT

TAOS, NEW MEXICO | AUGUST 2020

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Airport Master Plan Overview

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Chapter 1 –Airport Master Plan Overview

1.1 Introduction

Taos Regional Airport (three letter identifier SKX) is a public use airport located in northern New Mexico, approximately eight miles northwest of the Town of Taos, in Taos County. The airport encompasses approximately 859 acres and is owned and operated by the Town of Taos.

The last master plan for the Airport was completed in the late 1980's, prior to an extended Environmental Impact Study (EIS) for the construction of a new crosswind runway. The current Airport Layout Plan (ALP) for Taos Regional Airport was completed in 2018 and depicts as-built conditions only. The Town of Taos is conducting this airport master plan study to study and develop the short, medium and long-term development plans for the airport in order to meet current and future aviation demands. This study will be used by the Local, State and Federal officials to plan, prioritize and fund the operation, maintenance and development for the airport.

Airport Master Plans are prepared by the operators of individual airports and are usually completed with the assistance of consultants. The Town of Taos completing this master plan with the assistance of Armstrong Consultants, Inc.

1.2 Purpose

The purpose and goal of an airport master plan (AMP) is to provide the framework needed to guide future airport development that will cost-effectively satisfy local and regional aviation demand, while producing an efficient and economically feasible facility that meets the current Federal Aviation Administration (FAA) design standards. As part of the planning process, consideration will be given to the potential environmental and socioeconomic impacts associated with alternative development concepts as well as the possible means of avoiding, minimizing, or mitigating potential impacts to sensitive resources.

The master plan report describes and depicts the long-term development concepts of the airport. The document also presents the concepts graphically in the ALP drawing set and includes the supporting data and logic on which the concepts are based.

1.3 Objectives

The primary objective of the master plan is to provide guidance to decision makers, airport users and the general public in implementing airport development actions, while remaining in line with both the airport's and community's concerns and objectives.

The master plan's recommended development is presented for three planning periods— short-term (5 years), medium-term (10 years), and long-term (20 years). The recommended development program is intended to satisfy aviation demand and be compatible with the environment, community development, and other transportation modes. The following objectives serve as a guide in the preparation of this study.

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

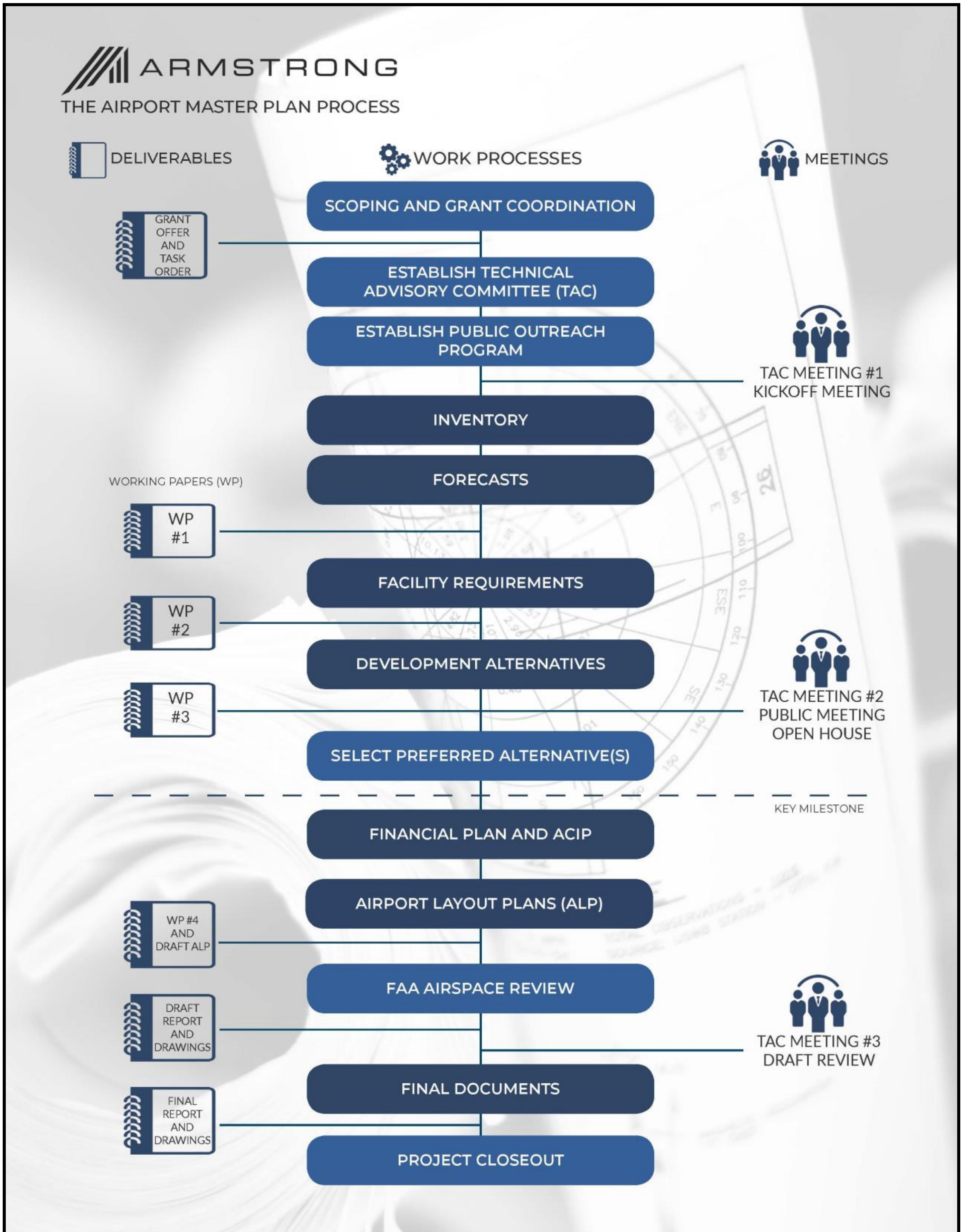
- Clearly identify the present and future roles of the Airport;
- Depict design standards for the determined Airport Reference Code (ARC);
- Provide the basis for future federal, state, local government and private investment in the airport;
- Develop realistic, phased development and maintenance plans for the airport in the short, medium and long-term;
- Evaluate the potential needs of the airport to accommodate increased commercial air service
- Provide an Airport Layout Plan (ALP) in accordance with the current FAA ALP checklist and Standard Operating Procedures (SOPs);
- Identify future land acquisition requirements;
- 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 needs and satisfies local, state and federal regulations.

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 1-1** 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.

When completed, this airport master planning study will be incorporated into larger airport planning efforts that takes place at national, state, and local levels. On the Federal level, the National Plan of Integrated Airport Systems (NPIAS) is a ten-year airport system plan that FAA continually updates and publishes biannually. This publication lists developments at public use airports that are considered to be of national interest and identifies development needs based on input from airport master plans. To be eligible for Federal financial assistance for airport planning and development, an airport must be included in the NPIAS.

Statewide airport system planning identifies the needs of existing airports and identifies location and characteristics of new airports needed to meet statewide air transportation goals. This planning is performed by state transportation or aviation planning agencies. In New Mexico, this state airport planning is performed by the New Mexico Department of Transportation, Division of Aeronautics (NMDOT). Using Federal and local input, state system plans are coordinated with other transportation planning and comprehensive land use planning.

The Taos Regional Airport Master Plan Technical Advisory Committee (TAC) consists of members representing varied interests in the airport. Their involvement and input throughout the master planning process will help to keep interested parties informed and will foster consensus for future development actions.



Source: Armstrong Consultants, Inc.

Figure 1-1 Airport Master Plan Flow Chart

Chapter Two

Inventory of Airport Assets

Chapter 2 – Inventory of Airport Assets

2.1 Introduction to Airport Background and Setting

Airport Background

Taos Regional Airport is a public use airport located in northern New Mexico, approximately eight miles northwest of the Town of Taos, New Mexico. The Airport is located approximately 77 miles south of Santa Fe, New Mexico, the state capital. The Airport is owned and operated by the Town of Taos. Section 2.2, *Airport Grant History*, provides additional details on historical improvement projects at the Airport. The Airport serves the general aviation community and recreational/ business travelers throughout Northern New Mexico and parts of Colorado. Taos Air also operates at the Airport, and offers seasonal charter service to Texas and California via a fleet of commuter jets. The Airport has an International Civil Aviation Organization (ICAO) three letter identifier of SKX and an International Air Transportation Association (IATA) three letter identifier of TSM.

Locally, Taos Regional Airport acts as a general aviation airport serving primarily the community of northern New Mexico. However, with the Airport's proximity to several cultural and recreational sites throughout the area, known as the Enchanted Circle, it also acts as a transportation hub for visitors from all over. Popular tourist stops include the Taos Ski Valley, the historical Town of Taos Plaza, as well as several wilderness and cultural areas within the surrounding vicinity, including Taos Blue Lake, Latir Peak Wilderness Area, Wheeler Peak Wilderness Area, and the Taos Pueblo World Heritage Site.

Environmental Impact Study

In considering the history and development taken place at SKX in past years, it is notable to acknowledge the Environmental Impact Study (EIS) conducted for the Airport, which took place over the course of more than a decade. In 1992, the FAA began preparing for the EIS, with the goal being to identify the potential environmental effects associated with the construction and operation of proposed improvements at the Airport. This included enhancements to correct existing operational deficiencies, but primarily consisted of the construction of a new C-II runway to provide adequate wind coverage and sufficient runway length to accommodate the majority of aircraft utilizing the Airport. The goal of the EIS was to create a document that provided guidance to the Town of Taos to develop an airport facility which offered enhanced safety and utility for all users, while mitigating substantial adverse impacts to environmental and historical sites on Airport property and within the surrounding community.

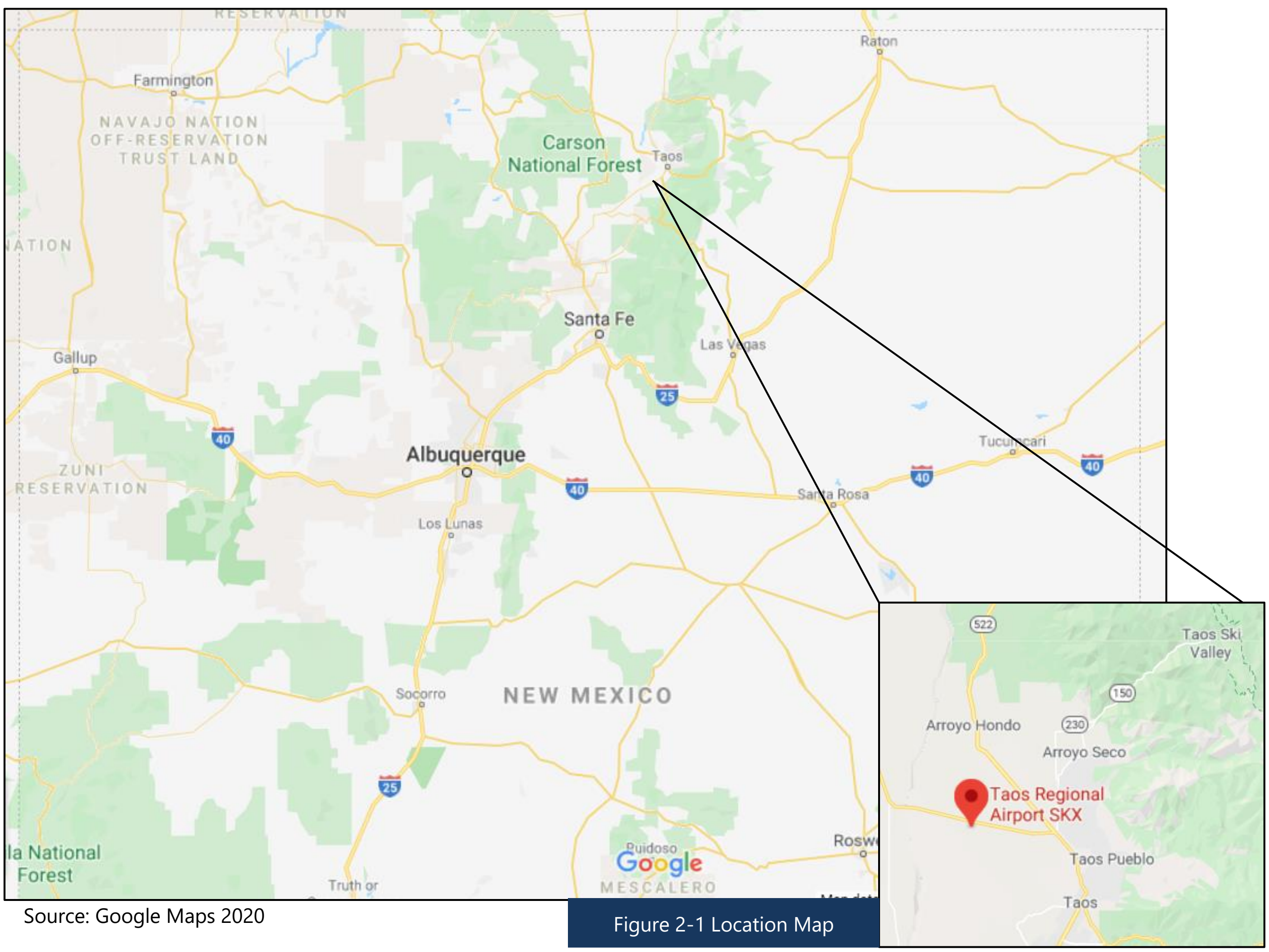
The EIS was a collaborative effort through many entities, which namely included the FAA and their selected consultant, Greiner, the Town of Taos, Taos Pueblo, and the Environmental Protection Agency (EPA). In 1993 the Preliminary Draft EIS (PDEIS) was completed and reviewed. Initial evaluation of the document indicated further studies needed to take place, which primarily included detailed ethnographic studies of the Taos Pueblo World Heritage Site. In 1998, the FAA re-initiated the EIS process which had been suspended following the preparation and review of the PDEIS. This stage of the project was designated as Phase 2. By 2006, Phase 2 cumulated in the official Draft EIS (DEIS), that was made available for review and comment by Federal, State and local offices. In the years following the release of the DEIS, meetings were held amongst the consulting parties until the

FAA issued the Preliminary Final EIS (PFEIS) in 2009. Notice of availability of the Final EIS (FEIS) was posted in the Federal Register by the EPA on June 29, 2012.

Following the availability of the FEIS, the FAA issued a Record of Decision (ROD), which documents the agencies final decision regarding approval of the proposal. The ROD discusses the alternatives considered for the project, the basis for selecting the Preferred Alternative, a summary of impacts, and mitigation measures for the Preferred Alternative. In the ROD, the FAA concludes that the EIS was prepared in a process which gave fair consideration to the interests of communities in or near the project location and was in compliance with the National Environmental Policy Act (NEPA) of 1996. The proposed action, construction of the C-II Runway, was identified as being reasonably supported, and selected as the "environmentally preferred alternative".

Airport Setting

An airport's location is defined by its Airport Reference Point (ARP), which is the geometric center of the runway system based upon the length of the existing runway. ARPs are calculated based on existing and future runway lengths and locations. The existing ARP at Taos Regional Airport is located at N 36°27'6.1" latitude, W 105°40'23.1" longitude. The Airport encompasses approximately 859 acres of land at an elevation of 7,094.6 feet. The location of the Taos Regional Airport is depicted in **Figure 2-1.**



Source: Google Maps 2020

Figure 2-1 Location Map

2.2 Airport Grant History

The Airport Improvement Program (AIP) is the Federal Aviation Administration (FAA) grant program that provides grants to public agencies for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS). For small primary, reliever and general aviation airports, AIP grants cover 90 percent of eligible costs, with a five percent match by the state on federal projects and the remaining portion covered by the sponsor. Eligible projects include improvements related to enhancing airport safety, capacity, security, and environmental analysis. Airports can use AIP funds on most airfield capital improvements or repairs and in some specific situations, for terminals, hangars and equipment. Professional services necessary for eligible projects such as planning, surveying, and design are also eligible; however, aviation demand at the airport must justify the projects. The projects must also meet federal environmental and procurement requirements. **Table 2-1** contains a summary of Federal grants issued to Taos Regional Airport under the current Federal airport grant program, AIP.

Taos Regional Airport has experienced relatively slow development through the duration of the lengthy EIS. All significant developmental projects at the Airport were delayed. The development grants the Airport received since the beginning of the EIS were primarily related to safety and maintenance.

Table 2-2 contains a list of projects that were funded with New Mexico Department of Transportation-Division of Aeronautics (NMDOT) State grant funds issued to Taos Regional Airport.

Table 2-1 FAA Grant History

Year	Project Description	FAA Funding
2009	Acquire Land for Approaches	$103,566
2009	Rehabilitate Taxiway	$141,511
2009	Conduct Environmental Study	$356,901
2011	Acquire Equipment	$52,060
2011	Rehabilitate Runway 4-22	$168,420
2012	Construct Snow Removal Equipment (SRE) Building	$28,384
2012	Conduct Environmental Study	$94,846
2012	Environmental Mitigation	$250,000
2012	Construct Runway	$894,846
2013	Construct SRE Building	$320,713
2013	Construct Runway	$752,452
2013	Environmental Mitigation	$778,600
2014	Construct Runway	$5,476,691
2015	Construct Runway	$16,162,353
2018	Reconstruct Taxiway	$89,252
2019	Reconstruct Taxiway	$239,686
	Total	**$25,910,281**

Source: Federal Aviation Administration, 2020

Table 2-2 NMDOT Grant History

Year	Project Description	Sponsor Funds	State Funds	Total
2009	Establish Air Service	$100,000	$0.00	$100,000
2009	Acquire Snow Removal Equipment (SRE)	$8,010	$8,010	$16,020
2009	Pavement Preservation	$553	$553	$1,106
2010	Pavement Maintenance	$3,750	$3,750	$7,500
2010	Fog Seal and Remark RW 4/22	$17,085	$68,341	$85,426
2010	EIS Phase 3A	$9,392	$9,392	$18,784
2010	Stormwater Pollution Prevention Plan (SWPPP) Update	$20,83	$2,083	$2,083
2011	Airport Consumable Maintenance Items	$500	$4,497	$4,997
2011	Seal Coat and Remark RW 4/22	$4,472	$4,471	$8,943
2012	Replace Rotating Beacon	$2,325	$2,325	$4,650
2012	Maintenance Items	$499	$4,485	$4,984
2012	Design SRE Building	$1,577	$1,577	$3,154
2012	Complete EIS	$5,270	$5,270	$10,540
2013	General Maintenance	$1,000	$10,000	$11,000
2013	Design Crosswind Runway-Phase 1	$44,445	$49,713	$94,158
2013	Military Operations Area (MOA) Overflight Mitigation	$13,889	$13,889	$27,778
2013	Construct SRE Building	$3,000	$29,500	$32,500
2013	Purchase Tractor	$7,000	$63,000	$70,000
2014	Construct Crosswind Runway-Phase 2	$41,803	$41,803	$83,606
2014	MOA Overflight Mitigation	$43,256	$43,255	$86,511
2014	General Maintenance	$1,000	$10,000	$11,000
2014	Bid Crosswind Runway- Phase 3	$1,750	$1,750	$3,500
2014	Construct Crosswind Runway-Phase 3	$48,4362	$48,4361	$96,8723
2015	General Maintenance	$1,111	$10,000	$11,111
2016	Design and Bid Crosswind Runway-Phase 4	$5,159	$5,158	$10,317
2016	General Maintenance	$1,110	$9,992	$11,102
2016	Construct Crosswind Runway-Phase 4	$897,909	$897,909	$1,795,818
2016	EIS Administrative File Preparation	$1,073	$1,073	$2,146
2017	General Maintenance	$1,111	$9,999	$11,110
2018	General Maintenance	$1,111	$10,000	$11,111
2018	Design Taxiway	$4,959	$4,985	$9,944
2018	Acquire De-icing Equipment	$1,550	$139,500	$141,050
2019	Aircraft Monitoring System Maintenance	$1,000	$1,000	$2,000
2019	Airport Layout Plan Update	$3,284	$3,284	$6,568
2019	Airfield Maintenance	$1,111	$9,999	$11,110
2019	Aviation System Action Program (ASAP) Marketing	$200,000	$0.00	$200,000
2019	Aviation System Action Program	$200,000	$0.00	$200,000
	Total	**$2,115,426**	**$1,964,924**	**$4,080,350**

Source: New Mexico Department of Transportation, Aeronautics Division, 2020

Airport sponsors agree to certain obligations, or grant assurances, when they accept Federal grant funds or Federal property transfers for airport purposes. These obligations serve to protect the public's interest in civil aviation and ensure compliance with Federal statutes and requirements, including FAA safety standards. As a recipient of AIP funds, Taos Regional Airport and the Town of Taos have accepted the contractual obligation to comply with Federal grant assurances.

FAA Order 5190.6B, *Airport Compliance Manual*, currently has 39 grant assurances that are accepted by an airport sponsor whenever federal grant funds are used to fund a project. Among other requirements, the grant assurances require the airport sponsor to keep the airport open to the public for at least the useful life of the improvement or while it complies with safety requirements. In most cases, the useful life is considered to be 20 years from the date of acceptance of the grant. Grant assurance agreements associated with land acquisition run in perpetuity.

2.3 Airport Service Level and Role

Airport Service Level

Since 1970, the FAA has classified a subset of the 5,400 public-use airports in the United States as being vital to serving the public needs for air transportation, either directly or indirectly, and therefore may be made eligible for federal funding to maintain their facilities. These airports are categorized within the NPIAS based on the type of aircraft that uses the airport and the type of passenger and cargo operations available. As established by Congress, the level of Federal funding is tied to these categories.

The categories of airports listed in the NPIAS are:

Commercial Service – These are public airports that accommodate scheduled air carrier or air taxi service provided by US and international certificated air carriers. Commercial service airports are either:

- **Primary –** a public-use airport that enplanes more than 10,000 passengers annually, or
- **Non-primary –** a public-use airport that enplanes between 2,500 and 10,000 passengers annually.

Reliever – This is an airport designated by the FAA as having the function of relieving congestion at a commercial service airport by providing more general aviation access. These airports comprise a special category of general aviation (GA) airports and are generally located within a relatively short distance of primary airports. Privately owned airports may also be identified as reliever airports.

General Aviation – These airports are used almost exclusively by private and business aircraft and private charter services are available. Scheduled air carrier passenger service in larger aircraft does not operate at these airports. Within the General Aviation category, there are four subcategories:

- **National** – Serves national and global markets. Very high levels of activity with many jets and multiengine propeller aircraft. These airports average about 200 total based aircraft, including at least 30 jets.

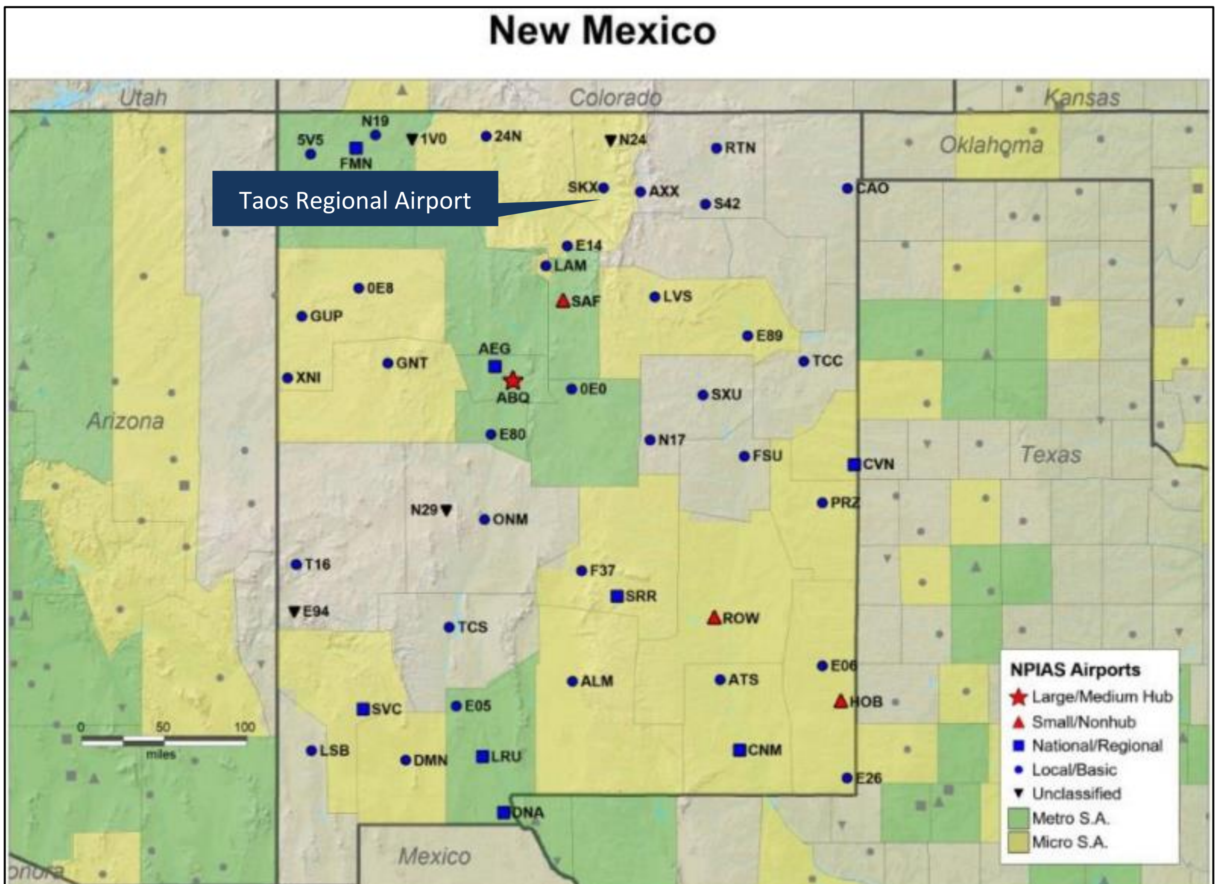
- **Regional –** Serves regional and national markets. High levels of activity with some jets and multiengine propeller aircraft. These airports average about 90 total based aircraft, including at least three jets.

- **Local –** Serves local and regional markets. Moderate levels of activity, with some multiengine propeller aircraft. These airports average about 33 based propeller-driven aircraft and no jets.

- **Basic** – Often serving critical aeronautical functions within local and regional markets. Moderate to low levels of activity, averaging about 10 propeller-driven aircraft and no jets.

There are many GA airports that are not included in the NPIAS. For an airport to be included in the NPIAS, it must have at least 10 based aircraft, be located at least 30 miles away from the nearest NPIAS airport, be a facility identified and used by certain federal agencies (U.S. Forest Service, U.S. Customs and Border Protection, etc.) or serve an operation specified by statute, such as the Essential Air Service (EAS) program.

Taos Regional Airport is categorized in the NPIAS as General Aviation – Local airport. According to Airport Management records, the Airport had 38 based aircraft as of 2019. Aircraft utilizing the airport are predominately single-engine piston, multi-engine piston, turboprop, jet aircraft and rotorcraft. **Figure 2-2** depicts Taos Regional Airport's location in relation to other NPIAS airports in the State of New Mexico.



