


Airport Multi-Modal Master Plan and Airport Layout Plan Update

Doña Ana County International Jetport
Santa Teresa, New Mexico

Bohannan Huston

DOÑA ANA COUNTY INTERNATIONAL JETPORT MULTI-MODAL MASTER PLAN 2017

Santa Teresa, New Mexico

Prepared for

DOÑA ANA COUNTY

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On February 27, 2018, the Doña Ana County Board of County Commissioners voted to approve the Master Plan.

DOÑA ANA COUNTY INTERNATIONAL JETPORT AT SANTA TERESA

DOÑA ANA COUNTY INTERNATIONAL JETPORT

The Doña Ana County International Jetport is a general aviation airport that accommodates over 41,500 annual operations and is home to over 160 aircraft. As a reliever to El Paso International Airport, located 26 miles southeast, the Jetport is highly attractive to business, private and government aviation users in the region offering a broad range of desirable airport facilities and services.

The Jetport is just eight miles from Interstate 10, 10 miles from the less congested Santa Teresa border crossing with its 12-mile radius overweight zone, and next door to an industrial park with several logistics service providers. Another plus is the $400 million Union Pacific Railroad terminal that opened in 2014, which has spurred economic growth for the region. With El Paso's limited capacity for industrial park expansion, Santa Teresa offers more suitable opportunities for such development. The Jetport's presence combined with these area attributes suggest continued growth, which is pointed out in the latest master plan study completed for the Jetport.

MASTER PLAN HIGHLIGHTS

Doña Ana County invites you to explore what the Jetport has to offer and what is planned for the future as a result of the master planning study completed in 2017, and adopted by the County in February 2018.

This brochure provides an overview of the Jetport's facilities and services and presents the aviation activity forecasts and proposed development program. The master planning study followed Federal Aviation Administration (FAA) guidelines and included a community outreach program to ensure findings were made available to the public for review and comment throughout the process. The County worked closely with the New Mexico Department of Transportation Aviation Division, the FAA, aviation users, the business community, and other stakeholders throughout the study.

The County is committed to the continued success and improvement of the Jetport, which is recognized as an asset to the community, the state and national airport systems, and ongoing border area economic development.

Doña Ana County invites you to explore what the Jetport has to offer and what is planned for the future.

THE JETPORT'S STORY

Santa Teresa, home to the Doña Ana County International Jetport, is five miles from the city limits of El Paso, Texas, an estimated 21 miles from downtown El Paso, and 40 miles from Las Cruces, New Mexico. Constructed in the early 1980's, the Jetport has seen substantial growth over the years.

The runway was widened and extended, hangars for small and large aircraft have been constructed and filled with the growing number of tenants, new businesses and government agencies have based their operations there, the War Eagles Air Museum has attracted visitors from all over, and traffic has increased with a broad spectrum of aircraft from small single engine piston aircraft up to large corporate jets.

Owned and operated by Doña Ana County, the Jetport draws revenues to cover operating expenses, but receives federal and state grants to assist with airport capital improvements. Federally-funded projects are typically split among three sources: FAA 90%, State 5%, and County 5%. State-only projects are typically funded up to 90%, with the County funding the 10% balance. Based on available records since 2000, more than $13.7 million has been invested in the Jetport for capital improvements of which $12.9 million was funded with FAA and State grants. Private funding sources have also invested in the Jetport with the most recent covering additional hangars and a taxiway.

JETPORT FEATURES

- FAA identifier: KDNA
- Property: 1,712 acres
- Elevation: 4,112.8 feet mean sea level
- Owner/Operator: Doña Ana County
- Funding: Jetport Revenues, Federal (FAA), State (NMDOT Aviation), County, Private
- Economic Impact: $14.9 million

FACILITIES AND SERVICES

- International Airport of Entry
- Runway 10-28, 9,550 x 100 feet (asphalt)
- Non-precision RNAV (GPS) approach
- Pilot-controlled MIRL, REIL, PAPI
- Full-length parallel taxiway, lighted
- AWOS III
- Lighted wind indicator/segmented circle
- FBO Terminal, full-service FBO
- Jet-A & 100LL, Major A &P
- Airport Administration & Conference Room
- HAZMAT
- US Customs
- War Eagles Air Museum
- 65,400 square yards of ramp
- 30+ Corporate/conventional hangars
- Eight banks of T-hangars
- Three banks of shade structures

AVIATION ACTIVITY

The Jetport accommodates a wide variety of air traffic such as small single- and multi-engine aircraft, business jets, turboprops, and civilian and military helicopters. Airport users include transient operators as well as the pilots based at the Jetport. With several commercial tenants, the Jetport attracts transient activity to those businesses. Flight training available at the Jetport also attracts activity including users from Mexico. Typical measurements of aviation activity include the based aircraft count and annual airport operations.