Source: Federal Aviation Administration, 2020

Figure 2-2 NPIAS Airports in New Mexico

At the State level, NMDOT has recognized the importance of planning as a proactive approach to ensuring aviation continues its role in the statewide transportation system. They created a similar plan to the FAA's NPIAS called the New Mexico Airport System Plan (NMASP). The purpose of the NMASP is to provide a framework for the integrated planning, operation, and development of New Mexico's aviation assets. The most current version of the NMASP was published in 2017. Taos Regional Airport is listed as a Community General Aviation airport; one of 19 in the state of New Mexico. According to the NMASP, a Community General Aviation airport is one which serves a supplemental contributing role for the local economy. These airports focus on providing aviation access for small business, recreational and personal flying activities throughout the state. Also considered in the NMASP is an Airport's Service Level Role as defined in the 2009-2013 General Aviation Regional Airport System Plan (RASP) developed by the FAA Southwest Region. The RASP divides airports into four levels in accordance with the number of based aircraft and assigns goals and performance metrics for each level. Level I airports are the most active and have 100 or more based aircraft whereas level IV airports are less active and have fewer than 10 based aircraft. According to the current RASP, Taos Regional Airport is classified as a level II airport.

- Level I- GA with 100+ Based Aircraft
- Level II- GA with 50-99 Based Aircraft
- Level III- GA with 10-49 Based Aircraft
- Level IV- GA with less than 10 Based Aircraft

Locally, Taos Regional Airport serves as a general aviation airport serving northern New Mexico. With the Airport's proximity to key tourist locations in the area, including the popular Taos Ski Valley, as well as the opening of the new runway in 2017, the Airport has experienced an increase in operations by private and corporate aircraft in recent years. This includes the introduction of Taos Air, a public charter airline. Furthermore, given the Airport's strategic location and proximity to multiple states, it also serves as a vital access point for fixed-wing and helicopter air ambulance operations. The following outlines the types of aircraft and operations that are present at the Airport in greater detail:

2.3.1 Scheduled Charter Service

Advanced Air, LLC operates Taos Air; a charter service which provides seasonal, scheduled air service to Texas and California, with routes to Dallas/Love Field (TX), Hawthorne/Los Angles (CA) and Carlsbad/San Diego (CA). Scheduled flights began in December 2018. Taos Air is currently served by a fleet of two Dornier 328 Jets. **Figure 2-3** shows one of the jets operated by Taos Air.

Source: Armstrong Consultants, Inc.

Figure 2-3 Taos Air Dornier 328

2.3.2 Business and Recreational Transportation

This category includes business as well as tourism related activities. The types of aircraft utilized for personal and business transportation include a mix of light-weight, single-engine, multi-engine, turboprop, and turbo jet aircraft. These users prefer the utility and flexibility offered by general aviation aircraft. This is the most common type of user at the Airport. **Figure 2-4** depicts corporate jets on the Airports' aircraft apron. These aircraft can be operated as a commercial activity under Federal Aviation Regulations (FAR) Part 135 or as a private activity under FAR Part 91.

Source: Armstrong Consultants, Inc.

Figure 2-4 Corporate Jets

2.3.3 Air Ambulance Services and Local Health Care Support

TriState Care Flight provides essential emergency medical transportation for life threatening situations and assists in patient transfers by air from local hospitals to higher level care facilities that are typically located in Denver or Albuquerque (approximately 286 and 146 miles by road, respectively). The air ambulance services provide quick and efficient transportation in emergency situations when time is of the essence. TriCare bases a Eurocopter AS350 at the Airport. Fixed-wing aircraft, including the PC-12 and KingAir 200, also operate at the Airport for air ambulance services.

2.3.4 Military

Military operations are those conducted by U.S. or foreign military aircraft and personnel for the purposes of national security and defense. Almost all military operations are training or proficiency activities. A wide range of aircraft may be used for these operations, including multi-engine piston or turbo-prop, turbo-jet, jet, or rotary. Military helicopters traveling from Fort Carson, Colorado to Fort Hood, Texas frequently use Taos as a refueling stop.

2.4 Existing Activity Levels

There are various federal, state, and local sources available for determining existing activity levels at an airport. These include, but are not limited to, FAA Form 5010-1, *Airport Master Record*, FAA Terminal Area Forecast (TAF), on-site inventory and airport management records.

The FAA Form 5010-1 is the official record maintained by the FAA to document airport physical conditions and other pertinent information. The information is typically collected from the airport sponsor and includes an annual estimate of aircraft activity as well as the number of based aircraft. The accuracy of the information contained in the Form 5010-1 varies directly with the date of its last revision and the reliability of the source of the information. The current FAA 5010-1 Form for Taos Regional Airport indicates 30 based aircraft and 7,000 annual operations. The National Based Aircraft Inventory lists 26 validated based aircraft for Taos Regional Airport. Airport Management has reported that there are currently 38 based aircraft at the Airport and estimates the total annual operations at approximately 7,000.

The FAA TAF is a historical record of aircraft activity and contains forecast projections of based aircraft and annual operations based on information from the Form 5010-1. The TAF is maintained and utilized by the FAA for planning and budgeting purposes. The 2020-2040 TAF data reports 37 based aircraft at the airport and 7,334 annual operations in 2020, with a forecasted 40 based aircraft and 11,684 annual operations by 2040 at the Airport. The updated aviation forecast approved by the FAA as part of this master plan study will update the forecast operations and based aircraft numbers in FAA Form 5010-1 and the FAA TAF.

2.5 Airport Service Area

An airport service area is defined by the communities and surrounding areas that are served by the airport facility. Generally, the airport service area includes the area within a thirty-minute drive or twenty-mile radius, of the airport. However, the actual service area is dependent upon several factors including surrounding terrain, proximity to its users, quality of ground access and the proximity of the facility to other airports that offer the same or similar services. Generally, aircraft operators will usually operate at the closest airport to their residence, place of business or destination that provides adequate facilities and services to accommodate their aircraft.

The Taos Regional Airport service area generally includes Taos County, located in central northern New Mexico, and extends up and outwards to further part of New Mexico and areas near the New Mexico/Colorado border.

The factors impacting the service area for Taos Regional Airport include:

- Scheduled air service to multiple hub airports;
- Available runway length and crosswind runway;
- Full service Fixed Based Operator (FBO) facility;
- Available instrument approach procedures;
- Proximity to recreational areas and the popular Taos Ski Valley; and
- Lack of existing available hangar space

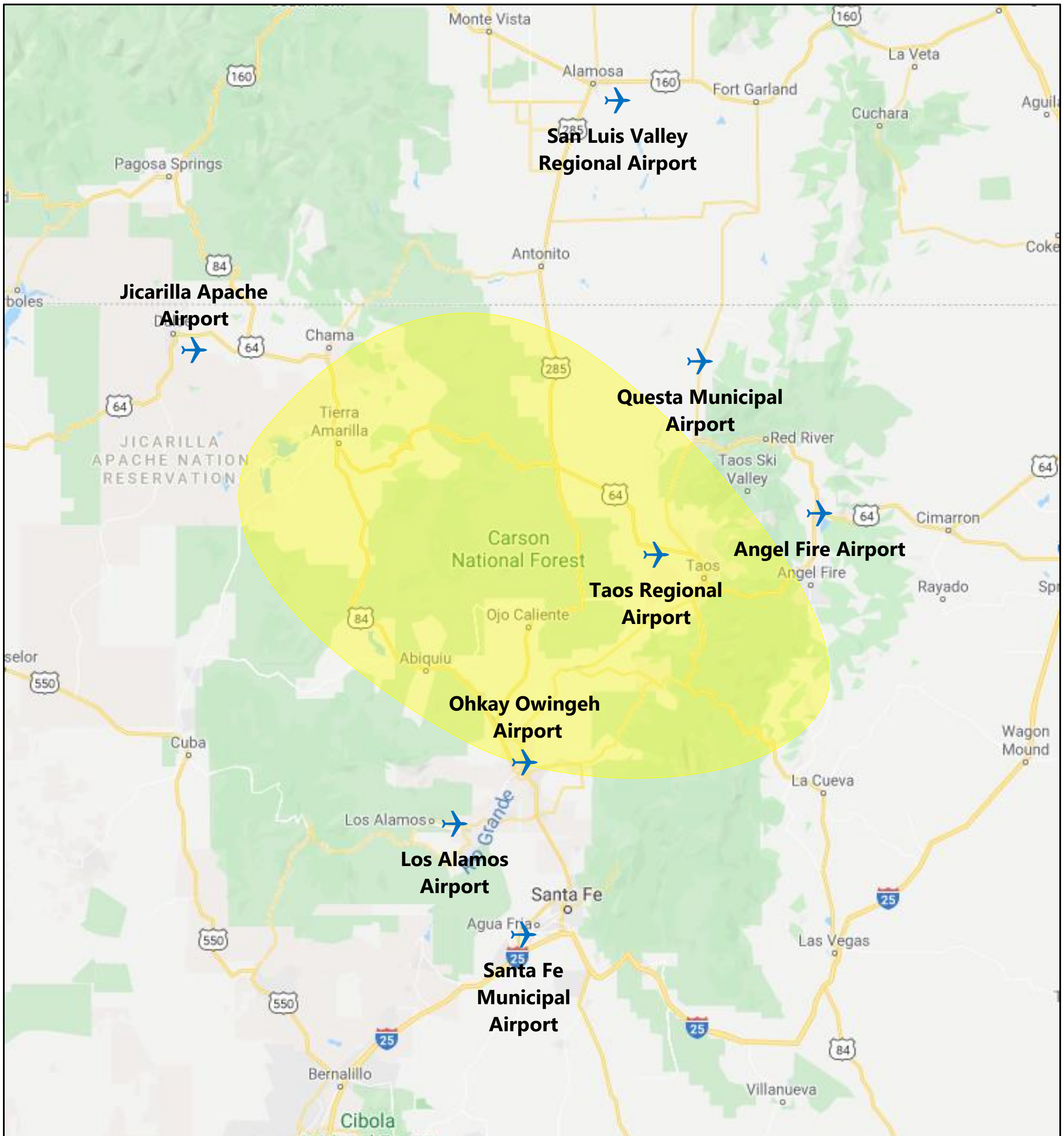
Table 2-3 provides information on some of the nearest airports to Taos Regional Airport.

Table 2-3 Airports Near Taos Regional Airport

Airport Name	Distance (NM)	NPIAS Status	Runway Dimensions	Pavement Type	Instrument Approaches	Fuel
Taos Regional Airport (SKX) Taos, New Mexico	0	GA	13/31: 8,600′ x 100′ 4/22: 5,504′ x 75′	Asphalt	GPS VOR/DME	100 LL Jet-A
Angel Fire Airport (AXX) Angel Fire, NM	19	GA	17/35: 8,900′ x 100′	Asphalt	GPS	100 LL Jet-A
Questa Municipal Airport (N24) Questa, New Mexico	21	GA	17/35: 6,861′ x 75′	Asphalt	N/A	N/A
Ohkay Owingeh Airport (E14) Espanola, New Mexico	31	GA	16/34: 5,007′ x 75′	Asphalt	N/A	100 LL Jet-A
Los Alamos Airport (LAM) Los Alamos, New Mexico	45	GA	9/27: 6,000′ x 120′	Asphalt	GPS	100 LL
Santa Fe Municipal Airport (SAF) Santa Fe, New Mexico	54	P	2/20: 8,366′ x 150′ 15/33: 6,316′ x 100 10/28: 6,301′ x 75′	Asphalt	ILS, GPS VOR/DME	100 LL Jet-A
San Luis Valley Regional Airport (ALS) Alamosa, CO	59	GA	2/20: 8,521′ x 100′	Asphalt	ILS, GPS, VOR/DME	100 LL Jet-A
Jicarilla Apache Airport (24N) Dulce, New Mexico	63	GA	17/35: 7,500′ x 75′	Asphalt	N/A	N/A

Source: www.airnav.com, 2020

Figure 2-5 depicts the Taos Regional Airport service area and other airports in the region. The airports depicted provide similar services, which are key factors in attracting airport users.

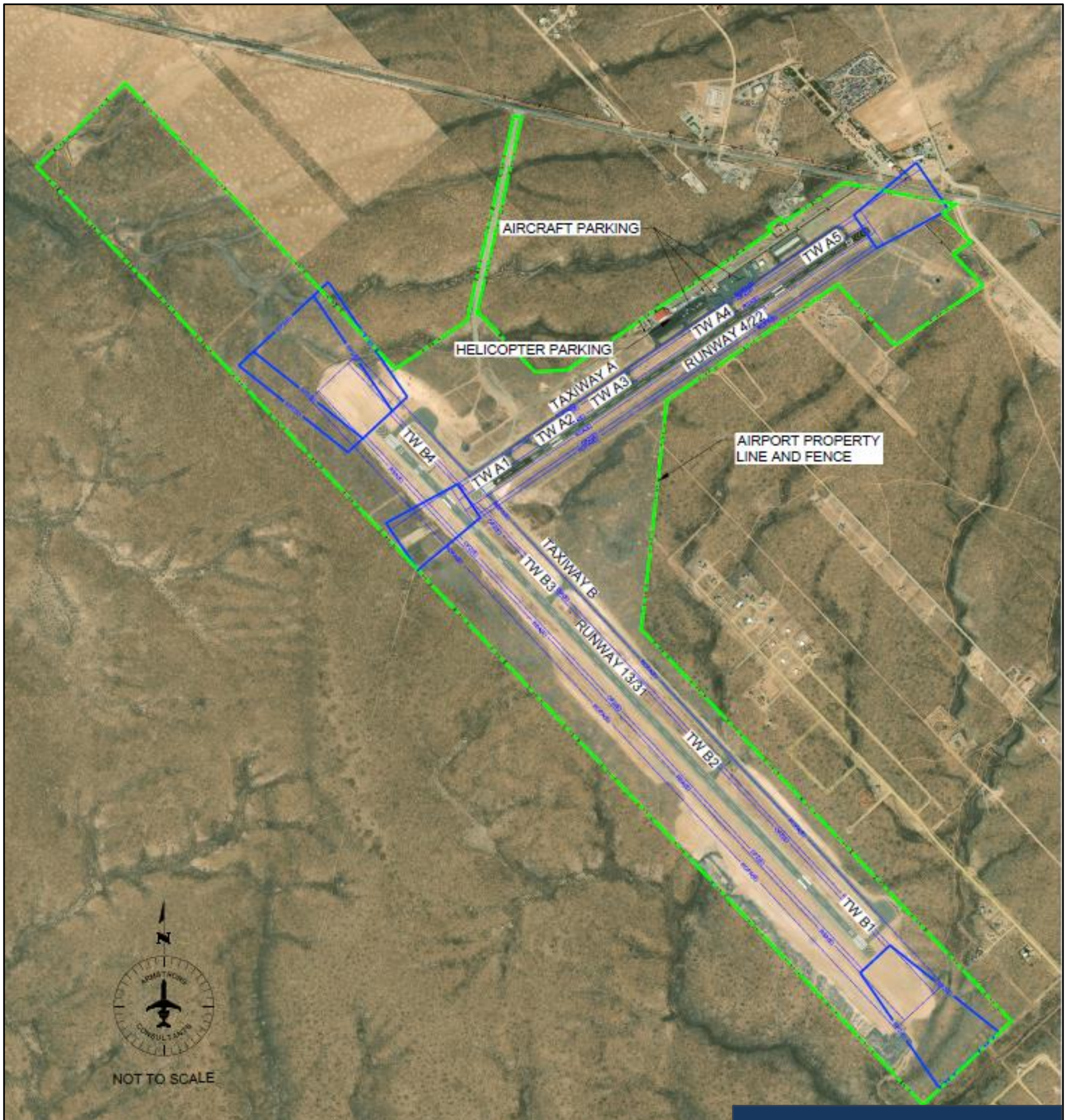


Source: Air Nav, 2020

Figure 2-5 Airport Service Area Map

2.6 Existing Airside Facilities at Taos Regional Airport

Airside facilities include the runway, taxiway system, aircraft parking area and any visual or electronic approach navigational aids. Taos Regional Airport is a dual-runway airport that is designated to serve all types of general aviation and regional jet aircraft up to 60,000 pounds Single Wheel Gear (SWG). The Airport is served by a primary runway, crosswind runway, two full length parallel taxiways and two aircraft parking aprons. Existing airside facilities are further described within this section and are depicted in **Figure 2-6.**



Source: Armstrong Consultants, Inc.

Figure 2-6 Existing Airside Facilities

2.6.1 Runway System

Runways are a defined rectangular surface on an airport, prepared or suitable for the landing or takeoff of aircraft. The runway configuration relates to the number and orientation of runways. The number of runways provided at an airport depends largely on the volume of air traffic and prevailing wind conditions. As aircraft takeoff and land into the wind, the orientation of the runways depends primarily on the direction of the prevailing wind patterns in the area. The size and shape of the area available for development, local land-use requirements, surrounding terrain and airspace restrictions in the vicinity of the airport also will influence runway orientation.

The runway configuration at Taos Regional Airport consists of two non-intersecting asphalt runways. The primary runway, Runway 13-31 was constructed in 2017. Runway 13-31 is 8,600 feet long by 100 feet wide, with a grooved surface and medium intensity runway edge lights (MIRL), as well as paved blast pads located on each runway end. The published pavement strength is 60,000 pounds single wheel gear (SWG). The current reported Pavement Classification Number (PCN) for Runway 13-31 is 51/F/D/X/T. A PCN indicates the strength of a runway, taxiway or aircraft apron. The PCN has a minimum value of 0 and has no upper limit. The numerical value is an index to the allowable aircraft operating weight. In addition to the numerical value, the PCN is reported with four codes; R or F = pavement type; A, B, C or D = subgrade strength category; W, X, Y, or Z = maximum allowable tire pressure; T or U = pavement evaluation method. Runway 13-31 is considered to be in excellent condition.

The crosswind runway, Runway 4-22 is 5,504 feet long by 75 feet wide and has a published pavement strength of 24,000 pounds single wheel gear (SWG), and has medium intensity runway edge lights (MIRL). Runway 4-22 was originally constructed with a porous friction course (PFC) surface treatment, which is extremely aged. A paved blast pad is located at the approach end of Runway 22. The blast pad on Runway end 22 is 250’ long, which exceeds FAA standards. The current reported PCN for Runway 4-22 is 4/F/D/Y/T. The pavement on Runway 4-22 is considered to be in fair condition.

Figure 2-7 depicts Runway 13-31 following its completion.

Source: Armstrong Consultants, Inc.

Figure 2-7 Runway 13-31

2.6.2 Taxiway System

Taxiways provide aircraft access between an aircraft parking apron and corresponding runways. They are intended to expedite aircraft departures from the runway and thereby increase operational safety and efficiency.

The taxiway system at Taos Regional Airport consists of two full-length parallel taxiways to Runway 13-31 and Runway 4-22. Taxiway A is located to the west of Runway 4-22. Taxiway A includes five connector taxiways, Taxiways A1, A2, A3, A4 and A5. Taxiway A is constructed of asphalt, is unlighted, has a width of 35 feet and is in poor condition. A slurry seal was applied to the southern half of Taxiway A in 2019 as an emergency measure until sufficient funding can be attainted to complete the taxiway reconstruction.

The parallel taxiway to Runway 13-31, Taxiway B was constructed simultaneously with Runway 13-31. Taxiway B is lighted by LED edge lights and includes four connector taxiways, Taxiways B1, B2, B3 and B4, with run-up pads on both ends. Taxiway B is constructed of asphalt, has a width of 50 feet and is in excellent condition.

Taxiways are classified by a Taxiway Design Group (TDG) ranging from TDG 1 to TDG 7. The Main Gear Width (MGW) and Cockpit to Main Gear (CGM) distance are combined to determine the TDG. The TDG incorporates elements related to actual aircraft movements of a specific taxiing aircraft. The purpose of designing taxiways to a specific TDG is to allow for a certain cockpit over centerline taxiing, with pavement being sufficiently wide enough to allow for a certain amount of wander. Taxiway A at Taos Regional Airport is classified as TDG 2, while Taxiway B is designated as TDG 3.

2.6.3 Aircraft Parking Apron

An aircraft apron is typically located in the non-movement area of an airport near or adjacent to the terminal area and is usually connected to the runway via taxiways. The function of an apron is to accommodate aircraft during loading and unloading of passengers and/ or cargo. Activities such as fueling, maintenance and short to long-term parking take place on the apron. There are two aircraft parking aprons serving Taos Regional Airport. **Table 2-4** provides further details on the apron areas.

Table 2-4 Taos Regional Airport Apron Information

	Area Size	Pavement Type	Pavement Condition	Number of Tie Downs
East Apron	11, 500 S.Y.	Asphalt	Fair	24
West Apron	8,560 S.Y.	Asphalt	Fair	9

Source: Armstrong Consultants, Inc.

2.6.4 Airfield Pavement Conditions

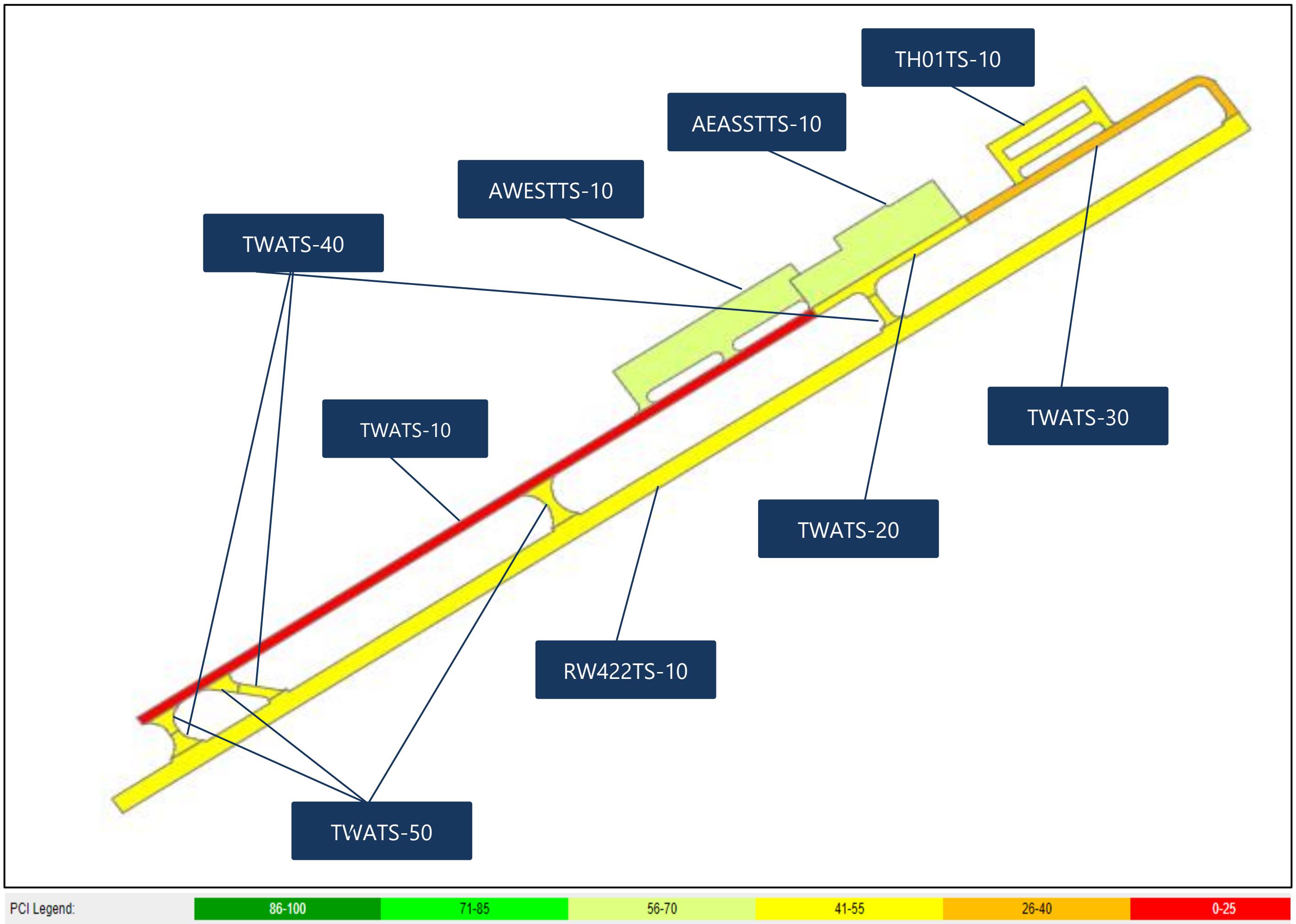
The Pavement Condition Index (PCI) is a numerical index between 0 and 100 and is used to indicate the condition of the pavement. The PCI, as outlined by the New Mexico Department of Transportation, is based on a visual survey of the pavement and a numerical value between 0 and 100 defining the pavement condition. Numerical values are grouped into three condition levels: Preventative Maintenance, Rehabilitation and Reconstruction.

Table 2-5 depicts the results of the most recent PCI inspection report for Taos Regional Airport. The specific ratings and recommended corrective actions are listed for each pavement area. Condition levels are shown in the legend of **Figure 2-8.** This data is provided by the New Mexico Department of Transportation and has not been updated since 2016, prior to the construction of Runway 13-31 and Taxiway B, which took place in 2017. As such, these pavement sections are not depicted in the information below. However, because construction was fairly recent, Runway 13-31 and Taxiway B pavement sections are considered to be in excellent condition.

Table 2-5 Pavement Condition Indexes

Location	Section Name	Pavement Condition Index	Recommended Action
East Apron	AEASSTTS-10	62	Rehabilitation/Preventative Maintenance
West Apron	AWESTTS-10	57	Rehabilitation/Preventative Maintenance
Runway 4-22	RW422TS-10	54	Rehabilitation/Preventative Maintenance
Hangar Pavement	TH01TS-10	46	Rehabilitation
Taxiway A	TWATS-10	23	Reconstruction
Taxiway A	TWATS-20	54	Rehabilitation/Preventative Maintenance
Taxiway A and A5	TWATS-30	32	Reconstruction
Taxiway A4, A2 and A1	TWATS-40	41	Rehabilitation/Reconstruction
Taxiway A3, A2 and A1	TWATS-50	50	Rehabilitation

Source: New Mexico Department of Transportation, Aeronautics Division, 2020



PCI	Repair Type
86-100	Preventive Maintenance
71-85	Preventive Maintenance
56-70	
41-55	Major Rehabilitation
26-40	Reconstruction
11-25	Reconstruction
0-10	Reconstruction

Source: New Mexico Department of Transportation, Aviation Division, 2020

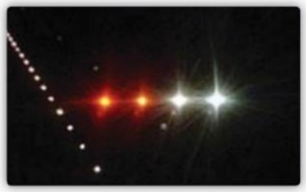
Figure 2-8 Pavement Condition Index Map

2.6.5 Airfield Lighting 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. Examples of various airfield lighting and visual aids can be found in **Figure 2-9**.

Visual Approach Slope Indicators (VASI)

Guides pilots to airports during nighttime or IFR conditions



Precision Approach Path Indicator (PAPI)

Guides pilots to airports during nighttime or IFR conditions

Runway End Identifier Lights (REIL)

Identifies runway threshold

Runway Edge Lighting

Outline runway boundary during nighttime or IFR conditions

Threshold Lights

Identifies beginning and end of usable landing area

Retroflectors

Reflectors outlining airfield pavement

Taxiway Edge Lighting

Outlines taxiway boundary during nighttime or IFR conditions

Rotating Beacon

Guides pilots to airports during nighttime or IFR conditions

Wind Direction Indicator

Provides current wind direction at airport

Segmented Circle

Identifies wind direction indicator and non-standard traffic patterns, if any

Source: Armstrong Consultants, Inc.

Figure 2-9 Typical Lighting and Visual Aids

Several common airfield lighting features of general aviation airports include:

- **Precision Approach Path Indicator (PAPI)** located on the left side of the runway, consists of two or four lights installed in a single row. A PAPI provides visual approach path guidance by emitting a series of white and red lights. These lights can be seen for up to five miles during the day and up to twenty miles at night and provides guidance to the runway touchdown zone.

- **Visual Approach Slope Indicators (VASIs)** is another type of visual approach path guidance that consist of two sets of lights and typically provides less precise visual guidance than a PAPI. One set is located at the start of the runway, while the other is twenty feet down the runway. Each set of lights are designed to appear either white or red, depending on the angle at which the lights are viewed. When an aircraft is on the glide slope, the first set of lights appears white, while the second set appears red. If an aircraft drops below the glide slope both sets appear red and if an aircraft is above the glide slope both sets will indicate white.

- **Approach Lighting Systems (ALS)** are installed at the approach end of a runway and consists of a series of lights that provide the pilot with transition from the aircraft instruments to the visual runway environment. For traditional ground-based NAVAID approaches (e.g., Very High Frequency Omni-Directional Range (VOR), ILS, NDB) an ALS is required for visibility minimums of less than 3/4-mile. Types of ALS include: Approach Lighting System with Sequenced Flashing Lights (ALSF), Simplified Short-Approach Light System with Sequenced Flashing Lights/Runway Alignment Indicator Lights (SSALF/SSALR), Medium-Intensity Approach Lighting System with Sequenced Flashing Lights/Runway Alignment Indicator Lights (MALSF/MALSR), Lead-in Light System (LDIN), Runway Alignment Indicator Lights (RAIL) and Omnidirectional Approach Lighting System (ODALS).

- A **rotating beacon** is used to guide pilots to lighted airports with a sequence of yellow, green and/or white lights. Most general aviation airports are considered to be civilian land airports, consisting of alternating white and green lights or a water airport, consisting of alternating white and yellow lights. A beacon is normally operated from dusk until dawn. If the beacon is on during other hours, it typically indicates that the airport is operating under instrument flight rules due to poor visibility conditions.

- **Runway edge lights** consist of a single row of white lights bordering each side of the runway, outlining the runway edges during periods of darkness or low visibility. Runway edge lights are classified into three types according to the intensity of light of which they are capable of producing: they include High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL) and Low Intensity Runway Lights (LIRL). Both HIRLs and MIRLs have variable intensity settings, whereas LIRLs have only one. Instrument runway lights include yellow edge lights on the last 2,000 feet of runway to visually inform pilots of the amount of runway remaining. At most non-towered airports, runway lights are activated by pilot-controlled lighting which is utilized by transmitting a series of "clicks" on the radio transmitter to activate and control lighting intensity settings.

- **Runway End Identifier Lights (REIL)** consist of a pair of synchronized high intensity white flashing lights placed on each side of the runway threshold to enable rapid identification of the runway threshold.

- **Runway markings** vary depending on whether the runway is used exclusively for visual flight rule operations (VFR) or instrument flight rule (IFR) operations. A visual runway is typically marked with the runway designator numbers and a dashed white centerline. Threshold bars and aiming point markings are added to provide non-precision instrument markings. A precision instrument runway includes touchdown zone markings.

- **Threshold lights** consist of a single row of green lights used to indicate the beginning of the usable landing surface. These lights are two-directional and appear red from the opposite end of the runway to mark the end of the usable runway.

- **Taxiway edge lights** consist of a single row of blue lights bordering each side of the taxiway. These lights mark the edge of the taxiways and guide aircraft from the runway to the ramp or apron area.

- **Retroreflectors**, used in lieu of taxiway lighting, consists of a single row bordering each side of the taxiway of reflective tape mounted on a pole.

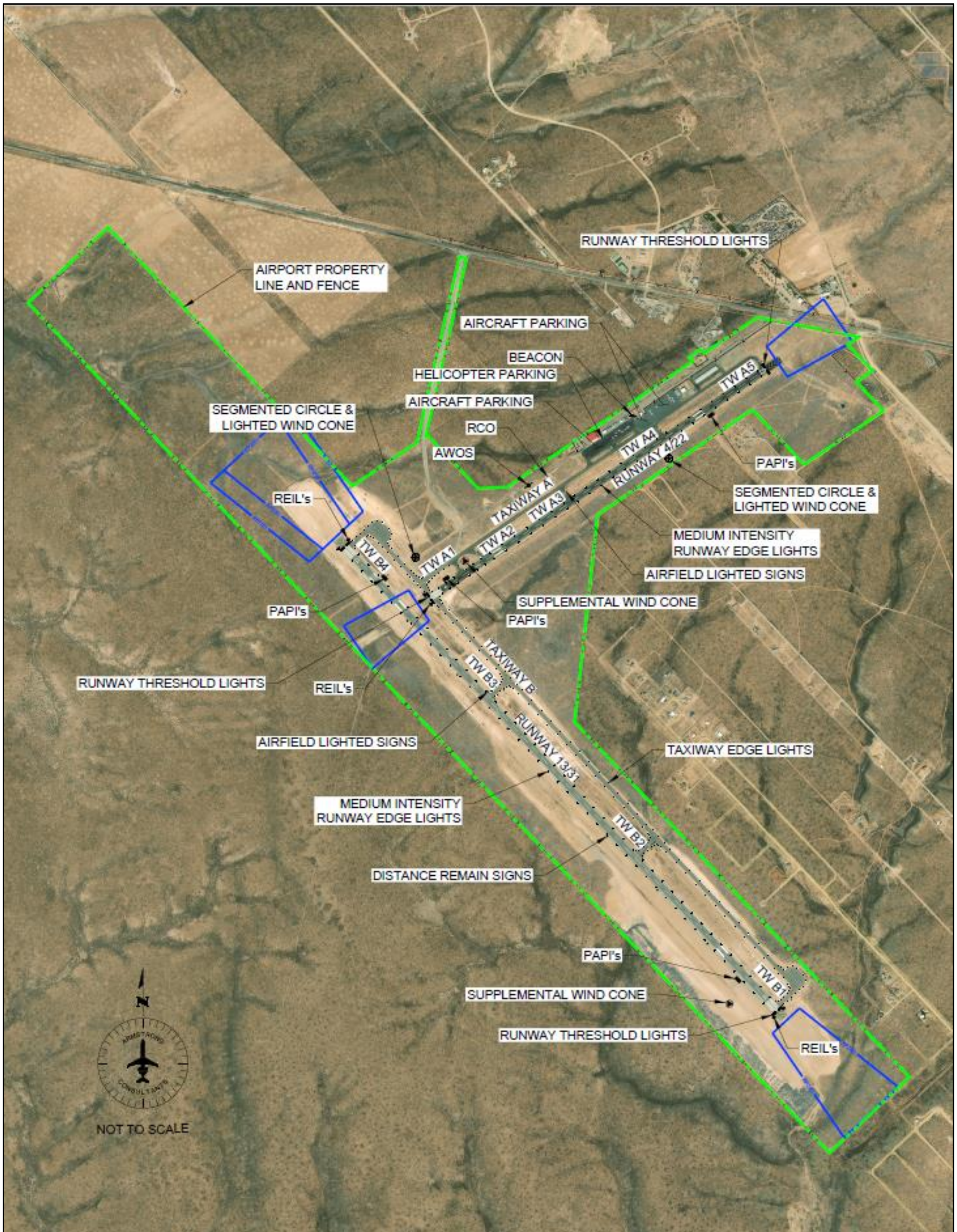
- A **wind direction indicator** consists of a windcone, wind tee or tetrahedron. A windcone aligns itself into the wind as the wind blows through a truncated cloth aligning itself with the wind indicating both wind direction and approximate velocity. The tail of a wind tee aligns itself in the wind similar to that of a weather vane. A tetrahedron may either swing around to align the small end pointing into the wind or it may be manually positioned to show landing direction. Wind indicators can be lighted for use during periods of darkness and low visibility.

- A **segmented circle** is located around the wind direction indicator. The segmented circle has two purposes, including identifying the location of the wind direction indicator and identifying non-standard traffic patterns.

- **Lighted signs** provide airfield location and direction information to pilots.

Taos Regional Airport is equipped with both precision instrument and non-precision instrument runway markings, which are in good condition. Runway 13 end is marked with precision runway markings, Runway 4 and 31 ends are marked non-precision, and Runway 22 end is marked with basic runway markings. The airfield lighting and visual aids at Taos Regional Airport consist of pilot-controlled Medium Intensity Runway Lights (MIRLs) on Runway 13-31 and 4-22, Runway End Identifier Lights (REILs) on Runway 4, 13, and 31 ends and threshold lights. Four-light Precision Approach Path Indicators (PAPIs) are located on all ends of Runway 13-31 and Runway 4-22. The airfield lighting and visual aids are in good condition. There is a lighted wind cone with segmented circle and a rotating airport beacon that operates from sunset to sunrise and both are in good condition.

The rotating beacon is located to the east of the existing SRE building. A lighted wind cone with segmented circle is located to the east of midfield of Runway 4-22. There is a second lighted wind cone located near the west end of Runway 13. Taxiway B is lighted with Medium Intensity Taxiway Lights (MITLs) and guidance signage. Taxiway A is outlined with retroreflectors. **Figure 2-10** depicts the visual aids available Taos Regional Airport.



Source: Armstrong Consultants, Inc.

Figure 2-10 Visual Aids at Taos Regional Airport

2.6.6 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 Omni-directional Range (VORs), Very High Frequency Omni-directional Range with Tactical Information (VOR-TAC), Non-directional Beacons (NDBs), Instrument Landing System (ILS), and Tactical Air Navigational Aids (TACANs), as examples. Taos Regional Airport is served by the Taos VOR-TAC, located 14.7 miles to the northwest, and used to assist with navigation and instrument approaches. The Taos VOR-TAC operates on a frequency of 117.60 MHz. Taos Regional Airport is currently served by two instrument approach procedures, listed in **Table 2-6**.

Table 2-6 Taos Regional Airport Instrument Approach Procedures

Runway End	Approach Procedure	Visibility Minimums/ Lowest Ceiling (AGL)	Approach Type
4	GPS/RNAV	1 Statute Mile/ 412′	Non-Precision
13	GPS/RNAV	3/4 Statute Mile/ 200′	Non-Precision
Circling	VOR/DME-B*	1 ¼ Statute Mile/905′	Circling

Source: Federal Aviation Administration, 2020
*VOR Pending Deactivation

2.6.7 Air Traffic Control

Taos Regional Airport is an uncontrolled airport, as there is no air traffic control tower (ATC) located at the airport. Instead, pilots coordinate their position in the airport traffic pattern over the radio via the Common Traffic Advisory Frequency (CTAF, 122.8 MHz) assigned to the Airport. In-flight air traffic control services are provided by FAA's Albuquerque Center Air Route Traffic Control Center (ARTCC) and Albuquerque Flight Service Station (FSS). Enroute radar and coverage for Taos Regional Airport is provided by Albuquerque ARTCC. The Albuquerque FSS provides additional weather data and other pertinent weather information to pilots on the ground and enroute.

The Airport also operates a Remote Communications Outlet (RCO), located to the east of the AWOS. As defined by the FAA, an RCO is an unmanned transmitter/receiver facility, remotely controlled by air traffic control (ATC) personnel, which aids in expanding the range of communication of the air traffic facility. The primary function of an RCO is to provide ground-to-ground communication between ATC and pilots located at a satellite airport, providing information pertaining to enroute clearance, issuing departure authorizations and acknowledging instrument flight rules (IFR) cancellations or departure/landing times. **Figure 2-11** depicts the RCO at Taos.

Source: Armstrong Consultants, Inc.

Figure 2-11 RCO Facility at Taos

2.6.8 Weather Reporting Systems

Automated Surface Observing Systems (ASOS) are owned and maintained by the National Weather Service (NWS). Automated Weather Observation Systems (AWOS) typically are owned and maintained by the airport. Both use various sensors, a voice synthesizer and a radio transmitter to provide real-time weather data. An ASOS/AWOS reports on-site meteorological conditions such as altimeter setting, wind (direction, gusts and speed), temperature, dew point, visibility, cloud, and ceiling. The ASOS/AWOS transmits over a VHF frequency or the voice portion of the NAVAID. The transmission can be received within 25 nautical miles of the site or above 3,000 feet above ground level (AGL).

The Weather reporting system at Taos Regional Airport includes an Automated Weather Observing System 3 with precipitation and thunderstorm reporting (AWOS- 3 P/T). This system generally reports the following parameters: barometric pressure, altimeter setting, wind speed and direction, temperature and dew point in degrees Celsius, density altitude, visibility, and cloud ceiling, while also having the additional capabilities of reporting temperature and dew point in degrees Fahrenheit, present weather, icing, lighting, sea level pressure and precipitation accumulation. The AWOS information transmits on a frequency of 132.975 MHz and is published on aeronautical charts as well as in the airport facilities directory. The AWOS can also be accessed via telephone at (575) 758-5663.

2.6.9 FAA Design Standards and Airport Reference Code (ARC)

FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design* provides design standards for use in the design of civil airports. Each runway and operational area serving the particular design aircraft must be identified. Generally, runway standards are related to aircraft approach speed, aircraft wingspan and designated or planned approach visibility minimums. Each runway is assigned a Runway Design Code (RDC). The Aircraft Approach Category (AAC), Airplane Design Group (ADG) and approach visibility minimums (runway visual range - RVR) are combined to determine the RDC. The RDC provides the information needed to determine design standards that apply. The first component, depicted by a letter is the AAC and relates to aircraft approach speed (operational characteristic). The second component, depicted by a Roman numeral, is the ADG and relates to either the aircraft wingspan or tail height (physical characteristics) whichever is most restrictive. The third component relates to the visibility minimum expressed by RVR values in feet which include 1,200, 1,600, 2,400, 4,000, and 5,000 feet. The third component will read "VIS" for runway designed with visual approaches only.

The Airport Reference Code (ARC) of the airport signifies the airport's highest RDC. The ARC is used for planning and design purposes only and does not limit the aircraft that may be able to operate safely on the airport. **Table 2-7** lists the RDC criteria.

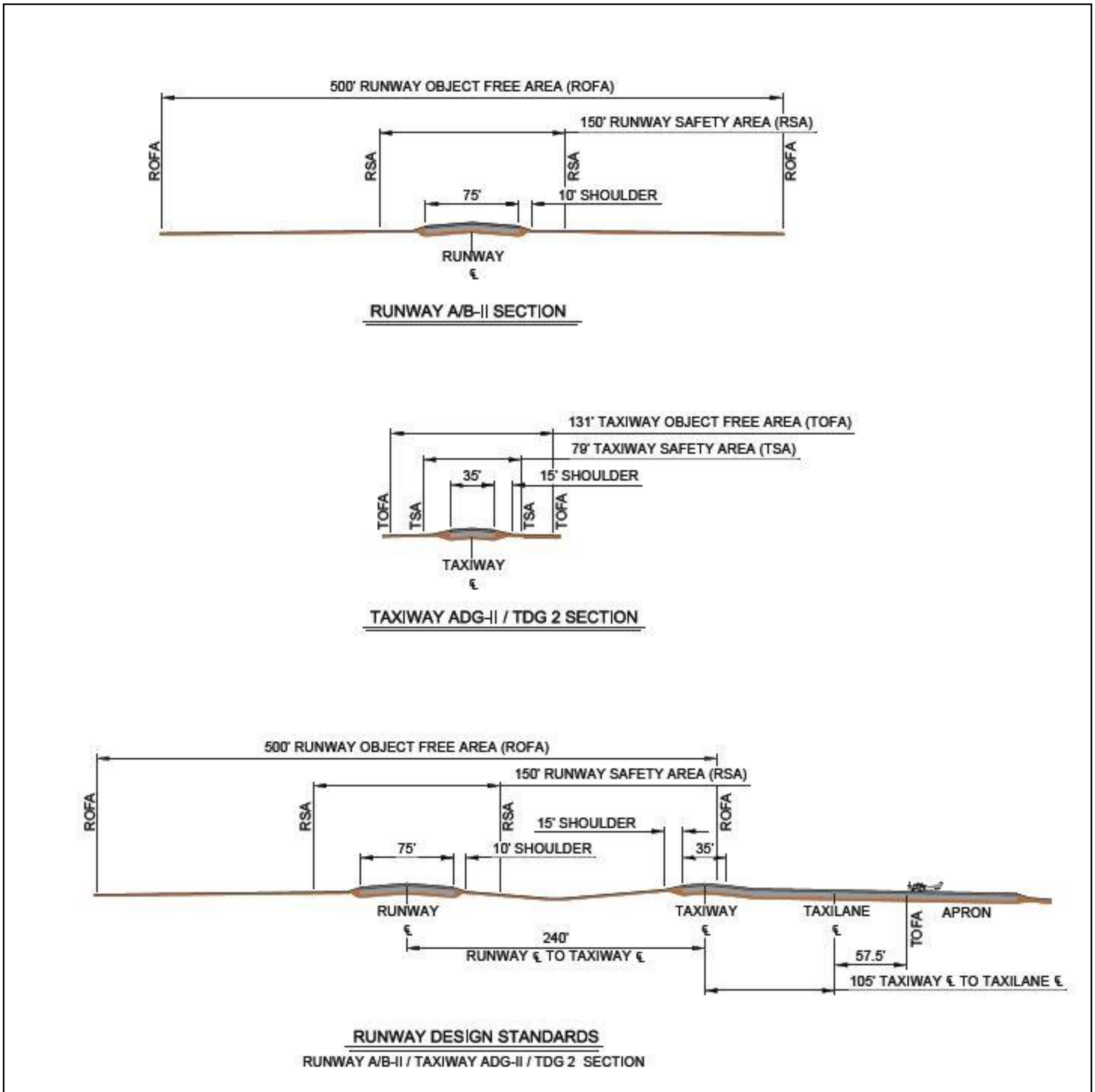
Table 2-7 Runway Design Code

Approach Category	Approach Speed	
Category A	less than 91 knots	
Category B	91 to 120 knots	
Category C	121 to 140 knots	
Category D	141 to 165 knots	
Category E	166 knots or more	
Design Group	**Wingspan**	**Tail Height**
Group I	< than 49 feet	< than 20 feet
Group II	49 to 78 feet	20 to 29 feet
Group III	79 to 117 feet	30 to 44 feet
Group IV	118 to 170 feet	45 to 59 feet
Group V	171 to 213 feet	60 to 65 feet
Group VI	214 to 261 feet	66 to 79 feet
Runway Visual Range (in feet)	**Flight Visibility Category (Statute Mile)**	
VIS	Visual	
5,000	1-mile or greater	
4,000	Lower than 1 mile but not lower than 3/4 mile (APV ≥ 3/4 but < 1 mile)	
2,400	Lower than 3/4 mile but not lower than 1/2 mile (CAT - I PA)	
1,600	Lower than 1/2 mile but not lower than 1/4 mile (CAT - II PA)	
1,200	Lower than 1/4 mile (CAT - III PA)	

Source: FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design*

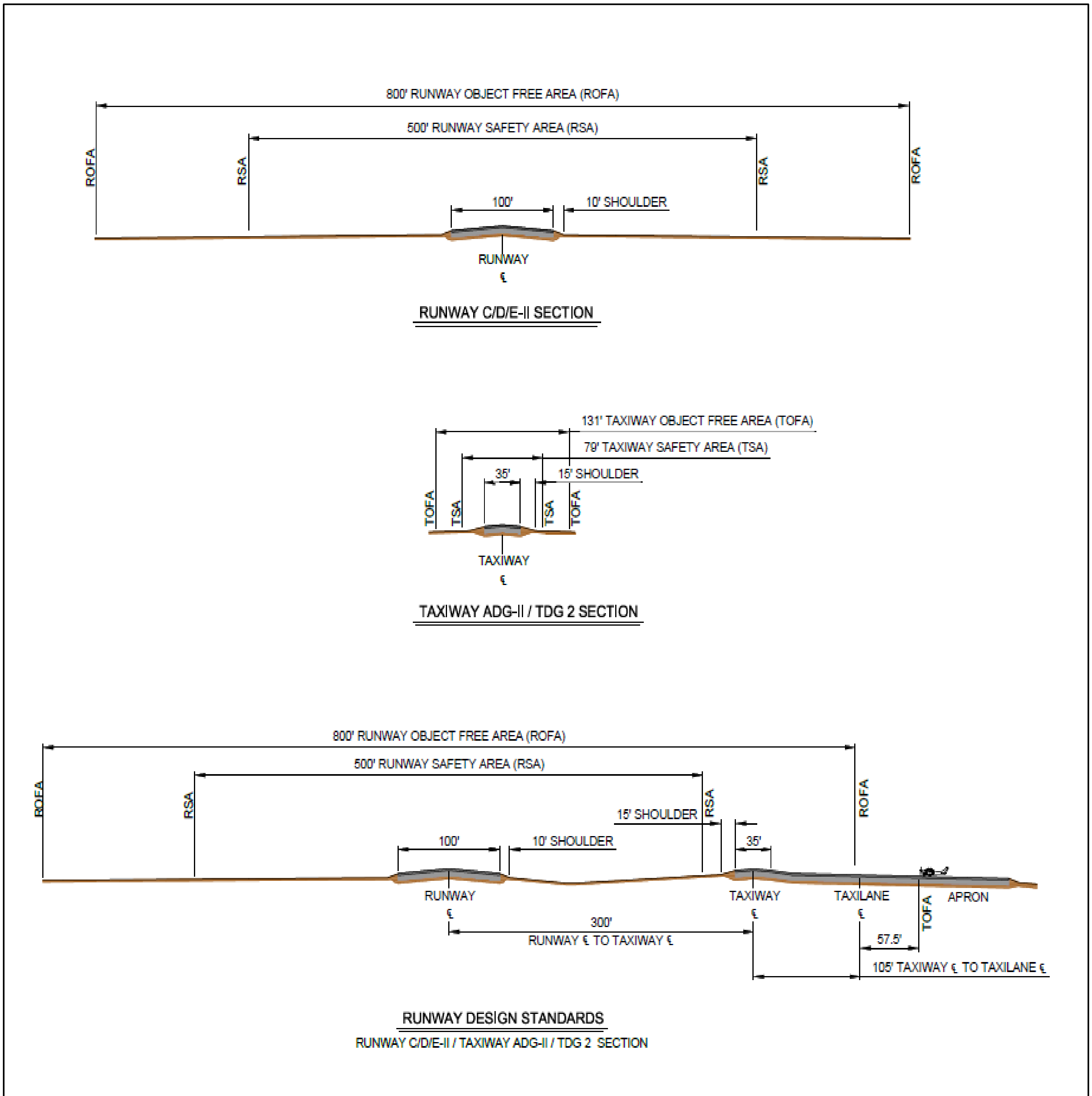
The current RDC for Runway 13-31 and ARC for Taos Regional Airport is C-II-4000. The RDC and ARC for Runway 4-22 is B-II-5000. The design aircraft for the airport is the Canadair CL-600.

Figure 2-12 and **Figure 2-13** depicts the FAA design standards as they apply to the Airport. **Figure 2-14** depicts Taos Regional Airport's current FAA design standards.



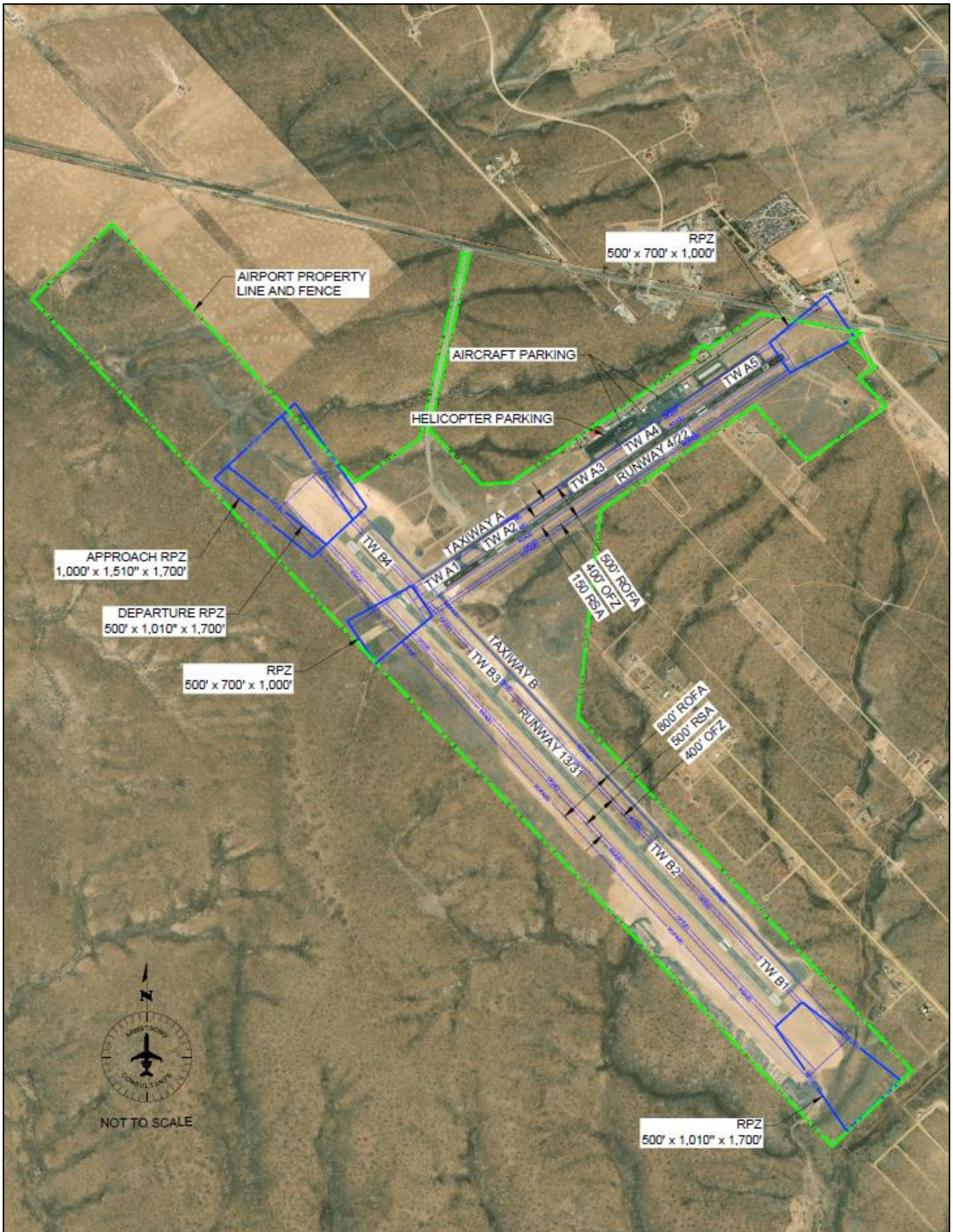
Source: FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design*

Figure 2-12 RDC B-II FAA Design Standards



Source: FAA Advisory Circular 150/5300-1 3A, Change 1, *Airport Design*

Figure 2-13 RDC C-II FAA Design Standards



Source: Armstrong Consultants, Inc.