In 2015, the Jetport was home to 153 aircraft and accommodated an estimated 41,500 annual operations. Steady growth of based aircraft is anticipated with a forecast of 179 (including 23 jets) by 2025. The County's recent count reveals that the total aircraft based at the Jetport has already exceeded 160. Operations are forecast to reach 55,800 annually by 2025, a 34 percent increase. These operations consist of local and itinerant general aviation (GA) operations, air taxi, and military.

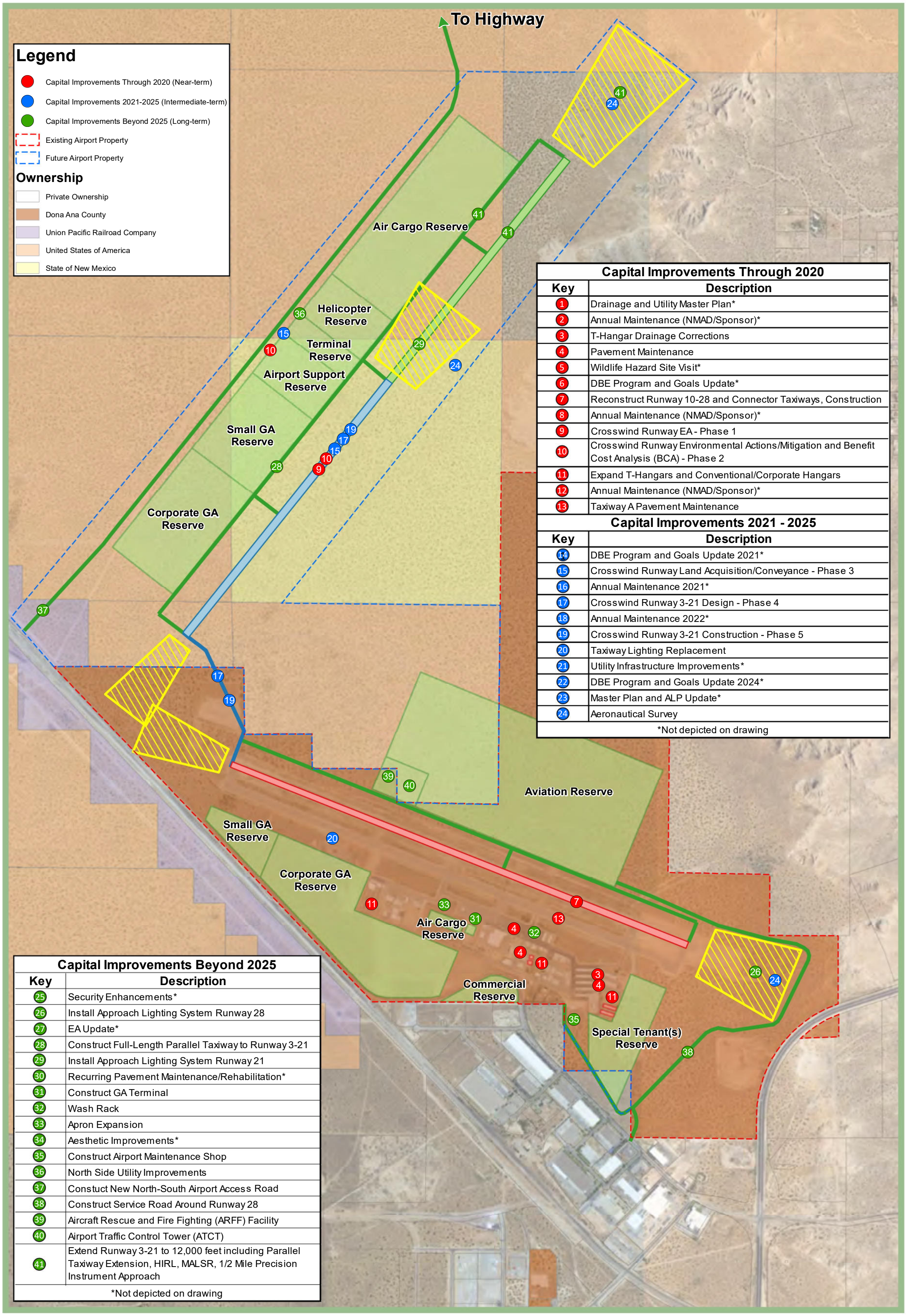
An air cargo study, prepared concurrently with the master plan, identifies market potential for the Jetport. This market potential considered the healthy economic growth in the border area and the Jetport's favorable location with the adjacent logistics park, proximity to the less-congested Santa Teresa border crossing and nearby business activity that could replace ground transport with more timely air transport.