Figure 2-14 Existing Design Standards at SKX

2.6.9.1 Safety Areas

Runway and taxiway safety areas (RSAs and TSAs) are defined surfaces surrounding the runway and taxiways that are prepared specifically to minimize bodily injury and reduce damage to aircraft and property in the event of an under-shoot, over-shoot or excursion from a runway or taxiway.

According to FAA Advisory Circular 150/5300-13A, Change 1, 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 (SRE) and aircraft rescue and firefighting (ARFF) equipment and the occasional passage of aircraft without causing structural damage to the aircraft.
- Free of objects, except for objects that need to be located in the runway or taxiway safety area because of their function.

Taos Regional Airport meets all RSA and TSA standards.

2.6.9.2 Obstacle Free Zones and Object Free Areas

The runway Obstacle Free Zone (OFZ) is a three-dimensional volume of airspace that supports the transition of ground to airborne aircraft operations. The clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function. The OFZ is similar to the Part 77 Primary Surface, as discussed in the next section, insofar that it represents the volume of space longitudinally centered on the runway. The Inner-approach Obstacle Free Zone is a defined volume of airspace centered on the approach area. It applies only to runways with an ALS. It performs the same function as the OFZ and extends outwards 200 feet from the approach end of the runway threshold along the ALS.

The Object Free Areas (OFA) are two-dimensional areas centered on the ground on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by remaining clear of objects. This excludes objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

The Taos Regional Airport meets standards for OFA and OFZ requirements.

2.6.9.3 Displaced Thresholds

A displaced threshold is a threshold located at a point other than that of the physical end of the runway. The displaced portion of the runway maybe used for takeoff but not for landing. Landing aircraft may only use the displaced area on the opposite end for roll out.

There are no displaced thresholds at the Taos Regional Airport.

2.6.9.4 Runway Protection Zone

The Runway Protection Zone (RPZ) is trapezoidal in shape and centered on the extended runway centerline that is intended to protect persons and property from aircraft that land short or overrun the runway. It begins 200 feet beyond the end of the area usable for takeoff or landing. The RPZ dimensions are functions of the design aircraft, type of operation and visibility minimums.

While it is desirable to clear all objects from the RPZ, uses that FAA may permit include:

- Farming that meets minimum buffers, irrigation channels as long as it does not attract birds;
- Airport service roads, as long as they are not public roads and are directly controlled by the airport operator; or
- Underground facilities and unstaffed NAVAIDs and facilities, such as equipment for airport facilities that are considered fixed-by-function in regard to the RPZ

All new land uses within the RPZ must be evaluated and approved by the FAA. **Table 2-8** further describes the RPZs at the Taos Regional Airport.

Table 2-8 Taos Regional Airport RPZ Information

Runway Protection Zone	Dimension	Ownership	Conveyance	Existing Land Uses
Runway 13 Approach	1,000′ x 1,510′ x 1,700′	Town of Taos	Fee Simple/Uncontrolled	Open Space
Runway 13 Departure	500′ x 1,010′ x 1,700′	Town of Taos	Fee Simple	Open Space
Runway 31	500′ x 1,010′ x 1,700′	Town of Taos	Fee Simple	Open Space
Runway 4	500′ x 700′ x 1,000′	Town of Taos	Fee Simple	Open Space
Runway 22	500′ x 700′ x 1,000′	Town of Taos	Fee Simple/ Uncontrolled	Open Space US Highway 64 Commercial Property

Source: Armstrong Consultants, Inc.

2.6.9.5 Runway Visibility Zone

As defined by Advisory Circular 150/5300-13A, *Airport Design*, the runway visibility zone (RVZ) is an area formed by imaginary lines connecting the line of sight points between two intersecting runways. The objective of the RVZ is to keep the area maintained free and clear of obstructions for the purpose of providing an unobstructed view of aircraft arriving to/from the intersection of the two runways. Runway 13-31 and 4-22 at Taos, while on transverse paths, do not physically intersect. As such, the FAA has determined that an RVZ for Taos is optional, provided the Airport maintains the area free of obstructions. The Airport has elected to not establish an RVZ.

2.6.9.6 Summary of FAA Design Standards at Taos Regional Airport

Table 2-9 lists the current FAA design standards conditions at Taos Regional Airport, as listed in FAA AC 150/5300-13A, Change 1, *Airport Design*.

Table 2-9 Existing Design Standards

	Runway 13	Runway 31	Runway 4	Runway 22
Runway Design Code (RDC)	C-II-4000	C-II-VIS	B-II-5000	B-II-VIS
Runway Centerline to Parallel Taxiway Centerline	300′ (400′ Actual)		240′ (250′ Actual)	
Runway Centerline to Aircraft Parking Apron	400′		250′ (300 Actual)	
Runway Width	100′		75′	
Runway Safety Area Width	500′		150′	
Runway Safety Area Length Beyond RW End	1,000′		300′	
Runway Object Free Area Width	800′		500′	
Runway Object Free Area Length Beyond RW End	1,000′		300′	
Runway Obstacle Free Zone Width	400′		400′	
Runway Obstacle Free Zone Length Beyond RW End	200′		200′	
Approach Runway Protection Zone	1,000′ x 1,510′ x 1,700′	500′ x 1,010′ x 1,700′	500′ x 700′ x 1,000′	500′ x 700′ x 1,000′
Departure Runway Protection Zone	500′ x 1,010′ x 1,700′	500′ x 1,010′ x 1,700′	500′ x 700′ x 1,000′	500′ x 700′ x 1,000′
Runway Blast Pad	150′ x 120′	150′ x 120′	150′ x 95	250′ x 95′
Taxiway System	**Taxiway A**		**Taxiway B**	
Taxiway Design Group (TDG)	2		3	
Airplane Design Group (ADG)	II		II	
Taxiway Width	35′		50′	
Taxiway Safety Area Width	79′		118′	
Taxiway Object Free Area Width	131′		131′	
Taxilane Object Free Area Width	115′		115′	
Runway Centerline to Aircraft Hold Lines	200′		300′	

Source: FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design*

2.6.10 Airspace Surfaces

Title 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace,* (Part 77) includes several imaginary surfaces that are used as a guide to provide a safe and unobstructed operating environment for aviation. These surfaces, which are typical for civilian airports, are shown in **Figure 2-15**. The primary, approach, transitional, horizontal and conical surfaces identified in 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 Part 77 runway category criteria.

For the purpose of this section, a utility runway is a runway that is constructed for and intended for use by propeller driven aircraft of a maximum gross weight of 12,500 pounds or less. A visual runway is a runway intended for the operation of aircraft using only visual approach procedures (no instrument-aided approach). A non-precision instrument runway is a runway with an approved or planned straight-in instrument approach procedure that has no existing or planned precision instrument approach procedure. A precision runway is served by an instrument procedure with vertical and horizontal guidance that allows for lower visibility landings.

Runway 4 and 13 are considered non-precision instrument, larger than utility runways for Part 77 purposes.

Runway 22 and 31 are considered visual, larger than utility runways for Part 77 purposes.

The Part 77 airspace surfaces for these classifications are defined as follows:

- The **primary surface** is an imaginary surface of specific width, longitudinally centered on a runway. The primary surface extends 200 feet beyond each end of the paved surface of runways, but does not extend past the end of unpaved 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 is 1,000 feet for precision instrument runways, 250 feet for visual-utility runways and 500 feet for visual larger than utility and non-precision instrument runways. The existing primary surface width for Taos Regional Airport is 1,000 feet for Runway 13-31 and 500 feet for Runway 4-22.

- 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, with approach gradients of 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 Part 77 runway classification criteria. At Taos Regional Airport, the approach surface for Runway end 13 is 1,000 feet by 4,000 feet by 10,000 feet at a slope of 34:1. The approach surface for Runway end 4 is 500 feet by 3,500 feet by 10,000 feet at a slope of 34:1. The approach surface for both Runway end 31 and Runway end 22 is 500 feet by 1,500 feet by 5,000 feet at a slope of 20:1.

- 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.

- The **horizontal surface** is considered necessary for the safe and efficient operation of aircraft in the vicinity of an airport. As specified in 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. The existing horizontal surface arc at Taos Regional Airport is 10,000 feet.

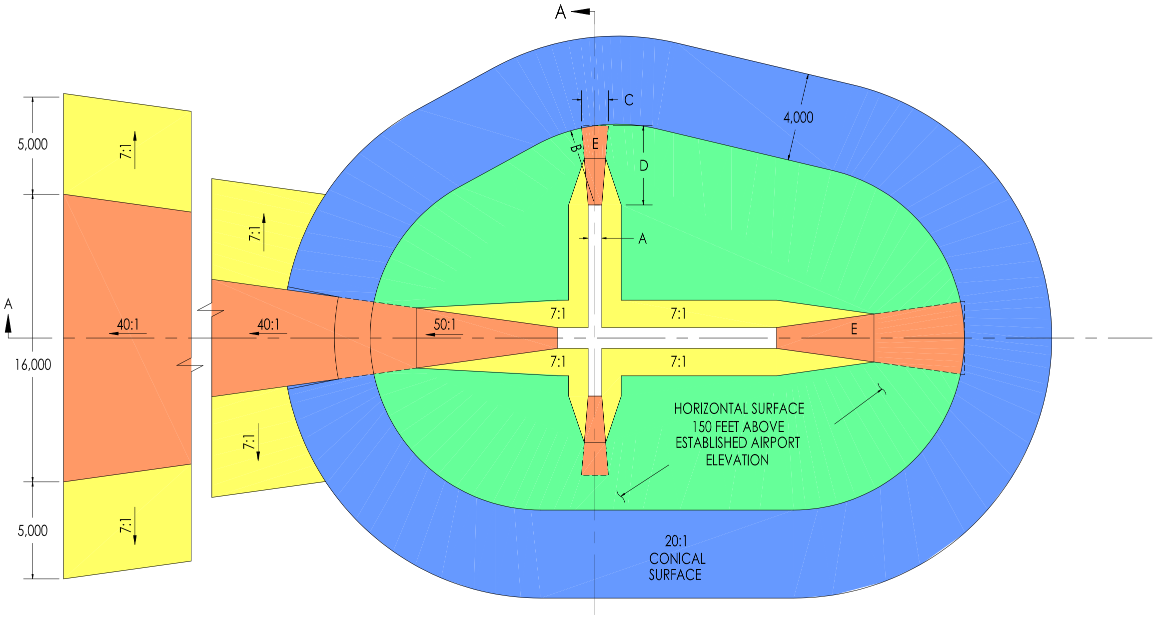
- The **conical surface** extends outward and upward from the periphery of the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.

Table 2-10 summarizes the current Part 77 surfaces described above for the Taos Regional Airport.

Table 2-10 Part 77 Surfaces

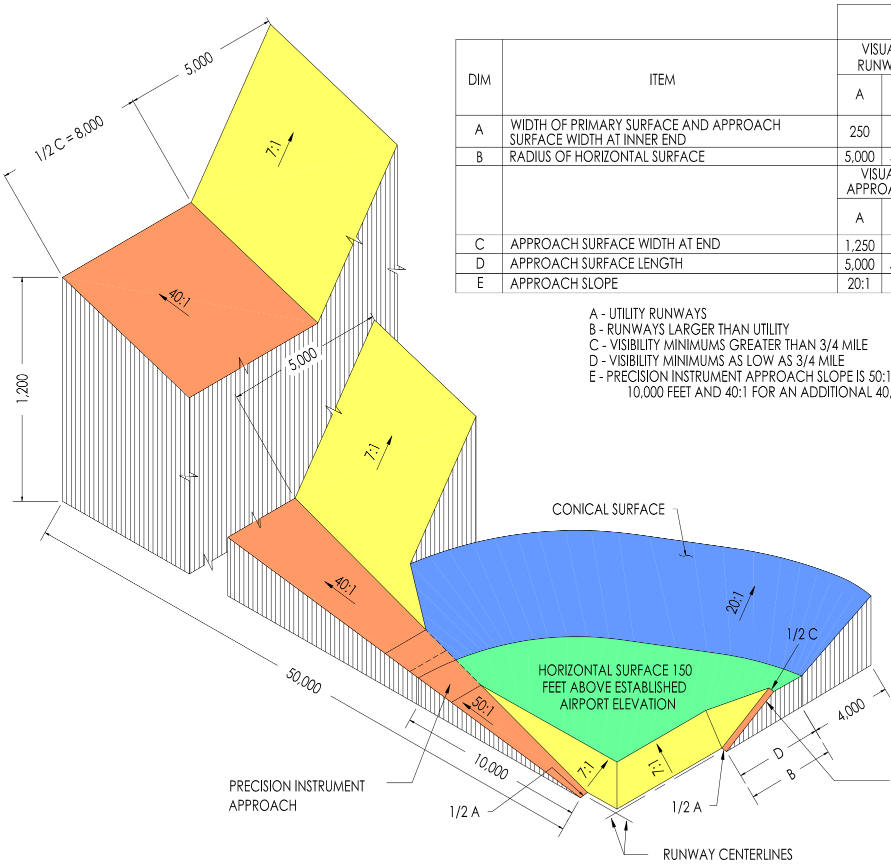
Surface	Dimensions
Primary Surface width	RW 13-31: 1,000' RW 4-22: 500'
Primary Surface beyond Runway end	200'
Approach Surface dimensions	RW 13: 1,000' x 4,000' x 10,000' RW 31: 500' x 1,500' x 5,000' RW 4: 500' x 3,500' x 10,000' RW 22: 500' x 1,500' x 5,000'
Approach Surface slope	RW 13: 34:1 RW 31: 20:1 RW 4: 34:1 RW 22: 20:1
Transitional Surface slope	7:1
Horizontal Surface radius	10,000'

Source: Title 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*



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



SURFACE LEGEND

- PRIMARY
- APPROACH
- HORIZONTAL
- CONICAL
- TRANSITIONAL

ISOMETRIC VIEW OF SECTION A-A

Source: Federal Aviation Administration, 2020

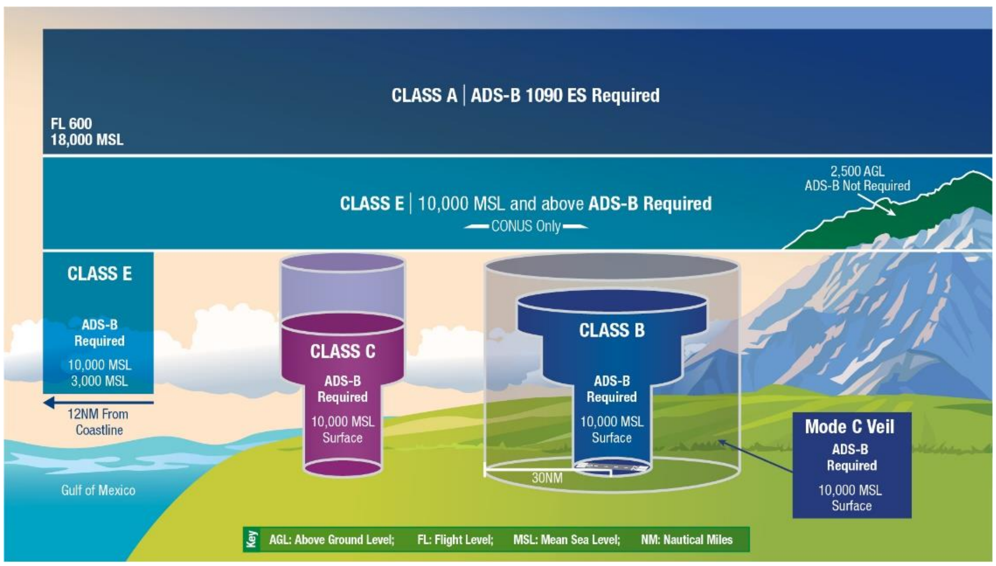
Figure 2-15 Part 77 Surfaces

2.6.11 Surrounding Airspace

2.6.11.1 National Airspace System

The National Airspace System consists of various classifications of airspace regulated by the FAA. Airspace classification is necessary to ensure the safety of all aircraft utilizing the facilities during periods of inclement weather, with the primary function of airspace classification being the separation of IFR traffic from VFR traffic. Pilots flying in controlled airspace are subject to air traffic control requirements and must either follow VFR or IFR regulations. These regulations, which include combinations of operating rules, aircraft equipment and pilot certification, vary depending on the class of airspace and are described in 14 CFR Part 91, *General Operating and Flight Rules*.

Figure 2-16 depicts the various airspace classifications. **Figure 2-17** shows the airport is located within Class E airspace. Class E airspace requires pilots to comply with weather requirements and certain air traffic control procedures for IFR operations.

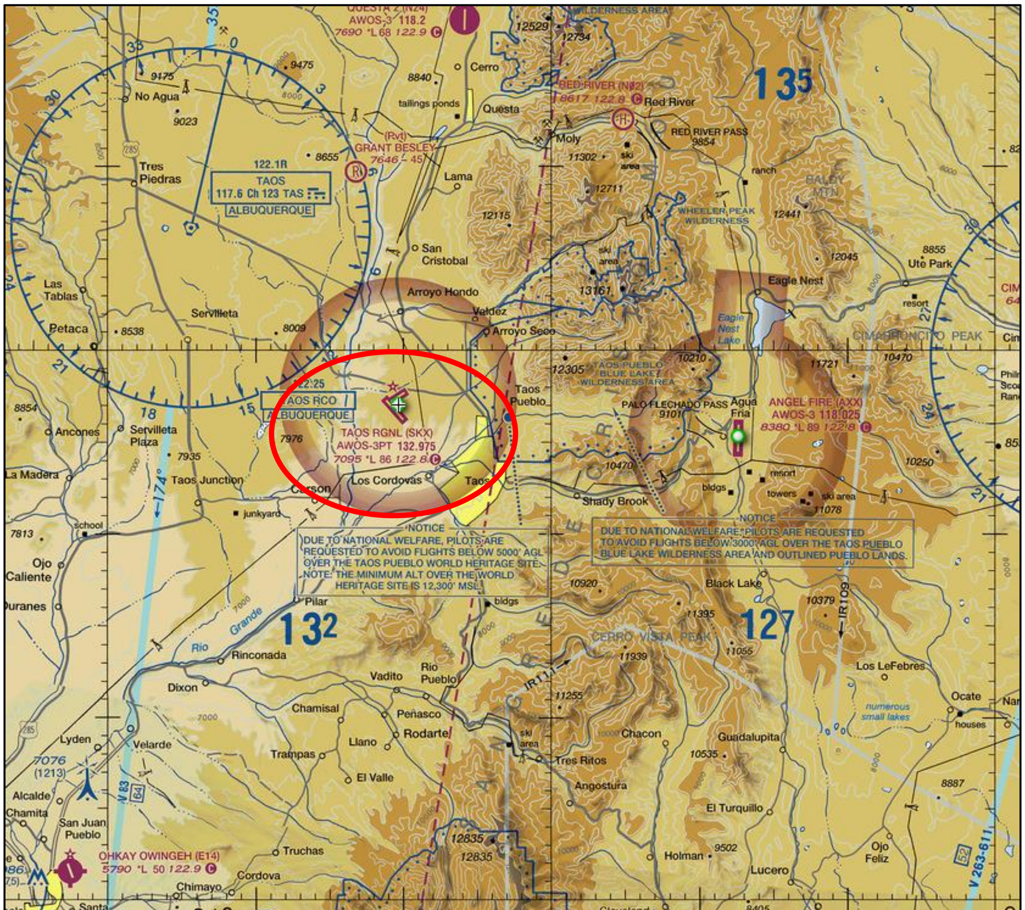


If you fly in this airspace you must be equipped with ADS-B

Airspace	Altitude
Class A	All
Class B	Generally, from surface to 10,000 feet mean sea level (MSL) including the airspace from portions of Class Bravo that extend beyond the Mode C Veil up to 10,000 feet MSL (e.g. LAX, LAS, PHX)
Class C	Generally, from surface up to 4,000 feet MSL including the airspace above the horizontal boundary up to 10,000 feet MSL
Class E	Above 10,000 feet MSL over the 48 states and DC, excluding airspace at and below 2,500 feet AGL
	Over the Gulf of Mexico at and above 3,000 feet MSL within 12 nautical miles of the coastline of the United States
Mode C Veil	Airspace within a 30 NM radius of any airport listed in Appendix D, Section 1 of Part 91 (e.g. SEA, CLE, PHX) from the surface up to 10,000 feet MSL

Source: Federal Aviation Administration, 2020

Figure 2-16 Airspace Classification



Source: www.skyvector.com, 2020

Figure 2-17 VFR Sectional Chart

There is one victor airway, Victor V83, routed via the TAOS VORTAC located to the west of the Airport (victor airways are low altitude flight paths between ground-based navigational equipment known as VHF Omni-directional Receivers or VORs).

Taos Regional Airport is an uncontrolled airport; which means navigation and traffic awareness relies on the pilots using the airport. Traffic patterns at the Airport include standard left hand traffic for all Runways. Pilots in the area can communicate or announce their intentions via the CTAF frequency of 122.8 MHz.

To the east of the Airport is voluntary no-fly zone (NFZ), which is located over the vicinity of the Taos Pueblo World Heritage Site and Blue Lake Wilderness Area. The NFZ is the result of detailed noise analysis studies conducted during the EIS process, in which it was determined that the flight tracks created by the new runway would have adverse noise impacts to the cultural property. The World Heritage Site is considered to be a noise sensitive property. As such, aircraft are requested to avoid overflight of the Taos Pueblo below 5,000’ AGL and below 3,000’ AGL over the Blue Lake Wilderness Area.

2.7 Existing Landside Facilities at Taos Regional Airport

The landside facilities of an airport consist of those facilities that are not included on the airfield. Examples of such landside facilities include any structure adjoining the airfield, terminal buildings, hangars, ground access routes to and from the airport, automobile parking areas, airport fencing, utilities, fuel provisions and snow removal equipment storage facilities. **Figure 2-18** illustrates the existing landside facilities.

Source: Armstrong Consultants, Inc.

Figure 2-18 Existing Landside Facilities

2.7.1 Terminal Building

Airport passenger terminal buildings are used to transfer passengers between aircraft and ground transportation and provide facilities for passengers enplaning and deplaning aircraft. The terminal building houses ticket counters for airlines serving the airport, including space for issuing tickets, transferring checked baggage, security screening of checked bags, area for the Transportation Security Administration (TSA) personnel to screen passengers and sterile waiting area for passengers that have been processed through the security checkpoint. Terminal buildings also have gates to provide passengers access to and from the aircraft. The number of gates varies depending on the volume of airline traffic utilizing the airport. Terminal buildings also provide baggage claim areas which usually include baggage carousels for passengers to retrieve checked baggage upon arrival at the airport. The terminal building is typically utilized by airport management for office space and by airport tenants including rental car companies, restaurants and gift shops.

The size of these different areas varies depending on the amount of traffic the facility receives. Large commercial service airports have several concourses which may be connected by walkways, sky-bridges or underground tunnels. Concourses can be set up to accommodate one or two specific airlines depending on the size. Smaller commercial service airports typically share one satellite concourse with gates. Smaller regional aircraft may be accessed through either a jet-bridge or through ground loading.

The existing passenger terminal building at Taos Regional Airport is approximately 1,430 square feet. The building primarily serves to process departing and arriving passengers for Taos Air. The building houses seating for approximately 30 passengers. Additional features of the building include a moveable check-in podium, two single-stall restrooms, a storage room, and wireless internet. Additional restroom facilities are available in a portable trailer located immediately west of the terminal building and can be accessed via the aircraft parking apron. All baggage handling for the terminal is conducted via push cart. The terminal building does not include any security screening areas for passengers or luggage. The structure is considered to be in good condition. **Figure 2-19** depicts the terminal building at Taos.

Source: Armstrong Consultants, Inc.

Figure 2-19 Terminal Building

2.7.2 Fixed Base Operator and Pilot Services

A fixed base operator (FBO) is usually a private enterprise that leases land/hangars from the airport sponsor on which to provide services to based and transient aircraft. The extent of the services an FBO provides varies from airport to airport; but typically, these services include aircraft fueling, minor maintenance and repair, aircraft rental and/or charter services, flight instruction, pilot lounge, flight planning facilities, aircraft tie down and/or hangar storage.

The Taos FBO facility is located adjacent to the southwest portion of the aircraft parking apron and services are provided by Taos Aviation Services. Taos Aviation Services is a full-service FBO, open during business hours 7 days a week with afterhours service also available. FBO services at Taos includes access to catering services, courtesy and rental cars, pilots lounge/flight planning area, professional line service, heated hangar space, tie-downs, and competitively priced fuel. The FBO facilities include a 100' x 100' heated hangar leased from the Town.

2.7.3 Hangar Facilities

Existing facilities at Taos Regional Airport include a mix of twenty-three T-hangar structures with three conventional box hangar structures. The hangars at the Airport include a combination of private and Town owned facilities. The hangars are in good to fair condition. As previously mentioned, the EIS delayed facility expansion and development at the Airport, including the construction of private hangars. The Airport has a list of entities waiting to develop hangars at the Airport. This will be further described in Chapter 3, *Forecast of Aviation Demand* and Chapter Four, *Facility Requirements*.

2.7.4 Access Routes and Signage

The Airport can be accessed by traveling U.S. Highway 64 and taking a left from the west bound lane to a marked access road which leads directly to the Airport, which is located approximately eight miles northwest of the Town of Taos. The access road is paved and is in poor condition. There is signage at the road's entrance identifying the Taos Regional Airport.

2.7.5 Ground Transportation

Taos Regional Airport has several ground transportation options. Rental car providers for the Airport include Hertz Rental Cars, Enterprise Rent a Car, and Wheeler Peak Rent a Car. Public transportation options are also available; there are four shuttle services that operate within the Town. These include Taos Ski Valley Airports Shuttle, Taos Rides LLC Shuttle Service, Mountain View Shuttle, and Taos Taxi and Tours. Also available within Taos are Uber and Lyft.

2.7.6 Automobile Parking

Automobile parking facilities are necessary for originating and terminating airport users and visitors. It is important that vehicle parking is adequate to serve the needs of all airport users and visitors. The Airport has three designated areas for automobile parking. Directly to the west of the FBO building is paved lot approximately 900 S.Y. in size, which is utilized by the Airport's rental car operators. Beyond this is a 975 S.Y. unpaved/gravel lot designated as a long-term parking area. The third lot is found to the east of the Terminal building and is a 3,500 S.Y. paved lot which is used by Taos Air for airline personnel, passengers and guests.

2.7.7 Utilities

Available utilities at Taos Regional Airport include propane, electric, well water, septic and telecommunications. Telecommunication services are provided by private vendors. Water is provided from a municipal well located in the space behind the existing terminal buildings (Well Site No. RG-16227). There is also a monitoring well on the airport and a water well site that was attempted to be drilled, but was not completed.

2.7.8 Fencing

The primary purpose of airport fencing is to prevent inadvertent intrusions by persons or animals entering airport property. Airport fencing also provides an increased level of safety and security for the airport. Fencing is commonly installed along the perimeter of the airport property and outside of any safety areas or below all imaginary surfaces as defined by FAA Advisory Circular 150/5300-13A, Change 1 and Federal Aviation Regulation Part 77. The airport apron and terminal building area has six-foot chain link fencing encompassing it. The remainder of the Airport perimeter is surrounded by three strand barb wire. There are three electric vehicle access security gates throughout the terminal area. **Figure 2-20** depicts the fencing at Taos Regional Airport.

Source: Armstrong Consultants, Inc.