One nearby company's routine use of ground transport inbound from Los Angeles was highlighted in the study noting the significant time savings if air transport from Los Angeles to the Jetport were used. This could translate to routine B737 flights to accommodate the current and growing demand identified by the company.

Area economic growth is further driven by the New Mexico Overweight Zone around the Santa Teresa Port of Entry, which has already spurred growth at the four industrial parks in Santa Teresa. As El Paso nears capacity for industrial development in the area, future needs can be accommodated in Santa Teresa. Such growth is anticipated to prompt increased aviation demand at the Jetport.

FUTURE PLANS

The County selected a preferred development plan to address near-term to long-term needs. While numerous facilities offer sufficient capacity to accommodate demand forecast throughout the planning period, others require modification and/or expansion to accommodate future activity, satisfy new FAA design standards, and improve the airport's operational capabilities. The following summarizes the Jetport's future projects and illustrates the phased development plans.



Capital Improvements Through 2020

Key	Description
1	Drainage and Utility Master Plan*
2	Annual Maintenance (NMAD/Sponsor)*
3	T-Hangar Drainage Corrections
4	Pavement Maintenance
5	Wildlife Hazard Site Visit*
6	DBE Program and Goals Update*
7	Reconstruct Runway 10-28 and Connector Taxiways, Construction
8	Annual Maintenance (NMAD/Sponsor)*
9	Crosswind Runway EA - Phase 1
10	Crosswind Runway Environmental Actions/Mitigation and Benefit Cost Analysis (BCA) - Phase 2
11	Expand T-Hangars and Conventional/Corporate Hangars
12	Annual Maintenance (NMAD/Sponsor)*
13	Taxiway A Pavement Maintenance

Capital Improvements 2021 - 2025

Key	Description
14	DBE Program and Goals Update 2021*
15	Crosswind Runway Land Acquisition/Conveyance - Phase 3
16	Annual Maintenance 2021*
17	Crosswind Runway 3-21 Design - Phase 4
18	Annual Maintenance 2022*
19	Crosswind Runway 3-21 Construction - Phase 5
20	Taxiway Lighting Replacement
21	Utility Infrastructure Improvements*
22	DBE Program and Goals Update 2024*
23	Master Plan and ALP Update*
24	Aeronautical Survey

*Not depicted on drawing

Capital Improvements Beyond 2025

Key	Description
25	Security Enhancements*
26	Install Approach Lighting System Runway 28
27	EA Update*
28	Construct Full-Length Parallel Taxiway to Runway 3-21
29	Install Approach Lighting System Runway 21
30	Recurring Pavement Maintenance/Rehabilitation*
31	Construct GA Terminal
32	Wash Rack
33	Apron Expansion
34	Aesthetic Improvements*
35	Construct Airport Maintenance Shop
36	North Side Utility Improvements
37	Constuct New North-South Airport Access Road
38	Construct Service Road Around Runway 28
39	Aircraft Rescue and Fire Fighting (ARFF) Facility
40	Airport Traffic Control Tower (ATCT)
41	Extend Runway 3-21 to 12,000 feet including Parallel Taxiway Extension, HIRL, MALSR, 1/2 Mile Precision Instrument Approach

*Not depicted on drawing

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Introduction

In March 2015, Doña Ana County International Jetport at Santa Teresa (Jetport) initiated a Multi-modal Airport Master Plan Study. The New Mexico Department of Transportation, Aviation Division (NMAD) provided a grant to fund 90% of the study with Doña Ana County providing a 10% match for the balance. In March 2016, an air cargo study was authorized so its findings and recommendations could be considered during the master planning effort.

PURPOSE OF MASTER PLAN

Airport master plans are undertaken to improve decision-making over capital resource plans by examining future aviation demand and identifying long-term infrastructure needs. The purpose of this study is to update the previous master plan published in 2008. Much has changed since the last master plan, including the publication of new Federal Aviation Administration (FAA) guidance regarding airport design standards, an economic recession and subsequent slow recovery that had a significant impact on the aviation industry, changes in aviation demand, and changes in the character of the Jetport, such as tenants, number and types of based aircraft, and usage.

Additionally, the FAA recommends airport master plans be updated every five to seven years or as necessary to keep them current. Doña Ana County's last master plan for the Jetport is eight years old. Since that study, the Jetport has completed several projects and the aviation industry has undergone major changes, making this update timely.

OVERVIEW OF PROCESS

This findings in this study are documented in a series of chapters, which have been reviewed throughout the process. Comments served as input for subsequent chapters, and were incorporated into revised chapters for the comprehensive report. The Master Plan follows a defined process outlined by the FAA's Advisory Circular (AC) 150/5070-6B, Airport Master Plans, and in the scope of work defined for this study in coordination with the NMAD and Doña Ana County. Five chapters follow this Introduction:

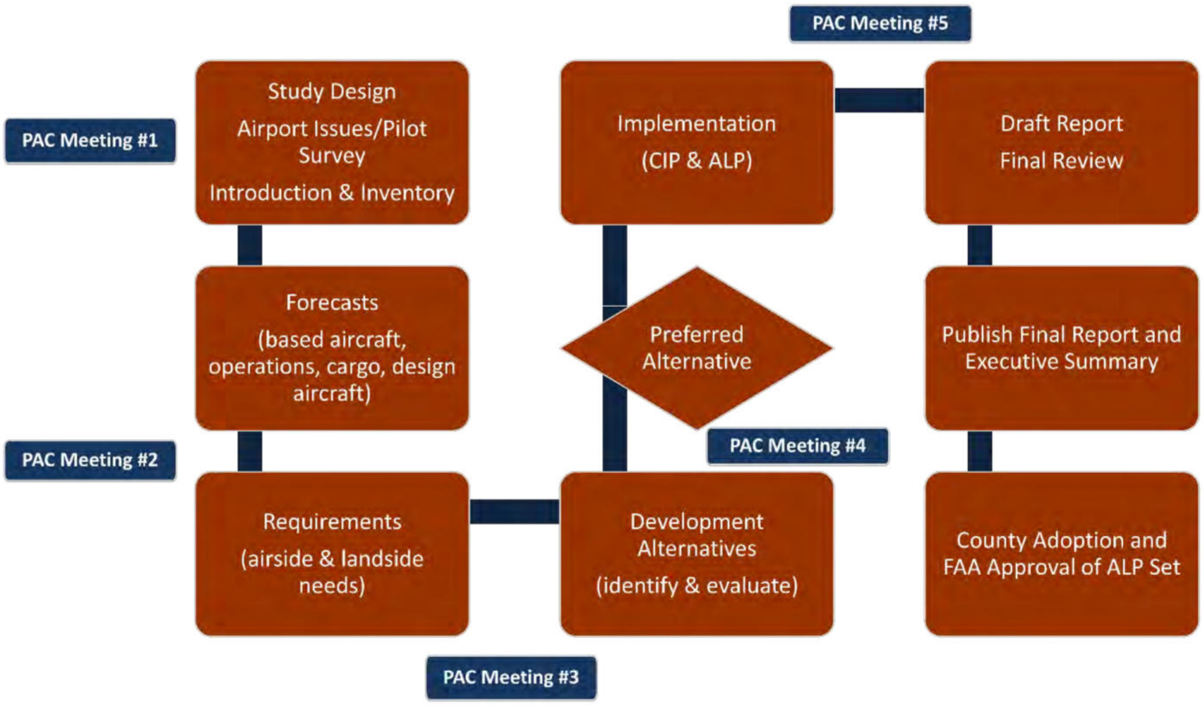
- Chapter One - Inventory
- Chapter Two - Forecasts
- Chapter Three - Facility Requirements
- Chapter Four - Alternatives
- Chapter Five - Implementation

In Chapter One, Inventory, existing conditions at the Jetport at are presented. A review of national, state, and local aviation trends followed by a projection of aviation demand is covered in the Forecasts (Chapter Two). Chapter Three, Facility Requirements, includes an evaluation of the existing airport facilities and the capability of these facilities to safely and efficiently accommodate the anticipated aviation demand.