Figure 2-20 Airport Fencing

2.7.9 Fuel Facilities

The Airport owns one 12,500-gallon Jet-A Fuel tank and one 12,500-gallon 100 Low Lead AvGas tank, which is leased to the FBO. The fuel system at Taos is above ground and in good condition. Aircraft refueling is conducted via fuel tanks operated by the FBO, with AvGas also available 24 hours for self-serve.

2.7.10 Emergency and Security Services

Title 14 Code of Federal Regulations (CFR) Part 139 requires the FAA to issue airport operating certificates to airports that serve scheduled air carrier operations in aircraft with more than 9 seats but less than 31 seats. The operating certificate serves to ensure safety in air transportation and airports operating under Part 139 are required to meet safety standards. One such requirement is to provide aircraft rescue and firefighting (ARFF) services during those air carrier operations which require a Part 139 certificate. Taos Regional Airport is currently not classified as a Part 139 Airport. Should the Airport obtain Part 139 classification in the future, the Airport would be required to meet certain criteria and be able to provide a level of emergency response. Part 139 establishes the level of ARFF equipment and agents required for an airport accommodating scheduled commercial air service by Part 121 carriers. The ARFF Index level required is determined by the longest passenger aircraft with an average of five daily departures serving the airport as follows:

- Index A – Aircraft less than 90 feet in length;
- Index B – Aircraft at least 90 feet but less than 126 feet;
- Index C – Aircraft at least 126 feet but less than 159 feet;
- Index D – Aircraft at least 159 feet but less than 200 feet;
- Index E – Aircraft greater than 200 feet in length

At the present time, the Airport is served by the Taos County Sheriff Department and the Taos County Volunteer Fire District/EMS. The Taos fire district is comprised of approximately 28 volunteer and career personnel dispersed throughout three fire stations. The nearest hospital serving the Airport is the Holy Cross Hospital, located approximately 11 miles (21 minutes) southeast of the Airport. The nearest Fire Station is approximately 7 miles (12 minutes) southeast of the Airport. **Figure 2-21** depicts some of the firefighting apparatus serving the community of Taos.

Source: www.taosgov.com, 2020

Figure 2-21 Taos Fire Engines

2.7.11 Snow Removal and Maintenance Equipment

Snow removal and airfield maintenance is conducted by the Airport. A dedicated piece of Snow Removal Equipment (SRE) and a 1,500 S.F. SRE building are located at the Airport. The Town of Taos provides secondary snow removal assistance to the Airport when needed and able. **Figure 2-22** depicts the Kodiak snowplow with a dump bed, acquired by the Airport in 2010.

Source: Armstrong Consultants, Inc.

Figure 2-22 Snow Removal Equipment

2.8 Land Use Compatibility

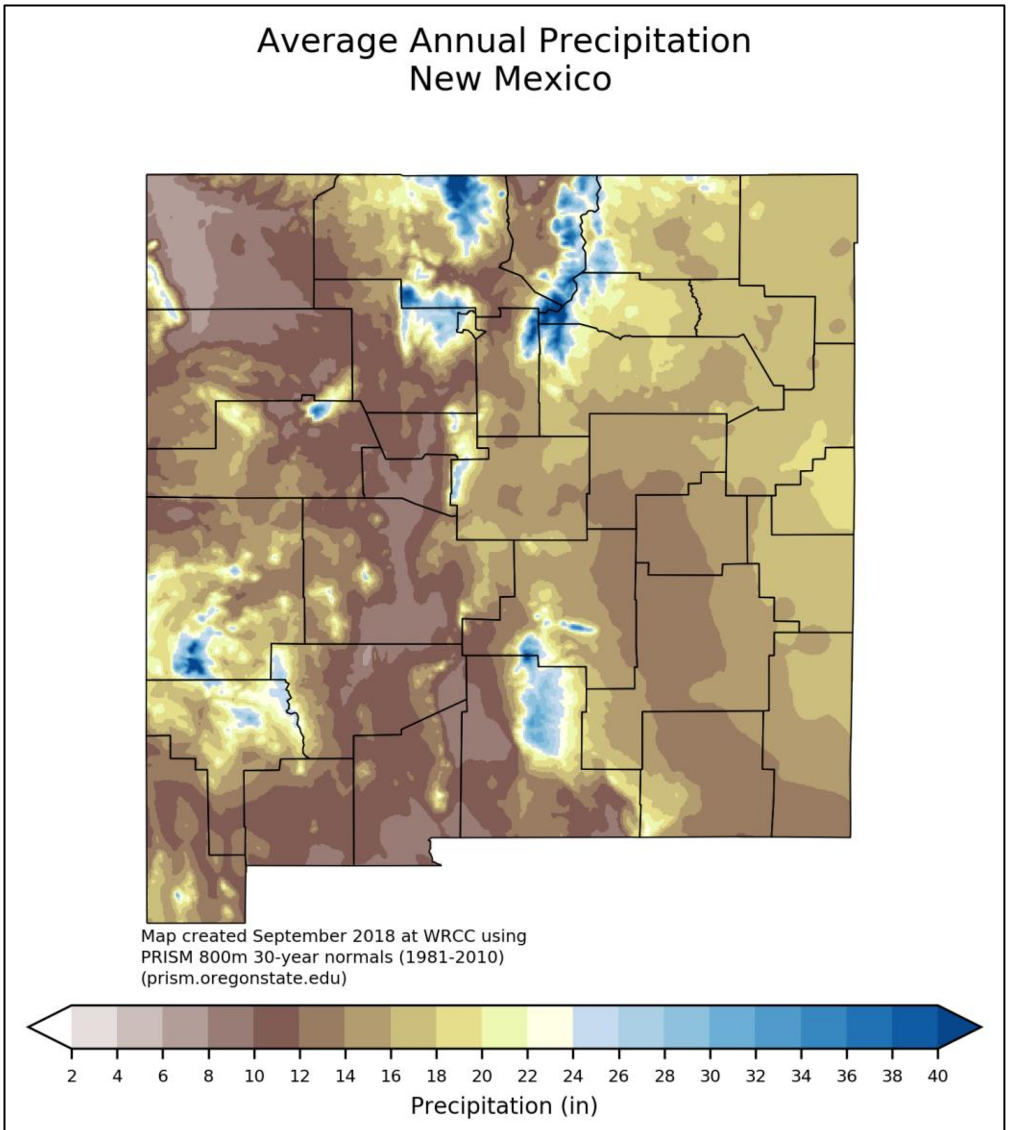
The FAA recommends that airport sponsors protect the areas surrounding an airport from incompatible development. Incompatible development includes those land uses which would be sensitive to aircraft noise or over flight, such as residences, schools, churches and hospitals and those uses which could attract wildlife and cause a hazard to aircraft operations such as certain agriculture crops, landfills, ponds and wastewater treatment facilities. The height of objects surrounding airports also needs to be considered in order to avoid airspace impacts and future instrument approach procedures. The area surrounding the Airport is generally considered to be compatible.

Taos County has zoned the Airport and the area in the immediate vicinity as County Rural. As outlined in the Taos City Ordinance of Land Use Regulations, lands designated as County Rural are any area not within an official Community Zone, Neighborhood Zone or Planned Unit Development Zone hereunder or any incorporated municipality of federal lands, state lands, or Indian lands. Among the allowable land use for this classification is single-family development and cottage industries.

2.9 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. Temperatures combined with airport elevation also have an impact on aircraft performance capabilities.

As depicted in **Figure 2-23**, the Taos Regional Airport is located within an area that receives between 10-12 inches of precipitation a year, according to the Western Regional Climate Center.



Source: Western Regional Climate Center, 2020

Figure 2-23 New Mexico Precipitation Map

2.9.1 Local Climatic Data

Ceiling and visibility conditions are important considerations for an airport as the occurrence of low ceiling and/or poor visibility limits the use of the airport until conditions improve. According to the Western Regional Climate Center, Taos Regional Airport receives an average of 12.3 inches of rainfall per year, with snowfall averaging 28.9 inches. Temperatures range from an average maximum temperature of 85.6 degrees Fahrenheit in July to an average minimum temperature of 9.7 degrees Fahrenheit in January. A summary of the climate at the Airport is shown in **Table 2-11**.

Table 2-11 Temperature and Precipitation

Month	Mean Maximum Temperature (Fahrenheit)	Mean Minimum Temperature (Fahrenheit)	Precipitation (Inches)	Snowfall (Inches)
January	39.9	9.7	0.67	7.1
February	45.5	16.4	0.60	5.0
March	53.1	22.9	0.80	4.6
April	62.7	29.6	0.88	1.6
May	72.1	37.1	1.19	0.4
June	82.2	45.6	0.90	0.0
July	85.6	51.1	1.65	0.0
August	83.4	49.9	1.85	0.0
September	76.5	42.8	1.29	0.0
October	65.9	32	1.08	0.5
November	52.4	20.9	0.72	2.8
December	41.7	12.2	0.67	6.9
Annual	63.4	30.9	12.30	28.9

Source: Western Regional Climate Center, retrieved 2020

2.9.2 Runway Wind Coverage

An analysis of wind is essential in deciding the desired alignment and configuration of the runway system. It is beneficial to align runways as closely as practicable in the direction of the prevailing winds. Aircraft land and takeoff into the wind and, therefore, can only tolerate limited crosswind components (winds that blow perpendicular to the runway centerline). The maximum allowable crosswind depends on the aircraft size, design characteristics and pilot proficiency. **Table 2-12** shows allowable crosswind components for aircraft according to their Airport Reference Code.

Table 2-12 Allowable Crosswind Component

Crosswind (knots)	Airport Reference Code
10.5	A-I, B-I
13.0	A-II, B-II
16.0	A-III, B-III, C-I through D-III
20.0	A-IV through D-VI

Source: FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design*

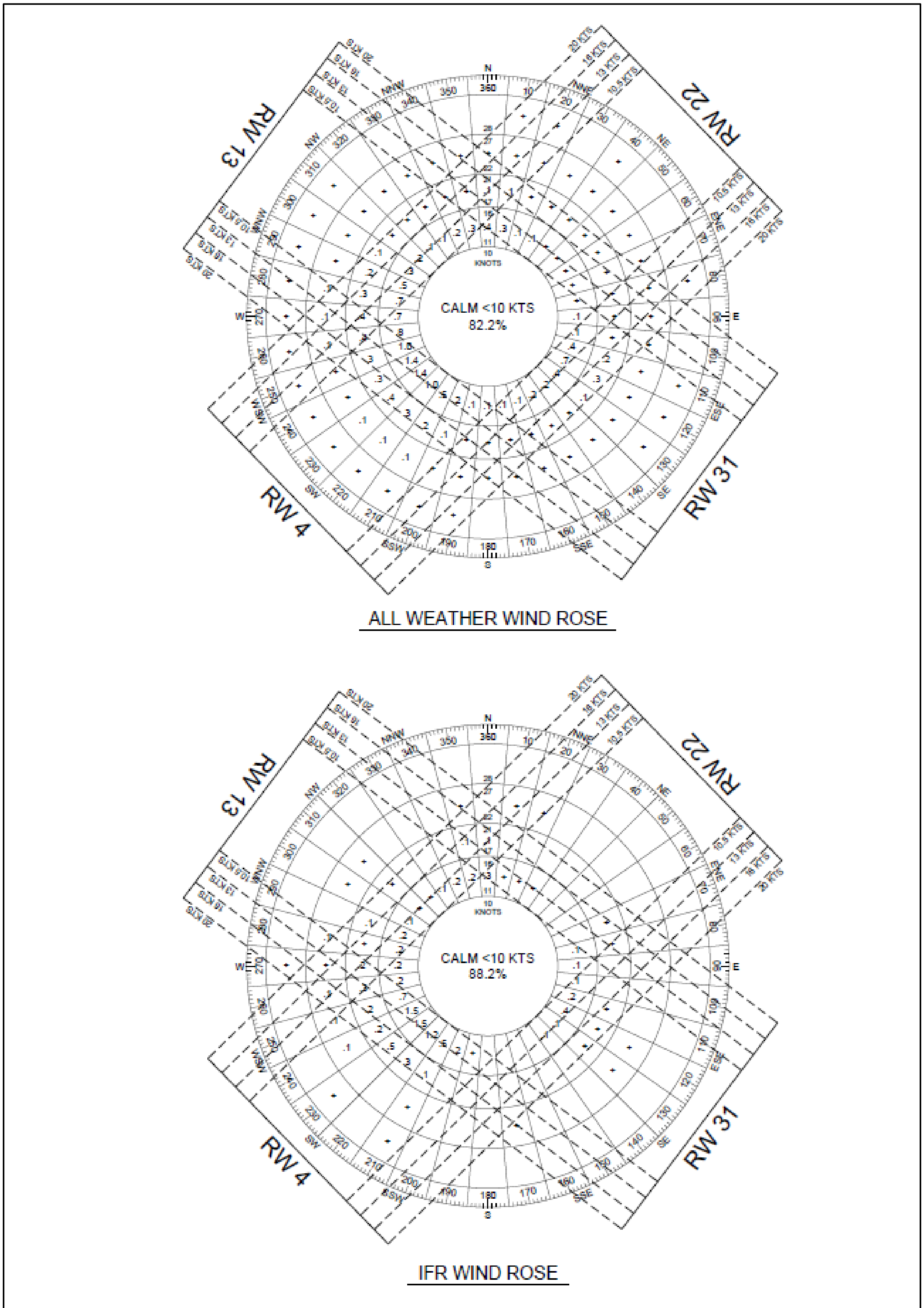
FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design*, recommends that a runway should be oriented so that it yields 95 percent wind coverage under stipulated crosswind coverage defined by the ARC. If a single runway alignment cannot meet the recommended 95 percent wind coverage then construction of an additional runway may be advisable.

Wind directional data was determined using the AWOS at Taos Regional Airport with observations from 2008 to 2018. **Table 2-13** lists the wind data information from the AWOS. **Figure 2-24** depicts the existing wind rose for Taos Regional Airport.

Table 2-13 All Weather Wind Data for Taos Airport

Crosswind (knots)	Runway 13-31 Percent of Coverage	Runway 4-22 Percent of Coverage	Combined Coverage
10.5	89.69%	93.61%	98.66%
13.0	93.43%	96.43%	99.63%
16.0	97.38%	98.76%	99.93%
20.0	99.25%	99.76%	99.99%

Source: Taos Regional Airport AWOS, 2008-2018, Number of Observations: 243,970



Source: Taos Regional Airport, AWOS, 2009-2018

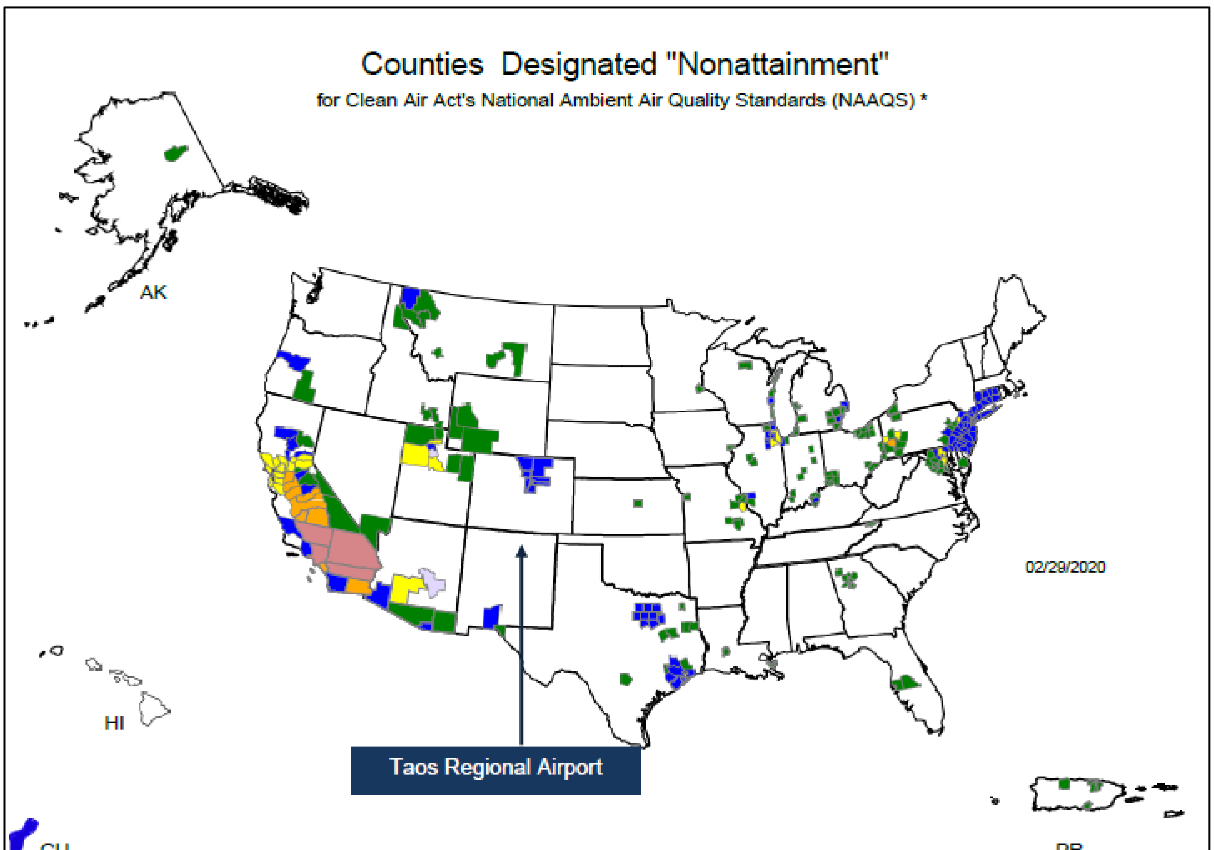
Figure 2-24 Taos Regional Airport All Weather Windrose

2.10 Environmental Overview

The purpose of the environmental inventory is to identify key environmental resources that may be affected by potential airport development. The data compiled in this section will be used throughout the report when evaluating potential airport development alternatives and identifying any potential environmental impacts and environmental related permits that may be required for recommended development projects.

2.10.1 Air Quality

The Clean Air Act was passed in part to define the standards of pollutants that may be harmful to public health and welfare. National Ambient Air Quality Standards (NAAQS) were developed by the Environmental Protection Agency (EPA) in compliance with the Clean Air Act which identifies six principle pollutants that could have adverse effects on the public. Areas which exceed the acceptable standard for these pollutants are considered to be non-attainment. As depicted within **Figure 2-25**, the airport is located within an attainment area. The air quality map below identifies counties that are designated as Nonattainment for 1 or more NAAQS. Taos County is considered to be within attainment with NAAQS.



Source: Environmental Protection Agency, 2020

Figure 2-25 Non-Attainment Map

2.10.2 Department of Transportation Act – Section 4(f)

There are no publicly owned public parks, recreation areas, wildlife or waterfowl refuges of National, State or Local significance or land from a historic site of National, State or Local significance located on airport property. The nearest Section 4(f) property, as listed on the National Register of Historic Places, is the Taos Pueblo World Heritage Site, located approximately nine miles east of the Airport. Potential impacts to the site resulting from Airport development were thoroughly studied during the EIS process and steps to mitigate those adverse impacts resulting from such development were outlined in the ROD. Among those conditions are:

- There would be no visual, audible or vibration effects that would diminish the integrity of the Taos Pueblo World Heritage Site as a result of aircraft on the flight tracks.
- Any undertakings will not induce development or growth that would result in a change in the setting or character of the use of the World Heritage Site.
- The Town of Taos will, in the unlikely event that historic properties are discovered during construction, cease activity in the area and contact the New Mexico State Historic Preservation Officer (SHPO), Taos Pueblo, and other appropriate agency officials within 48 hours of the discovery.

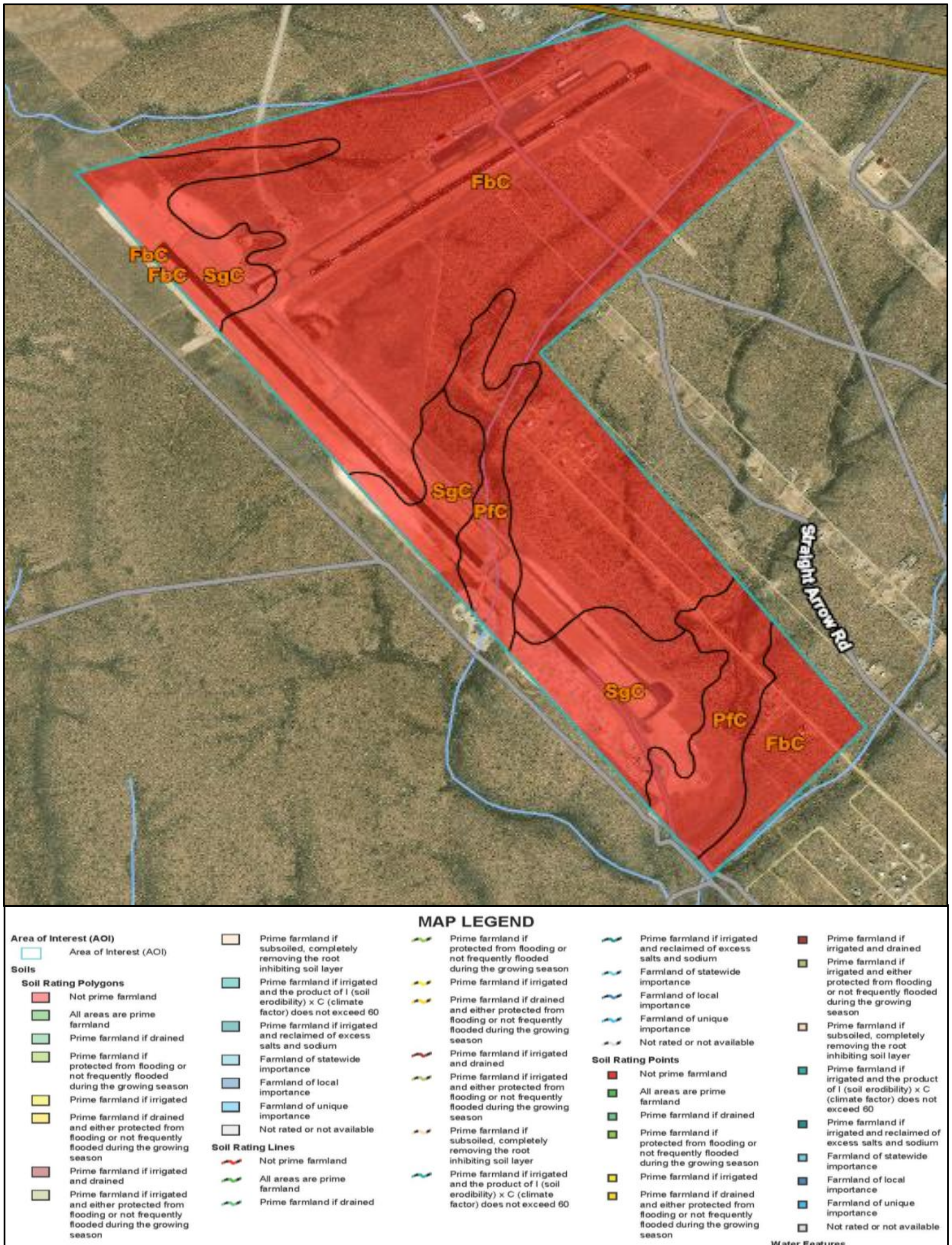
Although unlikely, should any impacts to the World Heritage Site be anticipated as a result of the development proposed in later chapters, Agency consultation between the parties in the Section 106 process, which includes the SHPO and/or the Tribal Historic Preservation Officer (THPO) if on tribal lands, and the Advisory Council on Historic Preservation (ACHP), will be coordinated.

Furthermore, while not directly on Airport property, within the surrounding vicinity of the Airport are several wilderness and recreation areas. These include, Taos Blue Lake (38 miles southeast of the Airport), Latir Peak Wilderness Area (32 miles north of the Airport), Wheeler Peak Wilderness Area (21 miles northeast of the Airport), and Wild Rivers Recreation Area (39 miles north of the Airport) which is within the Rio Grande del Norte National Monument. These areas are considered to be Section 4(f) properties. The Department of Transportation Act (DOT Act) of 1966 included a special provision - Section 4(f) - which stipulated that the Federal Highway Administration (FHWA) and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply- (1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm tot hep ark, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

A voluntary no-fly zone has been established over the Taos Pueblo and Blue Lake Wilderness Area as a result of biological and noise analysis studies conducted during the EIS. See **Section 2.6.1** of this chapter for information regarding that.

2.10.3 Farmlands

The U.S. Department of Agriculture has rated the Taos Regional Airport and surrounding lands as not Prime Farmland, as shown in **Figure 2-26**.

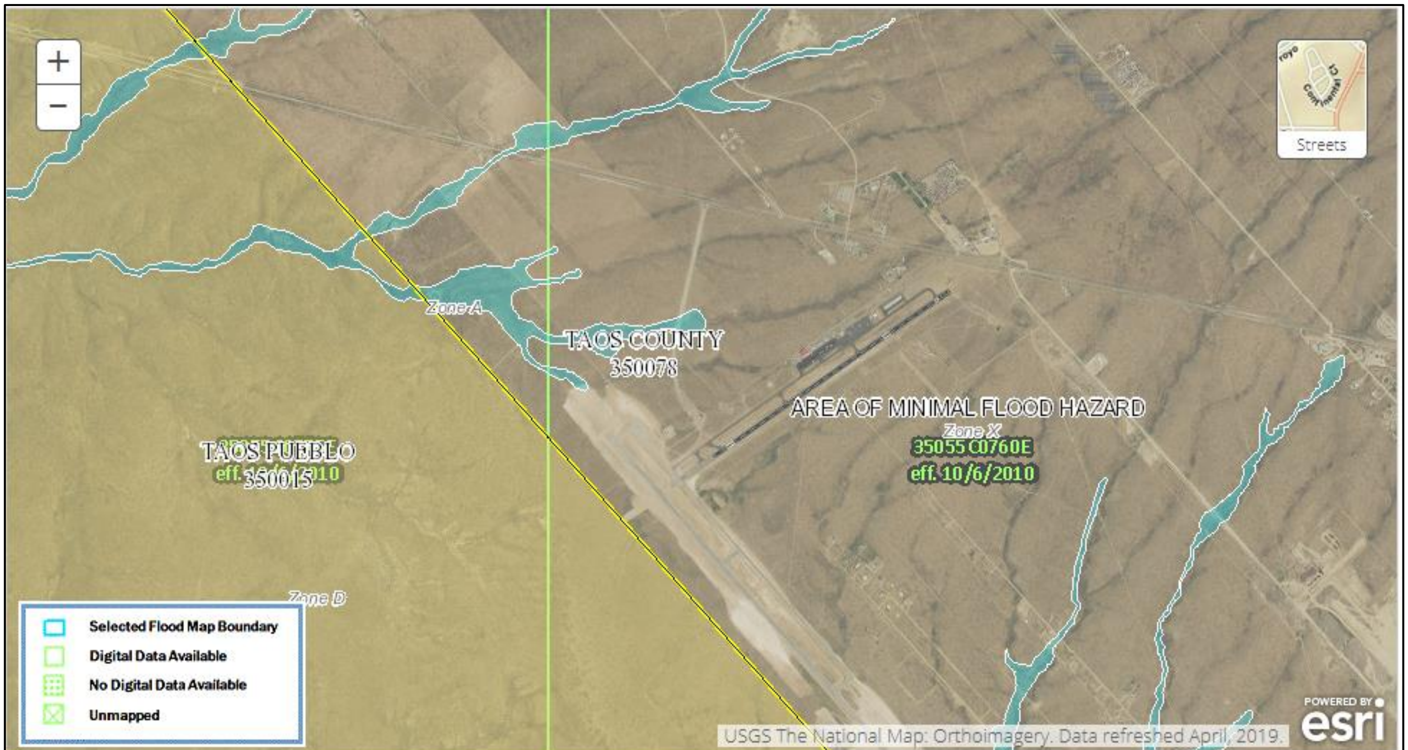


Source: U.S. Department of Agriculture, 2020

Figure 2-26 Farmland Classification Map

2.10.4 Floodplains

Portions of the Airport and surrounding areas have been mapped for floodplains by the Federal Emergency Management Agency (FEMA). The majority of the mapped areas have been designated as Zone X, 0.2 percent chance flood hazard, areas of one percent annual chance flood with average depth less than one square mile. **Figure 2-27** depicts FEMA floodplains mapped within the area.