Chapter Four, Alternatives, presents various long-term alternatives created to provide development options for meeting facility needs while complying with FAA design standards. These alternatives are evaluated and conclude with a recommendation to and approval by to the County for a development plan that meets the long-term vision for the Airport.

Lastly, Implementation (Chapter Five) provides details for a 10-year airport development plan with project cost estimates and a proposed schedule of airport improvement projects in priority ranking that the County has reviewed and concurred. Also included as part the Jetport's master planning process is an updated Airport Layout Plan (ALP). The ALP update graphically depicts current facilities and the County's long-term development plans based on the preferred alternative. The ALP is prepared in accordance with FAA design standards to ensure the Jetport remains eligible for federal and state funding support.

The following flowchart illustrates the sequence of study tasks completed. Meetings of the Planning Advisory Committee coincided with important steps in the planning process.



AIRPORT ISSUES

The identification of airport issues in the early planning stages is key to a successful study. Before outlining the airport issues addressed in this study, a recap of the 2008 master plan's issues as well as the associated recommendations (findings) and their status is presented.

2008 MASTER PLAN

The following summarizes the key issues outlined in the previous study, some of which have changed and/or remain today.

- *Relationship with El Paso International Airport (cargo, corporate and other general aviation).* El Paso International Airport (ELP) continues to serve air cargo needs in the region. However, the Jetport serves as a reliever for ELP. One Jetport tenant was providing regular air cargo service during the last master plan. While that service was discontinued, the tenant has plans to restart the air cargo operation. Some ELP corporate and other general aviation tenants have migrated to the Jetport where daily operations are less complicated than activity at a commercial airport with higher security. Reduced taxes associated with aircraft based in New Mexico continues to be an incentive for aircraft owners.

- *Various general aviation (GA) segment facility and service needs*. The previous master plan identified the need for additional facilities and services to better serve the corporate and other GA users. The County has continued to improve facilities and services to make the Jetport a more functional and practical choice for all GA segments and the number of based aircraft has grown. However, some of the facilities and services identified by corporate pilots remain on the Jetport's list of needed improvements, such as a precision instrument approach, a better location for the fuel farm, and a terminal building, although the Fixed Base Operations (FBO) facilities offer terminal building amenities. The GA community requested a crosswind runway, which remains a high priority for smaller and lighter aircraft today due to consistent strong crosswinds.
- *Regional economic growth, international aircraft and Customs, Free Trade Zone (FTZ).* The region is showing healthy economic growth as a result of attracting new companies as well as the recent expansion/growth of those already in place. The FTZ has benefited area business activity. A new United States Customs Facility also opened at the Jetport since the last master plan which provides aircraft arriving from Mexico with US Customs clearance.
- *Land use compatibility with adjacent development, railroad.* Coordinating with the FAA and completing appropriate airspace reviews have been important in the ongoing development near the Jetport. The County has land use controls in place and continues to monitor potential impacts and ensure the safe and efficient operation of the Jetport.
- *Secure facility/area for federal agencies.* A new United States Customs and Border Patrol facility opened in November 2014, providing the necessary equipment and security needed for aircraft arriving from south of the border to clear US Customs.
- *Utility infrastructure.* This is an ongoing issue for the Jetport as new development occurs and utilities are expanded.
- *Hangar demand.* Since the last plan, the Jetport has seen continued development of both T-hangars and conventional/corporate hangars. However, a lengthy waiting list

for hangar storage remains as the increase in based aircraft has filled the available hangar space.

- *Taxiway/taxilane system*. Improvements to aircraft movement areas have enhanced the safety of aircraft ground activity, and reduced some of the congestion problems. Some additional improvements remain in the Jetport's plans as recent hangar development requires additional access improvements for both aircraft and vehicles.

Findings (recommendations) in the 2008 study as well as their status are outlined here:

- *Extend Runway 10-28, strengthen for jet traffic*. The east 1,050-foot runway extension was completed in 2011, but pavement strengthening needs reevaluation.
- *Crosswind runway in a phased development plan (5,700' initial length) with protection for ultimate 12,000 feet in distant future for cargo potential*. The Bureau of Land Management (BLM) land transfer needed for the proposed crosswind is on hold and total runway length, strength and alignment need reevaluation.
- *Taxiways/taxilanes to relieve congestion, allow expansion.* Improvements are ongoing.
- *Additional hangars*. Small GA continues to expand at the east end of the Jetport while corporate GA continues to expand at the west end.
- *Pavement maintenance.* An established pavement maintenance management program is in place in coordination with NMAD.
- *Instrument approach improvements, lighting*. The airfield is limited to a non-precision instrument approach to Runway 10 and there is continued interest in a precision approach.
- *Replace Airport Admin Building*. The airport administration building has been replaced. Airport management office space/conference rooms are temporarily in the new Hazmat building; however, a stand-alone airport administration/terminal building is still in the overall development plan
- *Construct Airport Maintenance Building*. A new airport maintenance building has not been constructed. Equipment and supplies are currently stored in other existing facilities or staged on the apron, as needed.
- *Road improvements for safety, efficiency, security, image improvement, and access to future development.* Improvement to the airport access roadway/entrance alignment has been made, but other improvements are still planned.

- *Auto parking.* Auto parking, including paving, has been added as both business and private tenants have expanded. Unpaved parking causes a dust problem. Auto parking will continue to be an ongoing need with growth.
- *Security fencing/gates to improve the control of access to aircraft operating areas.* Additional fencing has been installed in the building areas to enhance security and prevent unauthorized access to the aircraft movement areas. Additional restricted access gates have also been installed.

CURRENT 2016 MASTER PLAN

In coordination with Doña Ana County, NMAD, FAA, airport users, and other stakeholders, a preliminary list of airport issues was identified. To expand and build upon the list of issues, an airport user survey questionnaire was posted online with postcards mailed to area aircraft owners inviting them to complete the survey. The FAA Registry was used to prepare the mailing list consisting of Doña Ana County and a select western portion of El Paso County aircraft registrants. A total of 188 postcards were mailed.

Aircraft registrations in the selected geographic area exceed 188, but only one postcard was mailed to an addressee with multiple aircraft registrations. A paper version of the survey was also prepared and distributed at the Jetport to further encourage responses. A total of 36 online survey responses were received—a 19% response rate. An additional 12 survey responses were received from the paper versions distributed.

The top issues identified by the respondents (in order of most frequent mention) included the need for the following:

- Crosswind runway
- Certified weather observation system (AWOS) – the Super AWOS does not provide FAA-certified weather (Note: Installation and activation of a new AWOS III P/T was completed during the master planning study)
- Improved instrument approach, additional approach, precision capability
- Public restrooms, possibly near self-serve fuel pumps
- Additional hangar space including small and large hangars, T-hangars
- Taxiway improvements -- improve and complete access
- Dedicated wash rack area, possibly near shades
- Competitive fuel service -- lower self-serve fuel price, additional fuel vendor/FBO

Other issues identified with less frequency by the survey respondents include:

- Airport Identifier – change designation to KDNA (Note: The request to change the Jetport's location identifier code from 5T6 to DNA, or KDNA for international reference, was completed prior to the master plan publication.)
- Security enhancements -- lighting in hangar areas, fencing improvements, more airfield security with perimeter control and onsite security (including nighttime), enforce restricted access (including no dune buggies)
- Various pavement issues/improvements -- resurface existing runway; modify pavement near green hangars (should not be inclined) and there should be a curb that would help prevent planes from rolling into the desert; additional ramp space; weight bearing approved and reported taxiways (standard width) and ramps.
- Part 139, Class IV, certification
- Promote growth – county/state incentives to base more aircraft at airport, including commercial freight operators; advertise to attract more cross-country GA aircraft
- Compliance – proper aviation use of county-owned hangars for aircraft -- there is a waiting list for hangar rental; need hangar inspections
- Auto access – better roads to the airport; dedicated road connecting Airport road to the Jetport to avoid shared use with large trucks/18-wheelers; improved access to far west development area
- Emergency – approved firefighting services based on airport
- Operations – timely/accurate issuance of NOTAMs (notices to airmen) concerning flight safety issues at the airport based on daily inspections. Example is that NOTAM on lighting activation frequency is incorrect.
- Maintenance – more frequent/regular sweeping for removal of FOD (foreign object debris). Weed removal/maintenance. Pavement maintenance including routine crack filling. Pilot controlled lighting has been out at times. Problem with PAPI (precision approach path indicator) and runway lighting on same control frequency.
- Signage: Runway distance remaining markers
- Other: Compass Rose (this has since been completed by the local 99s chapter)