Source: Federal Emergency Management Agency, 2020

Figure 2-27 Floodplains Classification

2.10.5 Fish, Wildlife and Plants

The U.S. Fish and Wildlife Service database was researched to obtain an Official Threatened and Endangered Species List for the area encompassing the Taos Regional Airport. There was a total of five endangered, threatened or candidate species for Taos County as listed in **Table 2-14**.

Table 2-14 Threatened and Endangered Species

Common Name	Critical Habitat Relative to Airport Property	Status
Canada Lynx	Critical habitat outside of airport property	Threatened
New Mexico Meadow Jumping Mouse	Critical habitat outside of airport property	Endangered
Mexican Spotted Owl	Critical habitat outside of airport property	Threatened
Southwestern Willow Flycatcher	Critical habitat outside of airport property	Endangered
Yellow-billed Cuckoo	Critical habitat outside of airport property	Threatened

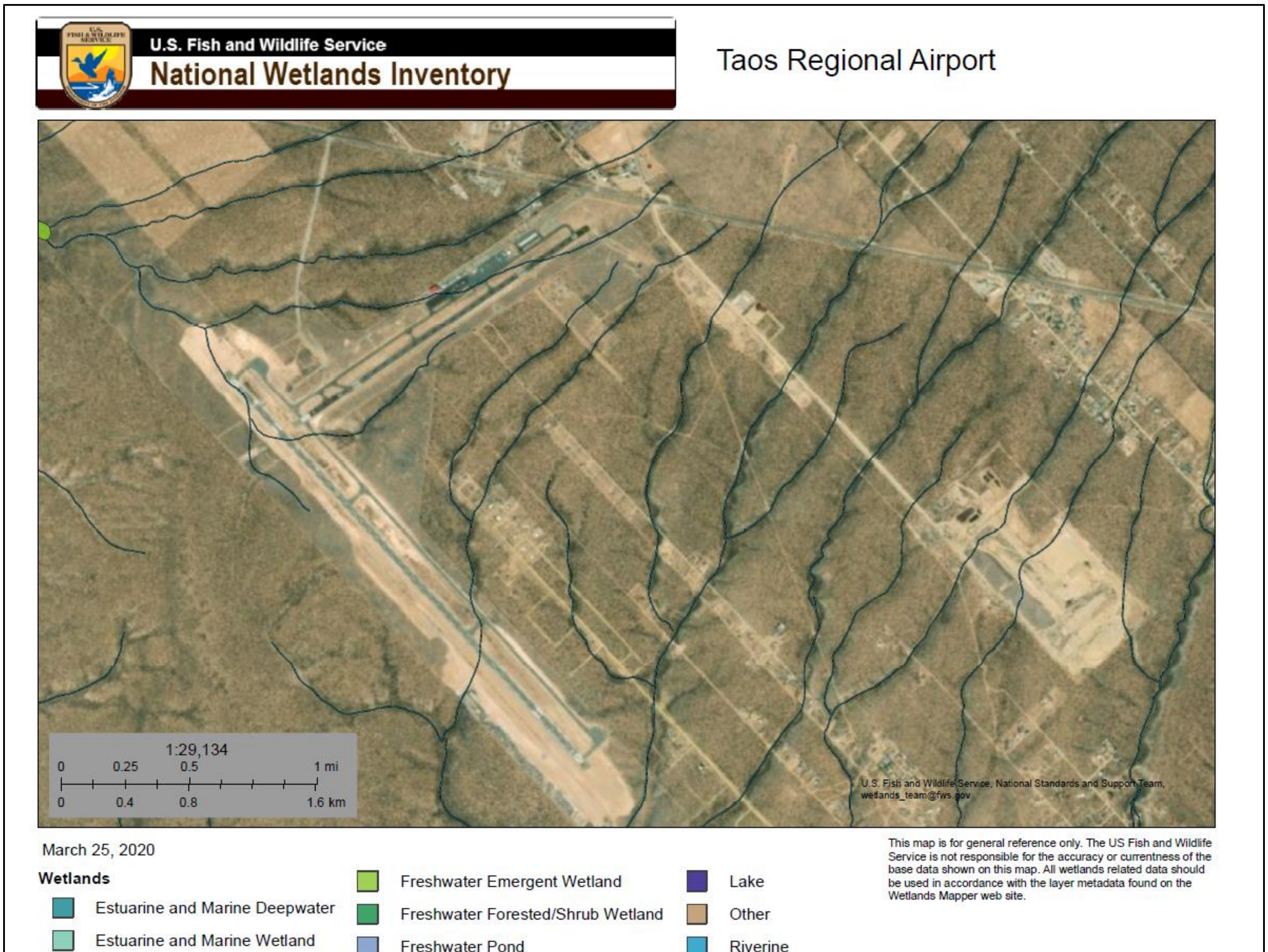
Source: US Fish and Wildlife Service, 2020

2.10.6 Historical, Architectural, Archaeological and Cultural Resources

There are no known historical, architectural or archaeological sites located within the immediate vicinity of the Airport. As was previously discussed, the nearest cultural area is the Taos Pueblo, which is designated as both a World Heritage Site and a National Historic Landmark.

2.10.7 Wetlands

The U.S. Fish and Wildlife Service *National Wetlands Inventory* was reviewed to determine the location of wetlands within the vicinity of the Airport. Several Riverines' were identified as being located throughout the airfield, however the area has historically been dry. **Figure 2-28** depicts the location of wetlands surrounding the Taos Regional Airport.



Source: U.S. Fish and Wildlife Service, 2020

Figure 2-28 Wetlands Inventory Map

2.11 Summary of Airport Facilities

Table 2-15 provides a summary of the existing facilities available at the Taos Regional Airport.

Table 2-15 Existing Airport Facilities

Airport Data	Description
Identifier	SKX (ICAO), TSM (IATA)
FAA Site Number	14741.05*A
FAA NPIAS Number	35-0041
Owner	Town of Taos
Airport Elevation	7,094.6' MSL
Airport Facility	**Description**
Runways	Runway 13-31 Runway 4-22
Runway Design Code	RW 13-31: C-II-4000 RW 4-22: B-II-5000
Runway Dimensions	RW 13-31: 8,600' x 100' RW 4-22: 5,504' x 75'
Runway Markings	RW 13: Precision RW 31: Non-Precision RW 4: Non-Precision RW 22: Basic
Runway Lighting	MIRL
Instrument Approach	RW 4: GPS RW 13: GPS VOR/DME-B Circling
Approach Minimums	RW 13: ¾ Mile RW 31: Visual RW 4: 1 Mile RW 22: Visual
Runway Pavement Strength	RW 13-31: 51/F/D/X/T, 60 SWG RW 4-22: 4/F/D/Y/T, 24 SWG
Runway Pavement Condition	RW 13-31: Excellent RW 4-22: Good
Taxiways	2 Full-Length Parallel
Apron	Total of 20,060 S.Y.
Tie Downs	33
Visual Aids	Threshold Lights, REILs (RW 4, 13,31), MIRLs (TW B), PAPIs, MITLs, Rotating Beacon, Retroreflectors (TW A), Lighted Wind cone and Segmented Circle
Pilot Lounge	Yes
Hangar Facilities	23 T-Hangars and 3 Box Hangars
Fuel Storage	100LL AvGas and Jet-A (12,500 gal tanks)
Fuel Service	Taos Aviation Services & Self-Serve
Weather Equipment	AWOS-3 P/T
Automobile Parking	Approximately 4,400 S.Y. Paved Approximately 975 S.Y. Unpaved

Source: Armstrong Consultants, Inc., 2020

Chapter Three

Forecast of Aviation Demand

ARMSTRONG

Chapter 3 – Forecast of Aviation Demand

3.1 Introduction

A forecast of aviation demand provides the basis for evaluating the adequacy of existing airport facilities and its capability of handling potential traffic demand. Forecasts are the foundation for effective decision making in airport planning and establish when improvements are needed, the level of capital improvements and the timing of the necessary investments.

While forecast 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. Therefore, forecasts must be used with careful consideration, as they may lose their validity with the passage of time or are impacted by unforeseen changes in the surrounding market.

Aviation forecasts are typically based on historical data and other broadly accepted industry and governmental estimates, as well as the primary socioeconomic drivers of aviation activity. 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 logical development of aviation facilities at Taos Regional Airport.

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

Forecast methodologies and analysis in this study consider historical aviation trends at Taos Regional Airport, as well as throughout the nation. The latest local historical data was collected from the following sources: Federal Aviation Administration (FAA) Terminal Area Forecast (TAF) records from the FAA Form 5010-1, *Airport Master Record*, 2017 New Mexico Aviation System Plan Update, FAA Traffic Flow Management System (TFMS), FlightAware, and Airport management records.

Aviation activity projections are made based upon estimated growth rates, area demographics and socioeconomic, industry trends and other relevant indicators. Forecasts are prepared for the short-term (0-5 years); the medium-term (6-10 years); and long-term (11-20 years) time frames. Using forecasts within this planning horizon will allow the airport's improvements to be timed in order to efficiently meet the expected demand.

3.2 Existing Aviation Activity

The FAA Form 5010-1, *Airport Master Record*, is an FAA document which contains aeronautical data describing the physical and operational characteristics of civil public-use airports. Information is usually provided by the local operator of the airport. The most current Form 5010-1, last updated in April 2019, indicates 26 based aircraft and 7,000 total annual operations. However, recent airport management records indicate an actual total of 38 based aircraft (35 single engine piston, two multi-engine piston, and one helicopter). The baseline year for this forecast (2019) will use 38 based aircraft and total annual operations at 7,160.

According to the FBO operator, it is estimated that both FlightAware and FAA Traffic Flow Management System Counts were approximately 15 to 20 percent lower than actual IFR operations into the Airport. This can be attributed to the cancellation of IFR flight plans prior to arrival into Taos, filing IFR flight plans after departure from Taos under VFR conditions, (which would prevent being counted by Traffic Flow Management System) or blocking the registry number from being tracked (which would prevent being counted by FlightAware). It is also estimated that passenger enplanements are likely higher than those actually reported. It is estimated there is approximately 1,875 additional enplanements by CFR Part 135 operators. However, these operators are not required to report their enplanements so actual totals are not able to be verified. The Airport has begun the process of tracking CFR Part 135 operations for 2020 and will assist the operators in reporting the data moving forward to ensure these enplanements are taken into account in the future.

Table 3-1 depicts the existing based aircraft fleet and operations mix at Taos Regional Airport as reported by the FAA Form 5010-1 and separately as reported by airport management. As the FAA Form 5010-1 data may vary in accuracy depending on the source and date of last update, information from airport management including Taos Air is also considered. **Figure 3-1** graphically depicts the IFR flight plans with Taos Regional Airport as an origin or destination between March 2019 and March 2020.

Table 3-1 Existing Aviation Activity

Year			Based Aircraft		
	Single-Engine	Multi-Engine	Helicopter	Jet	Total
2019 (Form 5010)	22	2	2	0	26
2019 (Actual)	35	2	1	0	38
Year			Operations		
	Air Taxi	GA Local	GA Itinerant	Military*	Total
2019 (Form 5010)	200	2,600	4,000	200	7,000
2019 (Actual)	360	2,600	4,000	200	7,160
Year			Enplanements**		
2019 (Form 5010)			0		
2019 (Actual)			1,750		

Source: FAA Form 5010, 2019 and Airport Management 2020

*Military operations are carried forward at a no-growth percentage throughout the planning period.

**Enplanements do not include those by CFR Part 135 operators.

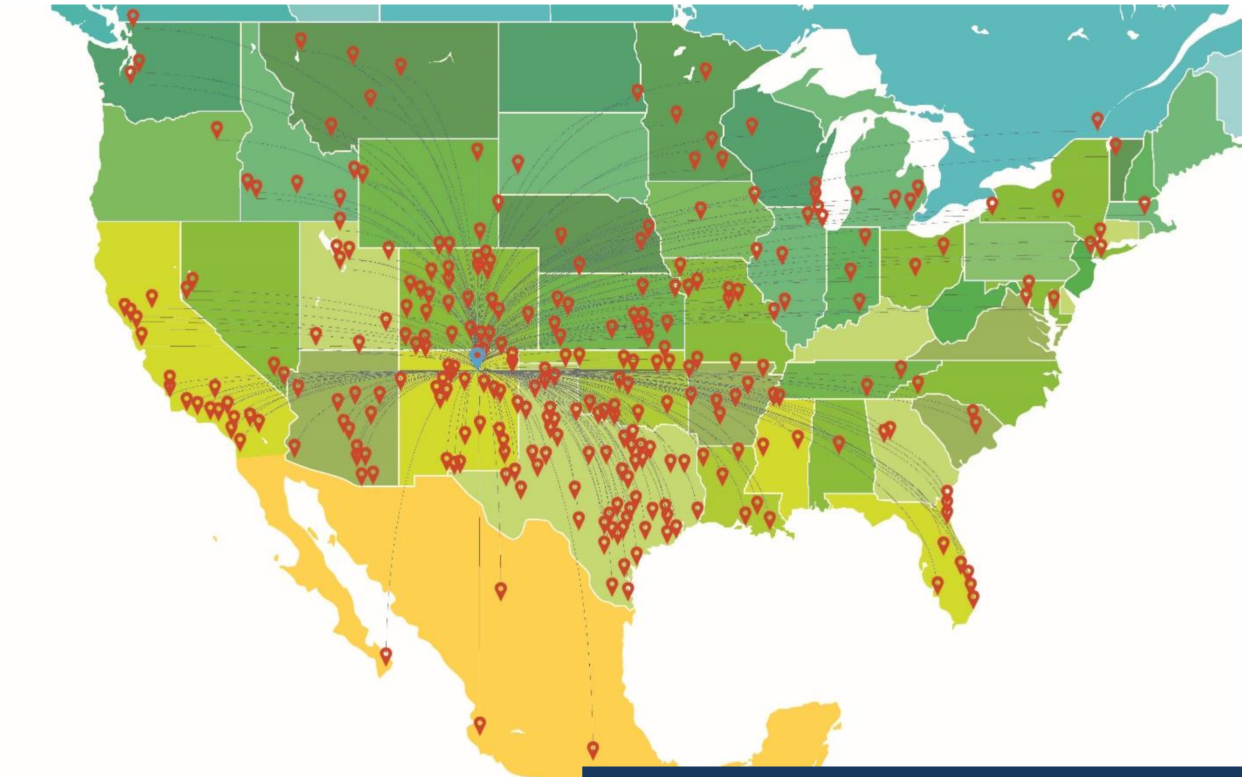


Figure 3-1 IFR Flight Plans Involving SKX (March 2019-March

Source: Flightaware and Armstrong Consultants, Inc., 2020

For forecasting purposes, the fleet mix for each operational category was also evaluated. This information was analyzed to determine the appropriate national fleet mix trends for each subset at Taos Regional Airport. Based on instrument flight plans filed to or from Taos between March 2019 and March 2020, the following fleet mix percentages were determined:

- Air Taxi: 100 percent jet aircraft (based on Taos Air activity);
- General Aviation Local: 100 percent single engine piston aircraft; and
- General Aviation Itinerant: 40.5 percent single engine piston aircraft, 33.9 percent turboprop aircraft, and 25.6 percent jet aircraft.

3.3 Local Profile

Examining the specific socioeconomic characteristics of the Town of Taos helps determine the factors influencing aviation activity in the area and determine the extent to which aviation facility developments are needed. Characteristics, such as population, employment and income will provide a foundation upon which to base the potential growth rate of aviation activity at the airport.

The Town of Taos is located in Taos County in the north central portion of the State of New Mexico. It is the largest town in both the County and region. Taos serves as the primary hub for commercial, industrial, retail, and medical facilities in the area. The town is also located in the Enchanted Circle which is a center for tourist activity within the State of New Mexico, which will be further described in this Chapter.

3.3.1 Population

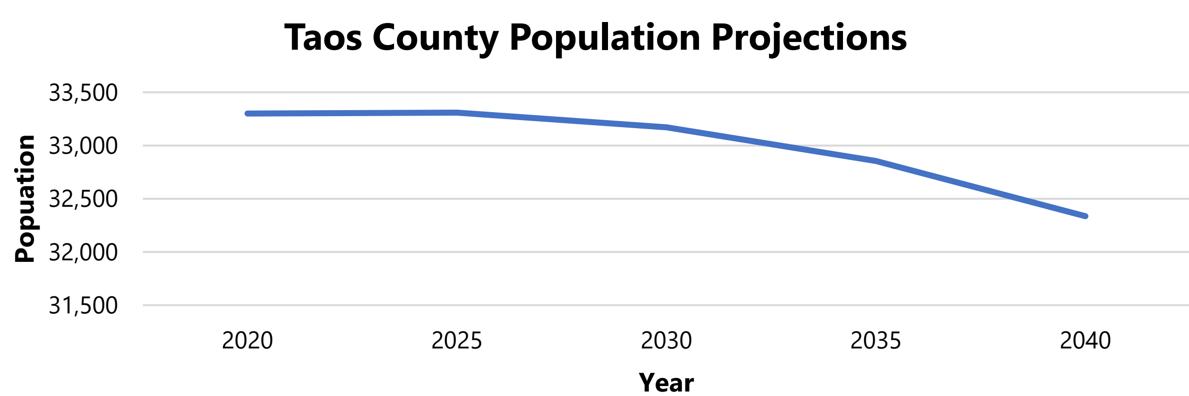
According to the University of New Mexico's Geospatial and Population Studies (UNMGPS), the population for the State of New Mexico increased from 2.059 million in 2010 to an estimated 2.187 million in 2020 with Taos County's population decreasing from 33,299 in 2020 to an estimated 32,336 in 2040.

UNMGPS also developed population projections for all New Mexico counties and the entire State. Population projections for Taos County and the State of New Mexico are shown in **Table 3-2**, **Figure 3-2** and **Figure 3-3**. The population forecast indicates an increase of 9.79 percent population for the State of New Mexico and a decrease of 2.89 percent for Taos County between 2020 and 2040. The U.S. Census Bureau estimates a population of 5,971 for the Town of Taos in 2019.

Table 3-2 Population Projections for Taos County and New Mexico

	2020	2025	2030	2035	2040	Average Annual Growth Rate
Taos County	33,299	33,309	33,172	32,855	32,336	-0.14%
New Mexico	2,187,183	2,247,564	2,308,475	2,360,091	2,401,480	0.49%

Source: University of New Mexico Geospatial and Population Studies, 2020



Source: University of New Mexico Geospatial and Population Studies, 2020

Figure 3-2 Taos County Population

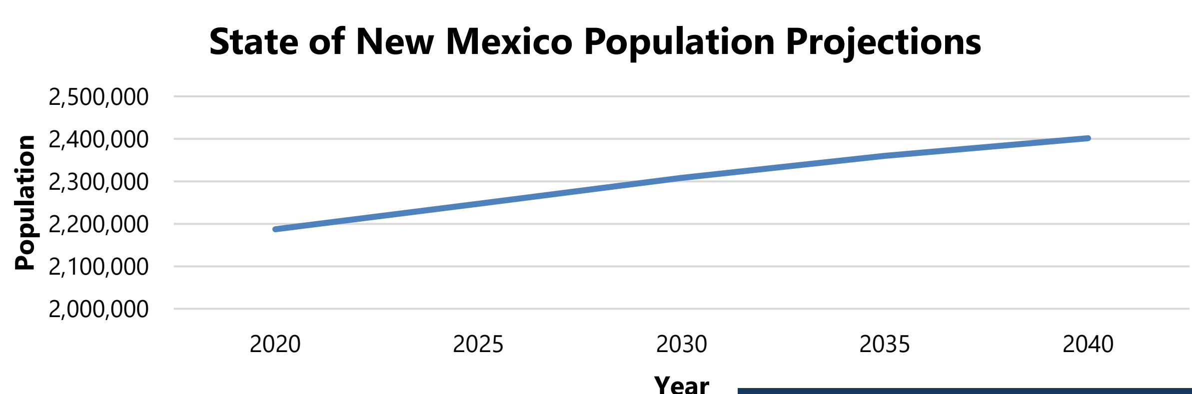


Figure 3-3 State of NM Population

Source: University of New Mexico Geospatial and Population Studies,

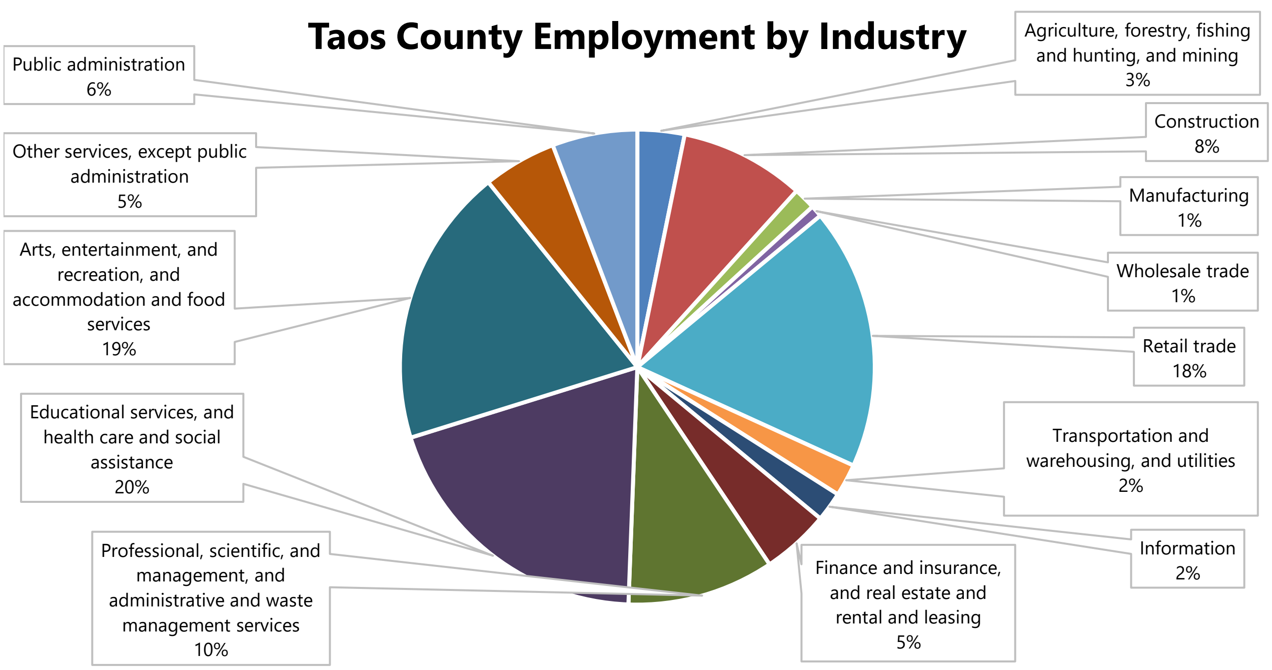
3.3.2 Employment and Largest Industries

According to the U.S. Bureau of Labor Statistics, the unemployment rate in Taos County was 6.2 percent in February 2020. This is above the unemployment rate for the State of New Mexico which is 4.8 percent. The largest employment segments in Taos County are directly related to tourism and account for 36.8 percent of all jobs. Taos Ski Valley is the largest private employer in the immediate area. The employment distribution by industry for Taos County is shown in **Table 3-3** and **Figure 3-4**.

Table 3-3 Taos County Employment Distribution by Industry

Industry	Number of Employed County Residents	Percent of Employed County Residents
Agriculture, forestry, fishing and hunting, and mining	439	3.20%
Construction	1,156	8.50%
Manufacturing	203	1.50%
Wholesale trade	109	0.80%
Retail trade	2,429	17.80%
Transportation and warehousing, and utilities	300	2.20%
Information	276	2.00%
Finance and insurance, and real estate and rental and leasing	627	4.60%
Professional, scientific, and management, and administrative and waste management services	1,360	10.00%
Educational services, and health care and social assistance	2,685	19.60%
Arts, entertainment, and recreation, and accommodation and food services	2,595	19.00%
Other services, except public administration	699	5.00%
Public administration	788	5.80%

Source: U.S. Census Bureau, 2020



Source: U.S. Census Bureau, 2020

Figure 3-4 Taos County Employment Distribution by

3.3.3 Income

According to the U.S. Census Bureau, the median household income for Taos County is $36,758. This is lower than the median household incomes for the State of New Mexico and the United States which is $48,059 and $60,293, respectively. The per capita income is $23,642 for Taos County.

Taos County also has a significant portion of second homes in the area. According to a 2015 Albuquerque Journal report, approximately 27 percent of the County's homes are owned by out of state residents. Owners of these residences are traditionally more affluent and less sensitive to fluctuations in economic conditions.

3.4 Aircraft Operation Categories

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

Local operations: Represents operations that stay within the traffic pattern airspace (non-itinerant).

Itinerant operations: Represents operations that arrive from outside the traffic pattern or depart the airport traffic pattern.

Based aircraft operations: 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. If based at more than one airport, the airport at which the aircraft is stored at the most days is the base airport (example: the airport at which the aircraft is located at more than 6 months out of the year if operated out of two different airports).

Transient operations: 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 to correlate with FAA forecasting criteria.

Commercial service operations are also termed either air taxi or air carrier depending on the passenger capacity or aircraft weight. The FAA defines each as follows:

Air Carrier: Aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds, carrying passengers or cargo for hire or compensation. This includes US and foreign-flagged carriers.

Air Taxi: Aircraft designed to have a maximum seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less, carrying passengers or cargo for hire or compensation.

For the purposes of this forecast, air carrier operations would be any CFR Part 121 carrier operating aircraft greater than 60 seats including the Bombardier Canadair Regional Jet (CRJ) 700 / 900 or

Embraer Regional Jet (ERJ) 170 / 175. Air taxi operations would include any CFR Part 380 carrier, such as Taos Air utilizing the Dornier 328 Jet, any CFR Part 121 carrier operating aircraft less than 60 seats including the CRJ-200 or ERJ-140 / 145, and anyone operating charter corporate aircraft flights for business or personal purposes under CFR Part 135.

3.5 National Trends in Aviation

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 FAA annually convenes expert panels in aviation and develops forecasts for future activity in all areas of aviation, including general aviation. The FAA's 2020-2040 forecast predicts that the total general aviation fleet will remain stagnant during the 20-year forecast period. The fleet of jet turbine aircraft is expected to increase at a rate of 2.2 percent annually, while fixed-wing piston aircraft are expected to decline at a rate of 1.0 percent; as a result, piston aircraft are expected to represent a smaller percentage of the total general aviation fleet than they typically have in previous years. The national helicopter fleet is anticipated to increase at an average annual rate of 1.6 percent. **Figure 3-5** and **Figure 3-6** illustrate this forecasted change to the general aviation fleet that is forecast to occur over the 20-year period.

In 2005, the category of "light sport" aircraft was created. By 2019, a total of 2,700 aircraft were included in this category. Rate of growth for this aircraft category is expected to increase by 3.3 percent annually and by 2040 a total of 5,430 light sport aircraft are projected to join the fleet.

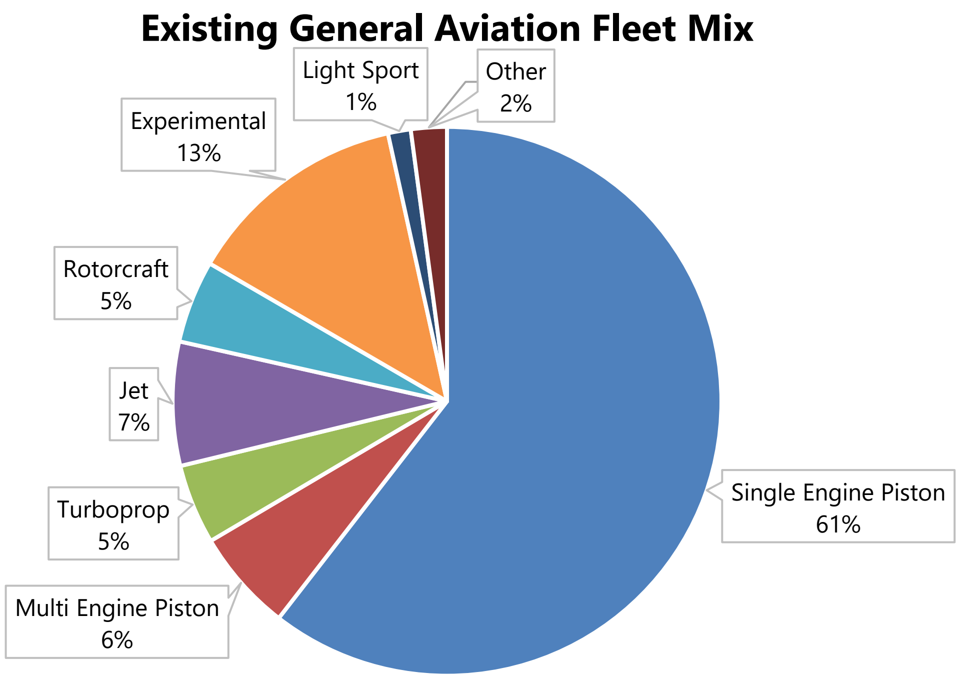
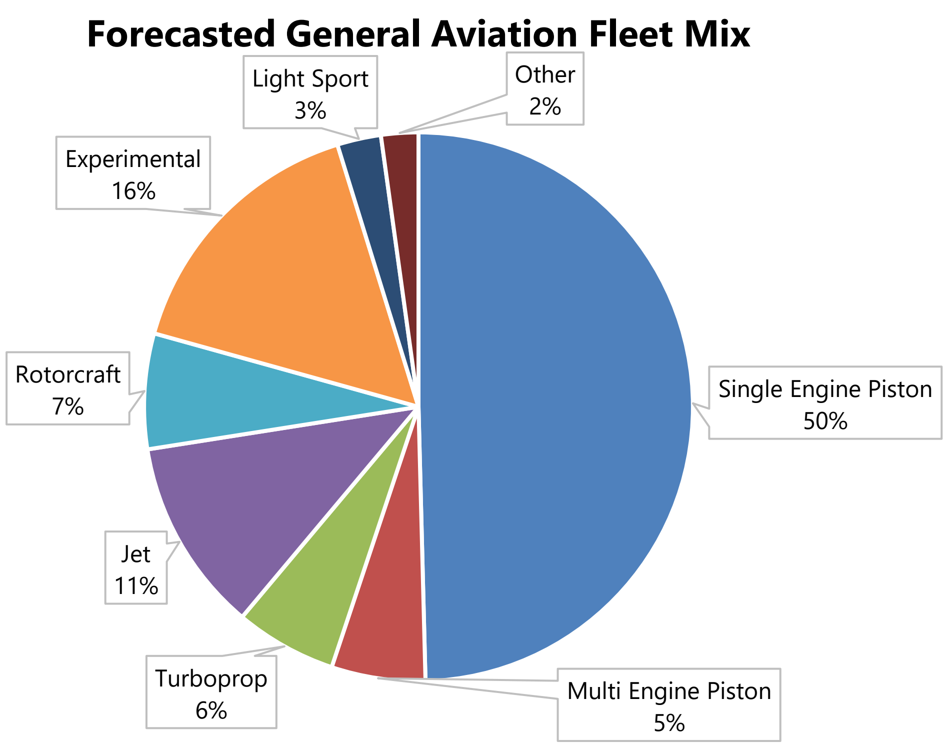


Figure 3-5 Existing National GA

Source: Federal Aviation Administration, 2020



Source: Federal Aviation Administration, 2020

Figure 3-6 Forecasted National GA Fleet

The Federal Aviation Aerospace Forecast produces activity forecasts based on general aviation and air taxi hours flown. As shown in **Table 3-4**, the biggest predicted increase is for turbo jet and light sport aircraft at 2.6 percent and 4.1 percent growth respectively from 2020 through 2040. Fixed wing piston aircraft categories are forecast to decline slightly through the forecast period.

The FAA projects the number of active general aviation pilots (excluding student pilots) to increase by an average annual rate of 0.1 percent over the forecast period. The number of student pilots is also forecast to increase by an average annual rate of 0.1 percent over the forecast period. Airline Transport pilots are expected to grow at an annual average rate of 0.7 percent. The number of private pilots is projected to decrease at an average yearly rate of 0.7 percent over the forecast period. The FAA is also projecting an annual increase of 2.8 percent of sport pilots reflecting a growing interest in this "entry level" pilot certificate.

Table 3-4 U.S. General Aviation and Air Taxi Aircraft Hours Flown (In Thousands)

Year	Aircraft			Rotorcraft		Other	Experimental	Light Sport	Total Hours Flown (Thousands)
	Piston	Turbine	Business Jet	Piston	Turbine				
2020	13,497	2,807	5,019	641	2,457	153	1,242	223	26,039
2021	13,276	2,838	5,215	661	2,520	153	1,269	237	26,169
2022	13,064	2,871	5,406	680	2,578	154	1,293	250	26,297
2023	12,863	2,900	5,586	700	2,636	155	1,315	264	26,418
2024	12,665	2,926	5,762	720	2,695	155	1,338	278	26,540
2025	12,479	2,956	5,945	738	2,756	156	1,363	292	26,684
2026	12,318	2,987	6,129	757	2,819	156	1,386	305	26,856
2027	12,169	3,020	6,315	775	2,883	156	1,409	318	27,045
2028	12,015	3,052	6,498	794	2,941	156	1,432	331	27,219
2029	11,889	3,090	6,663	813	2,998	157	1,456	344	27,410
2030	11,776	3,129	6,824	831	3,058	157	1,480	357	27,612
2031	11,666	3,167	6,980	850	3,118	158	1,504	371	27,813
2032	11,563	3,207	7,140	869	3,178	158	1,527	384	28,027
2033	11,472	3,248	7,293	888	3,240	158	1,551	397	28,248
2034	11,393	3,294	7,442	906	3,301	159	1,574	411	28,479
2035	11,321	3,344	7,592	923	3,362	159	1,598	424	28,723
2036	11,254	3,395	7,744	941	3,423	159	1,622	438	28,976
2037	11,217	3,453	7,894	958	3,485	160	1,643	453	29,263
2038	11,179	3,516	8,036	976	3,546	160	1,664	467	29,545
2039	11,167	3,583	8,187	994	3,608	160	1,685	482	29,867
2040	11,177	3,652	8,331	1,012	3,670	160	1,707	496	30,205
AAG:	**-0.9%**	**1.3%**	**2.6%**	**2.3%**	**2.0%**	**0.7%**	**1.6%**	**4.1%**	**0.7%**

Source: FAA Aerospace Forecast, 2020

<u>NextGen</u>

Next Generation Air Transportation System (NextGen) is a new era in flight that is transforming how aircraft navigate the sky and is a replacement to the World War II era technology that has until recently been the primary navigation technology. NextGen utilizes satellite technology which allows pilots to know the precise locations of other aircraft around them. This allows more planes in the sky while enhancing the safety of air travel. Satellite landing procedures also allow pilots to arrive at airports more efficiently by providing for more direct flight routes.

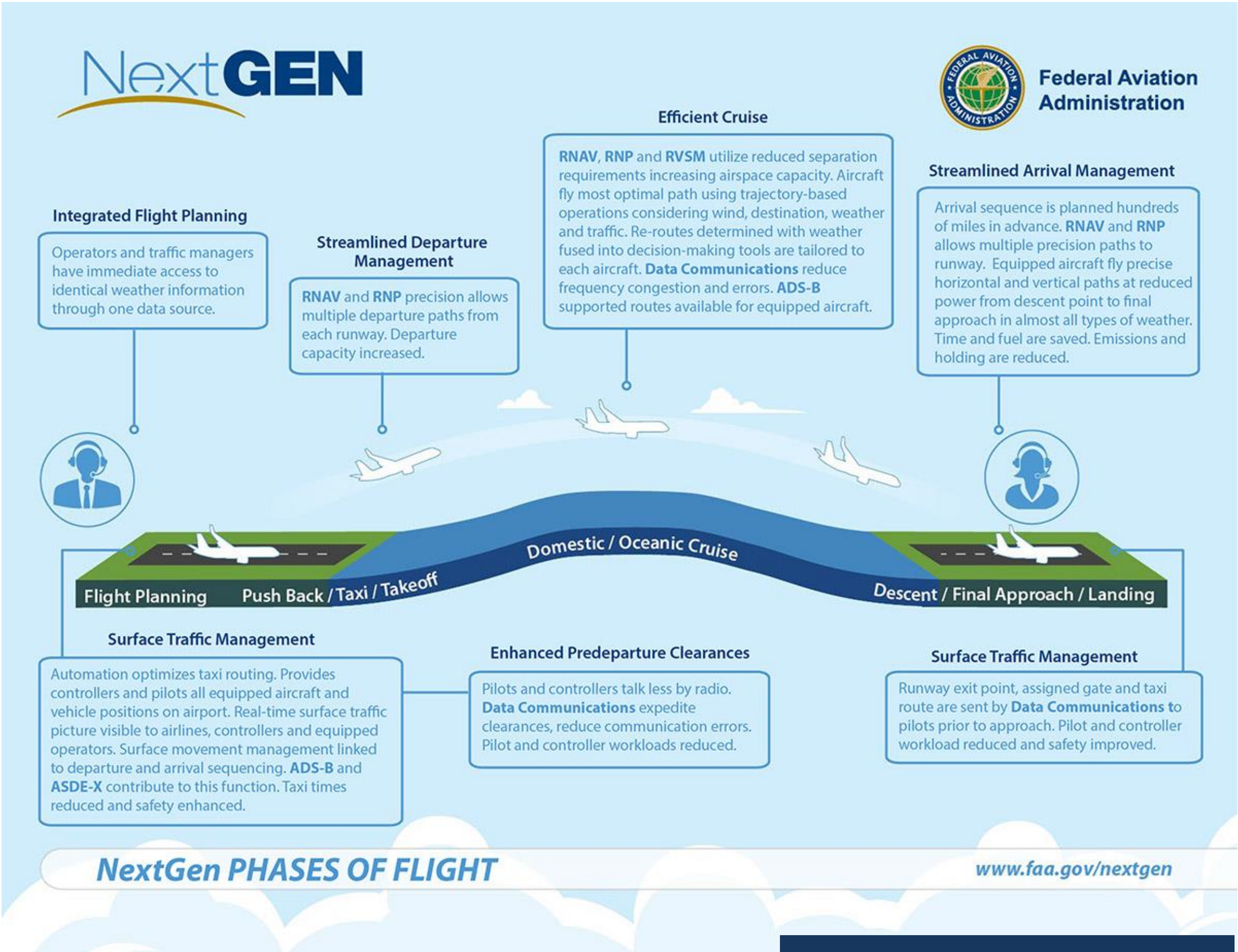


Figure 3-7 NextGen Program

Source: Federal Aviation Administration

Unmanned Aerial Systems

The integration of Unmanned Aerial Systems (UAS) into the National Airspace System poses a unique situation for airports throughout the United States. The UAS Integration Pilot Program (IPP) is currently investigating many applications of this new technology including agricultural management including spray operations, package delivery (retail and medical), emergency response management, and infrastructure inspection. Additionally, the IPP is also looking into operational considerations of UAS such as operations beyond visual line of sight, operations over residential areas, ability to "see and avoid", and ADS-B detection. The 2020-2040 FAA Aerospace Forecasts expects a rapid growth in commercial UAS uses within the forecast period. As a result of this evolving component to the National Airspace System, it is important to recognize that UAS may have an impact on the operational use of the Taos Regional Airport and should be planned for accordingly.

3.6 Factors Affecting Aviation Demand at Taos Regional Airport

In order to develop aviation forecasts to truly reflect the unique conditions at Taos Regional Airport, the factors impacting the Airport's demand must be evaluated. The following key factors were determined to have significant influence on the Airport's existing and future demand:

National Trends in Aviation Related to Taos Regional Airport

Based on an evaluation of FAA forecasts of the general aviation industry, the jet and turboprop fleet will become more prevalent within the next twenty years. Approximately 40 percent of Taos Regional Airport's fleet mix for total annual operations are by jet or turboprop aircraft. These aircraft are typically more demanding for aircraft parking apron area, hangar needs, fuel storage requirements, vehicle parking, and additional passenger / crew services. Concurrently, it is expected that lesser demanding single engine piston aircraft are likely to decline over the same period.

Completion of Runway 13-31

As previously discussed, development at the Airport was at a relative standstill for nearly a 30-year period as the EIS process was undertaken. The new crosswind runway, Runway 13-31, was completed in 2017 and provided increased airport safety and efficiency. With the new runway operational, there was an increase in Jet-A fuel sales, which power turbine driven aircraft, by approximately 50 percent over sales prior to Runway 13-31's construction. During that same time period, 100LL fuel sales, which power piston driven aircraft, remained constant. This data set indicates an increase in turbine operations, including jets and turboprops, at the Airport in recent history. **Figure 3-8** depicts the annual percentage of aircraft sales of total fuel sales for either Jet-A or 100LL from 2013 to 2019.

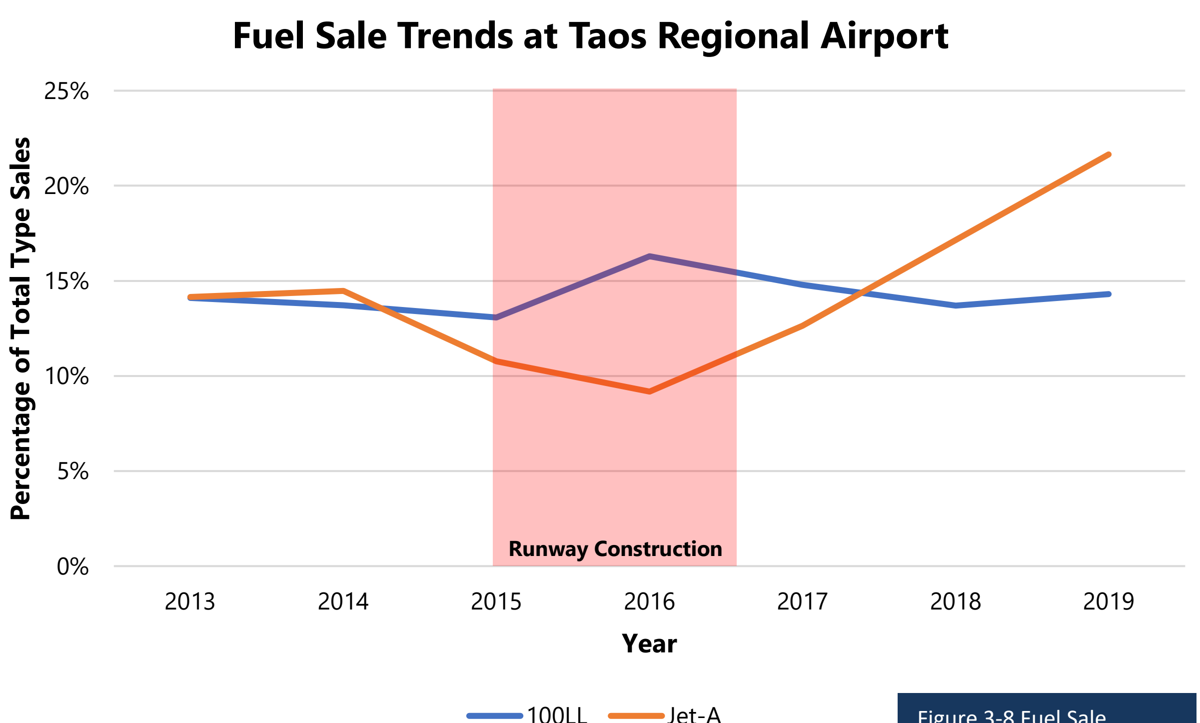


Figure 3-8 Fuel Sale

Source: Taos Aviation Services, 2020

Lack of Available Hangar Facilities

Currently, there is a waitlist of 12 aircraft for hangar storage at Taos Region Airport. Of these 12 aircraft, there are two jets, five single-engine piston aircraft, and one multi-engine piston aircraft which are not presently based at the Airport. As a result, these individuals are basing their aircraft at other airports in the region. It is assumed if there were additional hangar development for based aircraft at the Airport, it would lead to an immediate increase in based aircraft.

<u>Passenger Air Service Demand at Taos</u>
Taos Regional Airport is located within the Enchanted Circle, an area of Northern New Mexico with numerous tourist activities including:

- Taos Ski Valley: a world-class recreation area with year-round outdoor activities including skiing, hiking, rafting, and golfing. According to Snow Industry News, the Ski Valley is undertaking $300 million worth of improvements including, but not limited to: new ski lifts, dining area renovations, new meeting / event centers, snowmaking equipment upgrades, new luxury accommodations, and instruction centers.
- The Taos Pueblo: a cultural site that is the only living Native American community designated both a World Heritage Site by United Nations Educational, Scientific and Cultural Organization (UNESCO) and a National Historic Landmark.
- The Town of Taos: a center for arts, culture, dining, and shopping in the heart of the Enchanted Circle.

Visitors to the region typically arrive in the area via automobile. For out of state visitors, this would typically include flying into Albuquerque International Sunport or Santa Fe Municipal Airport, both of which accommodate airline service, and driving to Taos which could take several hours depending on weather conditions. This may be a limiting factor for individuals searching for destinations nationwide. Recognizing a need for direct and easy access for tourists to the region, Taos Air was formed to provide air service into the Airport.

Taos Air, a scheduled public charter operating under Title 14 Code of Federal Regulations (CFR) Part 380, initiated service to Dallas (Love Field) and Austin, Texas in December 2018 operating two 30-passenger Dornier 328 Jets. This service allows passengers to purchase airfare and travel on Taos Air from these destinations directly to Taos Regional Airport. Flights initially were operated during the peak winter months on a limited schedule. Since the introduction of service, Taos Air has experienced an increase in passenger and market demand. Taos Air contributed 1,755 passenger enplanements for the Airport in 2019 and expanded their destinations to both the Los Angeles and San Diego, California areas. Additionally, considerations are being made to expand their service schedule for summer services to their Texas markets.

Presently, Taos Regional Airport is able to accommodate passenger operations by CFR Part 380 carriers with 30 seats or less, such as Taos Air. The Airport is unable to accommodate passenger services by CFR Part 121 carriers such as American Airlines, United Airlines, Delta Air Lines, or their regional affiliates who can only legally operate into airports with an FAA approved Part 139 Airport Operating Certificate. Airports which require certification under Title 14 CFR Part 139 include those which:

- Serve scheduled and unscheduled air carrier aircraft with more than 30 seats;
- Serve scheduled air carrier operations in aircraft with more than 9 seats but less than 31 seats; and
- The FAA Administrator requires to have a certificate.

According to the FAA, "Airport Operating Certificates (AOC) serve to ensure safety in air transportation. To obtain a certificate, an airport must agree to certain operational and safety standards and provide for such things as firefighting and rescue equipment. These requirements vary depending on the size of the airport and the type of flights available." Taos Regional Airport does not meet key requirements for Part 139 certification including ARFF services. Additionally, the Airport would also be required to implement Transportation Security Administration (TSA) programs in order to ensure the secure operation of scheduled passenger service. Further analysis of the facility and operational needs to achieve Part 139 certification will be discussed in Chapter Four, *Facility Requirements*.

There is an overall trend in the regional airline fleet mix transitioning from smaller aircraft to larger aircraft. Regional carriers have fluctuated the retirement of both turboprop and jet powered aircraft with passenger capacities less than 50 seats in favor of larger capacity regional aircraft. In the early 2010's, many regional airlines stored their 50 seat passenger jets only to reintroduce them into service recently. These aircraft include the Bombardier CRJ-200 or ERJ-140 / 145.

A 2020 study was conducted that reviewed the existing market conditions in the area to determine if air service by a CFR Part 121 carrier may be viable. The study determined there would be sufficient market demand for continuation and expansion of Taos Air in addition to regional airline service commencing. If the Airport met the requirements and obtained an AOC, it would be possible for scheduled service by a major airline or their regional affiliates to serve Taos Regional Airport. Potential operations, fleet mix, and passenger enplanements will be further evaluated in this chapter.

<u>Coronavirus Pandemic (COVID-19)</u>
Starting in early 2020, the COVID-19 virus progressed into global pandemic which has impacted both regional, national, and global markets. As of May 2020, COVID-19 had been responsible for over 80,000 deaths in the United States alone. This resulted in virtually every state implementing some form of measures to slow the spread of the virus including: stay-at-home orders, wearing masks / protective equipment in public, and no non-essential travel. Global economic markets incurred significant losses in a relatively short-period. The United States unemployment rate increased from 4.4 percent in February 2020 to 14.7 percent in May 2020. Due to the economic losses and travel restrictions, the International Civil Aviation Organization estimated a 91 percent drop in air passenger capacity in April 2020. As previously indicated, the CRJ-200 and ERJ-140 / 145 have a capacity of 50 seats or less and are also slated for retirement from passenger service prior during the planning period. It is anticipated the CRJ-200 and ERJ-140 / 145 retirement will be accelerated in the early-2020's according to recent airline announcements. By the mid-2020's and onwards, the regional air carrier fleet mix will likely consist of the CRJ-700 / 900 or Embraer 170 / 175, which seat 60 to 76 passengers. It should be noted while there is a shift to larger aircraft, it does not necessary indicate the need for larger capacity. It would be expected in many markets the larger jets would carry the same passenger amount at a lower load factor.

Direct impacts to Taos as a result of COVID-19 include the early closure of Taos Ski Valley's winter season, postponement of summer service to Texas markets by Taos Air, and uncertainty of the scheduling of Winter 2020-2021 services. The full impacts of COVID-19 are not fully understood at this point and it is likely there may be shifts to local aviation trends within the short-term.

3.7 Available Activity Forecasts

The first step in preparing aviation forecasts is to examine historical and existing activity levels and currently available forecasts from other sources. The 2020-2040 FAA TAF and 2017 New Mexico Aviation System Plan Update were reviewed.

The TAF is the official FAA forecast of aviation activity for U.S. airports. The forecasts are prepared to meet the budget and planning needs of FAA and provide information for use by state and local authorities, the aviation industry, and the public. The 2020 TAF indicates 37 existing based aircraft for Taos Regional Airport and 7,334 existing annual operations. The TAF indicates a growth in based aircraft from 37 in 2020 to 40 in 2040 and growth in operations from 7,334 in 2020 to 11,684 in 2040 for the Airport. The TAF is used as a reference to compare existing activity levels at Taos Regional Airport.

The 2017 New Mexico Aviation System Plan Update utilized 2013 as a base year. The report indicated 44 based aircraft and 12,901 total annual operations in 2013. The planning horizon for the study concludes in 2035 which forecasts 52 based aircraft and 21,717 total annual operations.

3.8 Forecasts of Aviation Demand

3.8.1 Based Aircraft Forecast

The forecasts for Taos Regional Airport took into consideration growth rates for the community, county, and state with a comparative analysis of existing based aircraft levels using three methodologies to determine a preferred forecast of based aircraft.

Forecasting methods were developed which accounted for the lack of available hangar space, demand of aircraft owners in the Taos region who are unable to base their aircraft at the Airport, and overall trends in the national general aviation fleet mix. These factors were determined to be significant influences on the existing and future number of based aircraft at Taos Regional Airport.

<u>No Hangar Development Scenario</u>

This method assumes that no hangar development suitable for existing demand occurs at the Airport. As a result, the aircraft on the hangar waitlist for the region would still be required to base their aircraft at other regional airports. It is assumed that the remaining based aircraft fleet mix outlook would trend with projections developed in the FAA 2020-2040 Aerospace Forecast, which includes a 1.0 percent annual decline for single-engine piston aircraft, a 0.5 percent annual decline for multi-engine piston aircraft, and a 1.6 percent annual increase for helicopters. With the decline in aircraft depicted and high demand for hangar space, it is assumed that one jet may be able to be based at Taos once existing space opens up. This scenario results in 33 based aircraft in 2040. The results of this scenario forecast are shown in **Table 3-5**.

Table 3-5 No Hangar Development Scenario

Year	Single-Engine	Multi-Engine	Jet	Helicopter	Total Based Aircraft
2020	35	2	0	1	38
2025	33	2	1	1	37
2030	32	2	1	1	36
2035	30	2	1	1	34
2040	29	2	1	1	33

Source: Armstrong Consultants, Inc., 2020

Hangar Development / National Trend Demand Scenario

This method assumes hangar development over a two-year period in the short-term able to accommodate 100 percent of the local area hangar demand. After the initial construction, it is assumed that based jets at the airport would grow at an annual average rate of 2.2 percent as listed in the FAA 2020-2040 Aerospace Forecast. It is assumed that the remaining based aircraft fleet mix outlook would trend with projections developed in the FAA 2020-2040 Aerospace Forecast, which includes a 1.0 percent annual decline for single-engine piston aircraft and 1.6 percent annual increase for helicopters. This scenario results in 39 based aircraft in 2040. The results of this scenario forecast are shown in **Table 3-6**.

Table 3-6 Hangar Development / National Trend Demand Scenario

Year	Single-Engine	Multi-Engine	Jet	Helicopter	Total Based Aircraft
2020	35	2	0	1	38
2025	37	3	2	1	44
2030	36	3	2	1	42
2035	34	3	3	1	40
2040	32	3	3	1	39

Source: Armstrong Consultants, Inc., 2020

Hangar Development / No Demand Change Scenario

This method assumes hangar development over a two-year period in the short-term able to accommodate 100 percent of the local area hangar demand. After the initial construction, it is assumed that there is no change to demand to the single-engine, multi-engine, or jet aircraft fleets either nationally or locally. This could occur with either longevity of the existing and immediate based aircraft operators or consistent replacement of storage availability if it becomes available in the future. This scenario results in 45 based aircraft in 2040. The results of this scenario forecast are shown in **Table 3-7**.