The above issues relevant to the master planning study scope of work are addressed in the appropriate chapter; most are incorporated into the discussion in Chapter Three, Facility Requirements, which contains a comprehensive list of future improvement needs.

In addition to the issues discussed above, the Airport Advisory Board (AAB) identified several factors needing consideration during the master planning and air cargo studies. These area influences may stimulate growth at the Jetport so consideration for them during the identification and evaluation of long-term airport development alternatives was important. In a high growth scenario, aviation demand could exceed the FAA's projections for operations and based aircraft at the Jetport.

- Santa Teresa Industrial Park – 225 industrial-zoned acres with two million square feet of industrial space built and over three million square feet planned for new development
- Bi-national Industrial Park adjacent to the Santa Teresa/San Jerónimo International Port of Entry – additional 230 acres of industrial-zoned real estate
- Foxconn computer manufacturing facility – over 50,000 units per day manufactured and shipped world wide
- Santa Teresa POE which has recently been improved to allow for more efficient movement across the border for both truck freight and automobiles
- Union Pacific intermodal facility – anticipated to attract more industries to the industrial parks

PLAN GOALS

The Master Plan goals should guide the County's near- to long-term development plans for airside, landside and support facilities at the Jetport. Similar to past goals outlined in the statewide airport system plan, the following goals were identified for this study:

- Enhance safety and security
- Support economic growth
- Accommodate additional demand
- Preserve/protect investment

These goals served as a tool in evaluating the long-term development alternatives for the Jetport in Chapter Four, Alternatives.

Also notable are the goals identified in the Doña Ana County's FY16 budget discussion of the Jetport—both of which align well with the Master Plan goals noted above:

- *Continue to maintain financial sustainability through managing resources and funding to deliver the highest quality services to our citizens and community….to be accomplished by developing land leases, aircraft hangar rentals, commercial aeronautical enterprises,* *fuel sales and other sources of income to cover salaries, benefits, and operating expenditures.*

- *Market airport property and services to increase revenue through new tenant contracts, contract renewals and commercial aeronautical enterprises.*

PUBLIC INVOLVEMENT

Community outreach is important to the successful implementation of a planning study. A public involvement program is established to assist with the community outreach effort offering opportunities for the community to learn about the study, ask questions, and provide input. The County's public involvement program for this study includes the following:

- Airport User Survey: As mentioned previously, a survey questionnaire was prepared to invite airport users and other stakeholders to provide comments about the Jetport's needs. The survey was available online as well as in a paper version.
- Planning Advisory Committee Meetings: Doña Ana County established a Planning Advisory Committee (PAC), which is a committee representing a cross section of the community and representatives from NMAD and the FAA. The PAC members served as community liaisons and participated in six work sessions through the planning process—five scheduled study meetings and one supplemental meeting. They discussed airport issues, study progress, and key findings. They also reviewed and evaluated development concepts, and provided review comments and questions on draft materials. PAC members were invited to share their knowledge of the study findings with the public. The first PAC meeting/work session was held in March 2015, and the final one was held in April 2017.
- Public Information Workshop/Open House: The County held one public open house during the evaluation of development alternatives for the Jetport in September 2016. The open house followed PAC Meeting #4 and served as a public information workshop to allow the public to ask questions, identify concerns, and provide input to the study. The open house preceded the County's official selection of a preferred development alternative for the Jetport.
- Published Draft Report Materials: To keep the public informed, the County maintained copies of the draft study materials for public review and advertised the availability of the comprehensive draft report for additional comments before the study concluded. Public comment sheets were available for individuals to provide their comments.