Table 3-7 Hangar Development / No Demand Change Scenario

Year	Single-Engine	Multi-Engine	Jet	Helicopter	Total Based Aircraft
2020	35	2	0	1	38
2025	39	3	2	1	45
2030	39	3	2	1	45
2035	39	3	2	1	45
2040	39	3	2	1	45

Source: Armstrong Consultants, Inc., 2020

Preferred Scenario

Based on the results of the three forecasting methods discussed, the Hangar Development / No Demand Change Scenario has been selected as the preferred forecast for based aircraft. This scenario factors in regional and community trends corresponding to aviation demand with the current fleet mix at the Airport. The TAF was used for comparison, which forecasts 45 based aircraft during the planning period. **Figure 3-9** depicts the based aircraft forecasting methods against the FAA TAF.

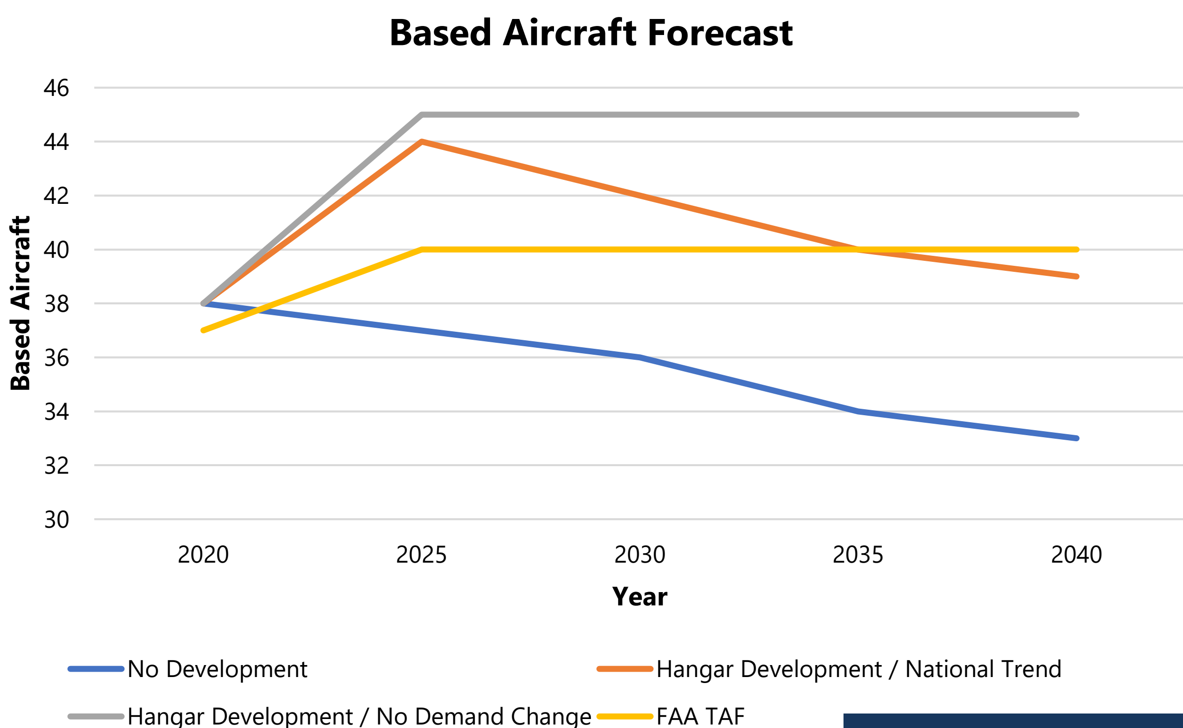


Figure 3-9 Based Aircraft

Source: Armstrong Consultants, Inc., 2020; Federal Aviation Administration, 2020

3.8.2 Aircraft Operations and Passenger Enplanement Forecast

As mentioned, Taos Regional Airport receives air service through Taos Air, operating under CFR Part 380. Types of airlines that serve smaller communities in the United States, similar to Taos, typically include: regional airlines (i.e. SkyWest Airlines, Endeavor Air, Envoy Air, etc.) which operate under CFR Part 121, commuter airlines (i.e. Boutique Air, Denver Air Connection, etc.) which operate under CFR Part 135, or public charters (i.e. Taos Air) which operate under CFR Part 380.

Regional airlines offer a streamlined service to mainline carriers to provide seamless onward connections. Regional airlines usually operate under the brand of a major airline as an affiliate carrier. For example, SkyWest Airlines operates as United Express in cooperation with United Airlines. Currently, passengers departing on SkyWest Airlines check-in at a United-branded counter, receive a United-branded ticket and obtain frequent flier miles through United's program. Additionally, once at their hub, passengers can connect to another United flight without having to recheck-in or be re-screened by security. Regional airlines also tend to operate jet-powered aircraft which typically have greater maintenance reliability and are able to operate in less favorable weather conditions. Overall, these carriers are able to provide a nearly equivalent level of service and convenience offered by major carriers.

Commuter airlines (also known as air taxis) offer standalone services between small communities and medium to large-sized cities. They typically do not offer interline agreements which are utilized by regional airlines and therefore are not able to provide a seamless onward connection. Additionally, commuter airlines do not offer integrated service with major carriers, so their passengers are unable to check their luggage through to their final destination or obtain frequent flier miles. Passengers are typically required to recheck-in at their connecting airport and often times are required to be re-screened. Commuter airlines typically operate smaller single or multi-engine turbine-driven and small jet aircraft with capacity less than 30 passengers. Public charters typically have the same operating characteristics as commuter airlines but the coordination of ticket sales is organized by a third-party organization outside of the airline itself.

The type of carrier operating at Taos Regional Airport can have a strong impact on the forecasted total annual operations and enplanements. In order to develop a preferred method of forecasting aircraft operations and passenger enplanements at Taos Regional Airport, the following three scenarios were created. Each scenario for total annual operations will also include general aviation users. It is assumed the remaining general aviation operations at Taos Regional Airport, would trend with the projected hours flown determined by the FAA 2020-2040 Aerospace Forecast, which includes an annual decrease of 0.9 percent for piston aircraft, a 1.3 percent annual increase for turboprop aircraft, and a 2.6 percent annual increase for jet aircraft.

<u>Scenario 1</u> assumes Taos Regional Airport does not obtain an AOC necessary for CFR Part 121 air service but retains an expanded CFR Part 380 service provided by Taos Air. The generalized timeline of proposed service includes:

- 2020: Continuation of current level of service by Taos Air;
- 2021: Adding summer service in two markets;
- 2022: Adding summer service to two remaining markets;
- 2023: Increasing weekly service to one market;
- 2024: Increasing weekly service to one additional market and expanding summer service season;
- 2025: Increased weekly service to two markets;
- 2026: Increase to daily service during peak season and five times per week during off-peak seasons for one market;
- 2027: Increase to daily year-round service for one market;
- 2028: Increase one market to five weekly flights;
- 2029: Initiation of two new markets at three times per week during winter and summer months;

- 2030 and Beyond: Market maturity and capacity adjustments on an as-needed basis.

This scenario, listed in **Table 3-8**, results in 9,769 total annual operations and 28,631 passenger enplanements in 2040.

Table 3-8 Scenario 1: Part 380 Only

Year	Air Service Operations		General Aviation Operations		Military	Operation Total	Enplanement Total
	Air Carrier	Air Taxi	Local	Itinerant			
2020	0	360	2,577	4,030	200	7,167	3,755
2025	0	1,072	2,463	4,196	200	7,931	12,756
2030	0	2,003	2,354	4,390	200	8,947	22,534
2035	0	2,258	2,250	4,614	200	9,322	25,403
2040	0	2,545	2,150	4,874	200	9,769	28,631

Note: Does not include Part 135 enplanements

Source: Embark Aviation and Armstrong Consultants, Inc., 2020

Scenario 2 assumes the commencement of commercial air service by a CFR Part 121 airline within the short-term period in addition to expanded CFR Part 380 service offered by Taos Air. The generalized timeline of proposed service includes:

- 2020: Continuation of current level of service by Taos Air;
- 2021: Service duration and frequency increases, including summer service, increases for two markets;
- 2022: Summer service initiated to the two remaining markets;
- 2023: Summer frequency increased to two markets;
- 2024: Initiation of year-round service for one market and increased weekly seasonal service to one other market;
- 2025: Entry of three-times weekly regional airline service under major airline banner and adjustment of Taos Air schedule and destinations;
- 2026: Increase of regional airline service to five weekly flights;
- 2027: Increase of regional airline service to daily flights;
- 2028: Entry of second regional airline on three-times weekly schedule and increased capacity by first regional carrier during peak months;
- 2029: Adjustments by second regional airline to five weekly flights and year-round capacity increase by first regional carrier; and
- 2030 and Beyond: Market maturity and capacity adjustments on an as-needed basis.

This would only occur if the Airport were able to meet the facility and operational requirements to accommodate a CFR Part 121 carrier, which will be further evaluated in Chapter Four, *Facility Requirements*. This scenario, listed in **Table 3-8**, results in 10,147 total annual operations and 53,750 passenger enplanements in 2040.

Table 3-9 Scenario 2: Part 121 / Part 380 (Low)

Year	Air Service Operations		General Aviation Operations		Military	Operation Total	Enplanement Total
	Air Carrier	Air Taxi	Local	Itinerant			
2020	0	360	2,577	4,030	200	7,167	3,755
2025	0	1,312	2,463	4,196	200	8,171	16,386
2030	730	1,572	2,354	4,390	200	9,246	42,331
2035	730	1,864	2,250	4,614	200	9,658	47,700
2040	730	2,193	2,150	4,874	200	10,147	53,750

Note: Does not include Part 135 enplanements
Source: Embark Aviation and Armstrong Consultants, Inc., 2020

Scenario 3 assumes the commencement of commercial air service by a CFR Part 121 airline within the short-term period, on a larger scale compared to Scenario 2, in addition to expanded CFR Part 380 service offered by Taos Air. The generalized timeline of proposed service includes:

- 2020: Continuation of current level of service by Taos Air;
- 2021: Expansion of Taos Air service including frequency and seasonal duration;
- 2022-2023: Increased frequency and duration of service to two markets;
- 2024: Entry of daily regional airline service under major airline banner and adjustment of Taos Air schedule;
- 2025: Adjustments to regional airline capacity based on seasonal demand changes;
- 2026: Adjustments to regional airline capacity year-round;
- 2027: Entry of second daily regional airline;
- 2028: Adjustments to second regional airline capacity based on seasonal demand changes;
- 2029: Adjustments to second regional airline capacity year-round; and
- 2030 and Beyond: Market maturity and capacity adjustments on an as-needed basis.

This would only occur if the Airport were able to meet the facility and operational requirements to accommodate a CFR Part 121 carrier, which will be further evaluated in Chapter Four, *Facility Requirements*. This scenario, listed in **Table 3-10**, results in 10,482 total annual operations and 68,993 passenger enplanements in 2040.

Table 3-10 Scenario 3: Part 121 / Part 380 (High)

Year	Air Service Operations		General Aviation Operations		Military	Operation Total	Enplanement Total
	Air Carrier	Air Taxi	Local	Itinerant			
2020	0	360	2,577	4,030	200	7,167	3,755
2025	240	1,534	2,463	4,196	200	8,633	28,593
2030	1,488	1,086	2,354	4,390	200	9,517	54,318
2035	1,677	1,214	2,250	4,614	200	9,955	61,221
2040	1,890	1,368	2,150	4,874	200	10,482	68,993

Note: Does not include Part 135 enplanements
Source: Embark Aviation and Armstrong Consultants, Inc., 2020

These methods provide the likely estimate for future operations and enplanements at the Taos Regional Airport. The TAF was used for comparison, which forecasts 11,684 annual operations and no passenger enplanements throughout the planning period. **Figure 3-10** and **Figure 3-11** depict the operation and enplanement forecasts, respectively. Based on an evaluation of operations and enplanements forecast scenario 2 was selected as the preferred method as it reflects the anticipated growth for both Part 121 and Part 380 operators to continue into the future.

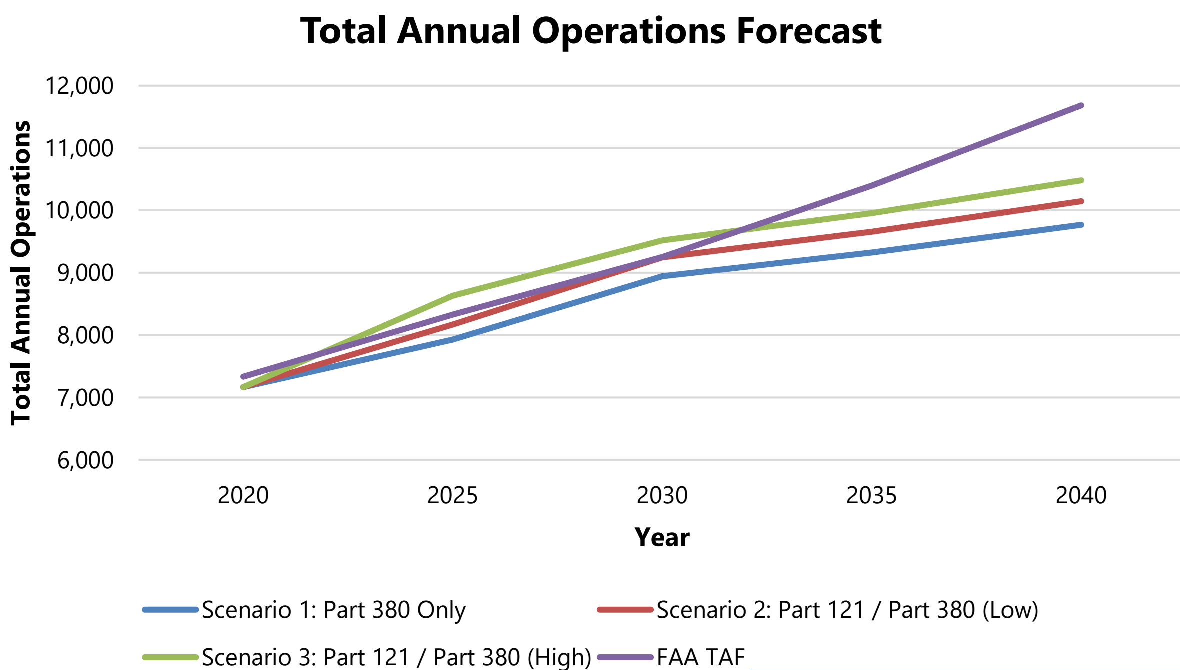


Figure 3-10 Total Annual Operations

Source: Armstrong Consultants, Inc., 2020; Federal Aviation Administration, 2020

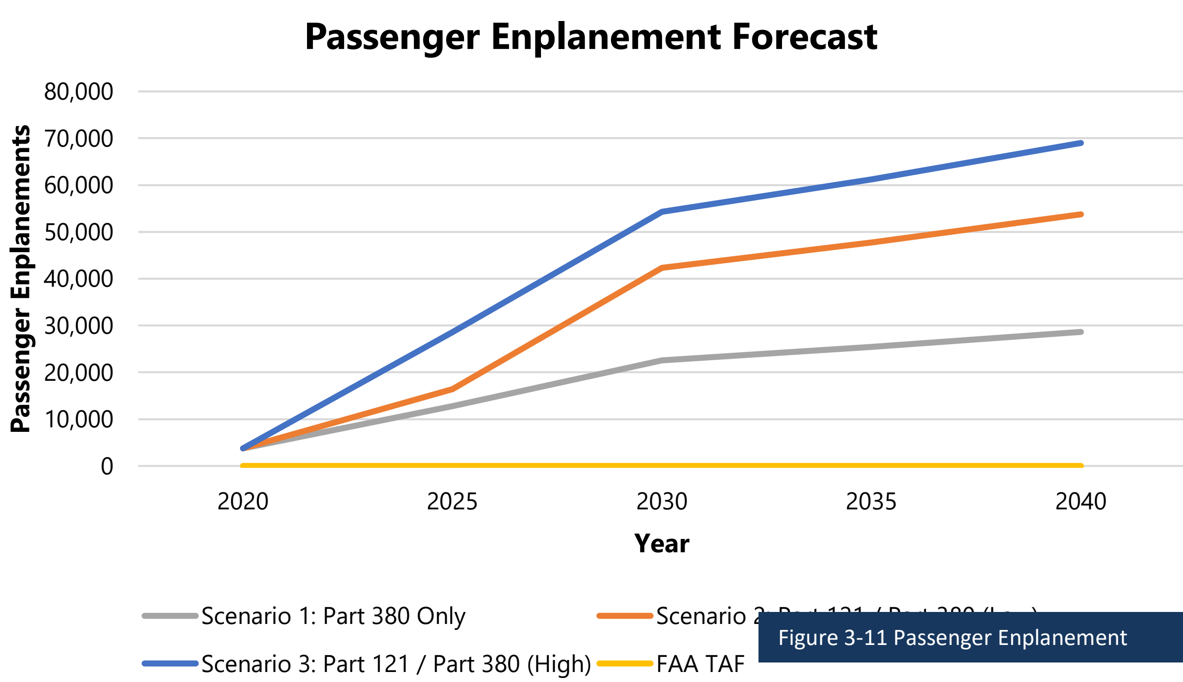


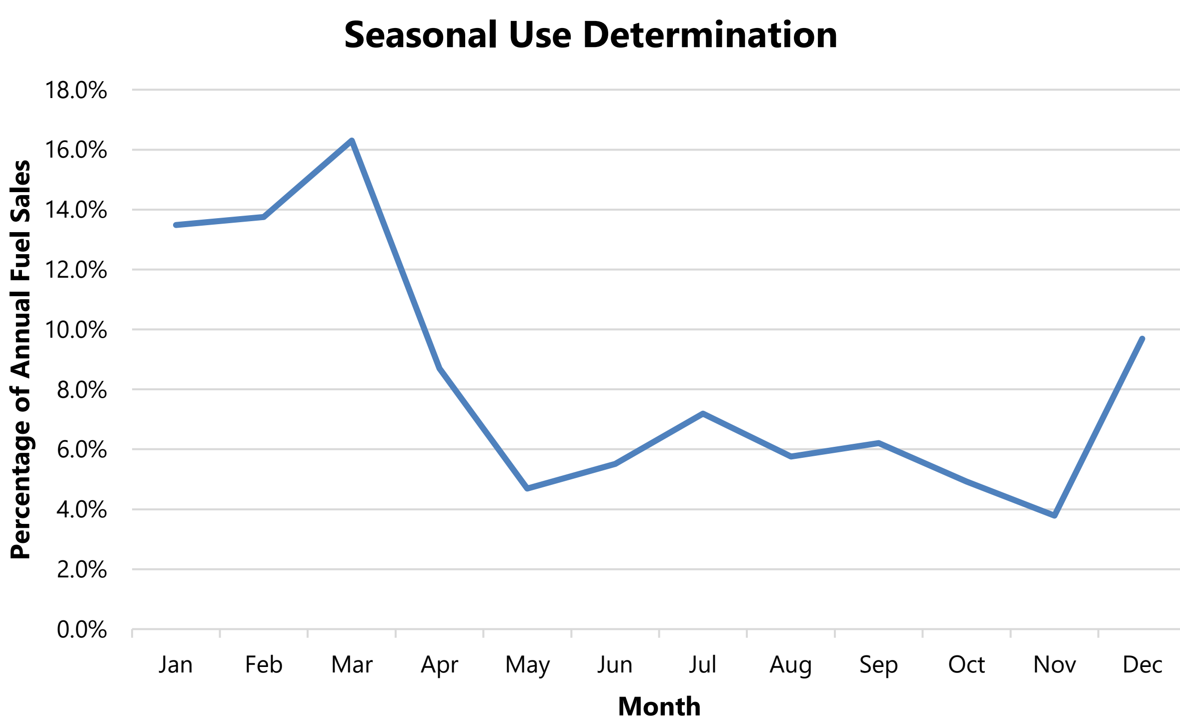
Figure 3-11 Passenger Enplanement

Source: Armstrong Consultants, Inc., 2020; Embark Aviation, 2020; Federal Aviation Administration, 2020

3.9 Seasonal Use Determination

Some level of seasonal fluctuation in aircraft operations can be expected at nearly all airports. This fluctuation is most apparent in regions of the country with severe winter weather patterns or in resort communities where the local economy is driven by tourism. The fluctuation is less pronounced at major hub airports, with a high percentage of commercial and scheduled airline activity.

Taos Aviation Service records indicated a fluctuation throughout with year with operations predominately throughout the winter months when weather is favorable for regional tourism activities. Lower activity traditionally occurs in the spring and summer months. The peak month of operations has been determined to be March, as shown in **Figure 3-12**, and this will be utilized to determine monthly/hourly peaking tendencies at the airport.



Source: Taos Aviation Services, 2020

Figure 3-12 Seasonal Use

3.10 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.

Airport management records were used as a tool to determine the peaking characteristics for Toas Regional Airport. Using the Seasonal Use information, a formula was derived which will calculate the average daily operations in a given quarter, based on the percentage of the total annual operations for that month, as determined by the graph. The formula is as follows:

$$M = A\,(T / 100)$$

$$D = M / (365 / 12)$$

Where T = Quarterly percent of use (from graph)

M = Average quarterly operations

A = Total annual operations

D = Average Daily Operations in a given quarter

Approximately 90% of total daily operations 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 quarter was, consequently, determined by compressing 90% of the Average Daily Operations (D) in a given quarter 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 quarter.

P = Peak Hourly Demand in a given month.

The calculations were made for each quarter of the planning period. The results of the calculations are shown in **Table 3-11**. The Design Day and Design Hour peak demand in the planning year occurs under VFR weather conditions in March (highlighted in bold), with an average of 54 daily operations and approximately 6.1 operations per hour in 2040.

Table 3-11 Monthly/Daily/Hourly Demand

Planning Year: 2025					Planning Year: 2030				
Operations: 8,171					Operations: 9,246				
		Operations					Operations		
Month	% Use	Monthly	Daily	Hourly	Month	% Use	Monthly	Daily	Hourly
January	13.5%	1,103	36	4.1	January	13.5%	1,248	41	4.6
February	13.8%	1,128	37	4.2	February	13.8%	1,276	42	4.7
March	**16.0%**	**1,332**	**43**	**4.9**	**March**	**16.0%**	**1,507**	**49**	**5.6**
April	8.7%	711	23	2.6	April	8.7%	804	26	3.0
May	4.7%	384	12	1.4	May	4.7%	435	14	1.6
June	5.5%	449	14	1.6	June	5.5%	509	16	1.8
July	7.2%	588	19	2.2	July	7.2%	666	21	2.5
August	5.8%	474	15	1.8	August	5.8%	536	17	2.0
September	6.2%	507	16	1.9	September	6.2%	573	18	2.1
October	4.9%	400	13	1.5	October	4.9%	453	14	1.7
November	3.8%	310	10	1.1	November	3.8%	351	11	1.3
December	9.7%	793	26	2.9	December	9.7%	897	29	3.3
Planning Year: 2035					Planning Year: 2040				
Operations: 9,658					Operations: 10,147				
		Operations					Operations		
Month	% Use	Monthly	Daily	Hourly	Month	% Use	Monthly	Daily	Hourly
January	13.5%	1,304	42	4.8	January	13.5%	1,370	45	5.1
February	13.8%	1,333	43	4.9	February	13.8%	1,400	46	5.2
March	**16.0%**	**1,574**	**51**	**5.8**	**March**	**16.0%**	**1,654**	**54**	**6.1**
April	8.7%	840	27	3.1	April	8.7%	883	29	3.3
May	4.7%	454	14	1.7	May	4.7%	477	15	1.8
June	5.5%	531	17	2.0	June	5.5%	558	18	2.1
July	7.2%	695	22	2.6	July	7.2%	731	24	2.7
August	5.8%	560	18	2.1	August	5.8%	589	19	2.2
September	6.2%	599	19	2.2	September	6.2%	629	20	2.3
October	4.9%	473	15	1.8	October	4.9%	497	16	1.8
November	3.8%	367	12	1.4	November	3.8%	386	12	1.4
December	9.7%	937	30	3.5	December	9.7%	984	32	3.6

Source: Armstrong Consultants, Inc., 2020

3.11 Annual Service Volume

Airfield capacity is determined by using an airport's Annual Service Volume (ASV). An airport's ASV has been defined by the FAA as "a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc., that would be encountered over a year's time." Therefore, ASV is a function of the hourly capacity of the airfield and the annual, daily, and hourly demands placed upon it. According to FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, the ASV for the single runway configuration for Taos Regional Airport is approximately 230,000 operations.

Based on existing and forecasted activity levels, operations are not expected to exceed two percent of capacity over the 20-year planning period. Therefore, no additional runways are needed to accommodate the existing or forecasted activity. **Table 3-12** summarizes the ASV relationship developed in this section.

Table 3-12 Annual Service Volume

Year	Total Annual Operations	Annual Service Volume	Annual Service Ratio
2020	7,167	230,000	3.1%
2025	8,171	230,000	3.5%
2030	9,246	230,000	4.0%
2035	9,658	230,000	4.2%
2040	10,147	230,000	4.4%

Source: FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*

3.12 Forecast Summary

Table 3-13 provides a summary of the preferred forecast for the Taos Regional Airport through the 20-year planning period, while utilizing the most current based aircraft data for the baseline year. **Table 3-14** shows the preferred forecast against the FAA TAF.

The FAA TAF's based aircraft levels vary from the actual baseline activity data for Taos Regional Airport. At the time of the TAF's development, the based aircraft figures utilized projections made on historical data which is no longer accurate. The construction of the Runway 13-31 has resulted in an increase in corporate aircraft as well as the development of air service at the airport.

Table 3-13 Preferred Forecast Summary

Year	Based Aircraft	Operations				Enplanements*
	Total	Air Service*	General Aviation	Military	Total	Total
2020	38	360	6,607	200	7,167	3,755
2025	45	1,312	6,659	200	8,171	16,386
2030	45	2,302	6,744	200	9,246	42,331
2035	45	2,594	6,864	200	9,658	47,700
2040	45	2,923	7,024	200	10,147	53,750

Source: Armstrong Consultants, Inc., 2020

* The preferred forecasts reflect a scenario in which a regional airline provides service at the Taos Regional Airport.

Table 3-14 FAA TAF Comparison

Year	Total Enplanements		Total Based Aircraft		
	Airport Forecast	TAF	Airport Forecast	TAF	Difference
2020	3,755	0	38	37	2.7%
2025	16,386	0	45	40	12.5%
2030	42,331	0	45	40	12.5%
2035	47,700	0	45	40	12.5%
2040	53,750	0	45	40	-6.25%

Year	Itinerant Operations			Local Operations		
	Airport Forecast	TAF	Difference	Airport Forecast	TAF	Difference
2020	4,590	4,608	-0.4%	2,577	2,726	-5.5%
2025	5,708	5,166	10.5%	2,463	3,071	-19.8%
2030	6,892	5,793	19.0%	2,354	3,462	-32.0%
2035	7,408	6,501	14.0%	2,250	3,896	-42.2%
2040	7,997	7,295	9.6%	2,150	4,389	-51.0%

Year	Total Operations		
	Airport Forecast	TAF	Difference
2020	7,167	7,334	-2.3%
2025	8,171	8,237	-0.8%
2030	9,246	9,255	-0.1%
2035	9,658	10,397	-7.1%
2040	10,147	11,684	-13.2%

Source: FAA Terminal Area Forecast, 2020