VISION AND AIRPORT ROLE

VISION

While this planning update focuses on aviation demand and necessary capital improvements within the 10-year planning window, Doña Ana County's overall strategy for airport development is based on their long-term vision. That vision is to continue growing into its role as a major economic engine in the region and as part of the expanding multi-modal network that attracts business to the area. This vision reaches out well beyond a decade, and would more appropriately be referred to as a 50-year outlook.

In the last master planning study, the County incorporated their vision statement for the Jetport into the planning process. Stakeholders concurred with the vision statement but the report stated that "...some expressed concern about placing too much emphasis on future cargo at the risk of overlooking the growing corporate aviation element." The full-length version of the vision statement was included in the previous master plan's appendices, but a summary was presented in four bullet points in the Introduction section of the report as follows:

- *Continue to be a convenient alternative to the more congested El Paso Airport for cargo service, executive, and other general aviation.*
- *Develop into a business and cargo facility, supported by regional economic growth, the availability of Customs Service to international aircraft, and the Free Trade Zone.*
- *Provide a secure facility for use by Federal Agencies.*
- *Provide a designated general aviation area to enhance the relationship with the El Paso International Airport and serve smaller aircraft operators.*

Although the Jetport has not cultivated regular air cargo activity, to date, the County remains committed to reviewing and pursuing the air cargo market potential as the region's economic growth continues. Further, an air cargo study was conducted to run concurrently with and provide input into the master planning process. A copy of the air cargo study report is included in the appendices. Findings from the air cargo study may assist the County in reevaluating its vision statement that pertains to the air cargo market in the future. Elements of the master planning study may also assist the County in updating the vision statement for the Jetport, particularly since the County is seeing steady growth in corporate/business aviation—a segment that is also growing nationally. Further, there are business jet owners/operators finding it beneficial to locate at the Jetport rather than basing at El Paso International.

AIRPORT ROLE

This section describes the role of the Jetport within the national and state systems of airports. The Jetport is identified by the FAA as one of the nation's 2,553 GA airports that are included within the National Plan of Integrated Airport Systems (NPIAS). GA airports do not have scheduled passenger service. The criteria that qualify an airport for inclusion in the NPIAS are the airport has at least 10 based aircraft and is located at least 20 miles (30 minutes' drive time) from another NPIAS airport. The Jetport meets these qualifications.

Airports included in the NPIAS are considered "significant to the national air transportation system" and are therefore eligible to receive Federal grants under the Airport Improvement Program (AIP). Under the current AIP, federal grants cover up to 90% of GA eligible costs including planning, development and noise compatibility projects. The County commits to complying with a set of FAA grant assurances when a funding grant is accepted for a 20-year period from the date of the grant. Among other things, these assurances require the County to promote compatible land use around the Jetport, operate and maintain the Jetport in a safe and serviceable condition, mitigate hazards to airspace, and use airport revenue properly.

After years of identifying a broad range of airports as GA, the FAA initiated a study to subdivide GA airports. FAA's *General Aviation Airports: A National Asset*, published in May 2012, divided the general aviation airports into four categories based on existing activity measures such as the number and types of based aircraft, as well as the volume and types of flights. The four categories are national, regional, local, and basic. The document classifies the Jetport as a regional airport, which is defined as supporting regional economies by connecting communities to statewide and interstate markets. Further, regional airports are described as having "*high levels of activity with some jets and multiengine propeller aircraft averaging about 90 total based aircraft including 3 jets."* The Jetport fits well into this FAA category of GA airports.

The New Mexico Airport System Plan Update (NMASPU) 2014 designated the Jetport as a Regional General Aviation Airport, which is the same functional role identified for the Jetport in the NMAPSU 2009. However, the definition of Regional General Aviation was modified in the 2014 update, and described as follows:

> *Regional General Aviation airports primarily serve general aviation activity, with a focus on business activity including jet and turboprop aircraft. This is measured by more than 300 annual jet or turboprop aircraft operations based on information from FAA's Traffic Flow Management System Counts (TFMSC) database. These airports support the system of Commercial Service airports and provide significant coverage to the State's population.*

They are also located within a 30-minute drive of more than three percent of the state's population and have more than 33 based aircraft, including at least one jet.

Designating a role for each airport in the state airport system helps to distinguish between the various levels of service and activities associated with each across the state. The NMASPU 2014 carried forward the six different role classifications identified in the 2003 and 2009 studies. In the 2014 study, New Mexico's 61 airports in the statewide system are divided into six roles as follows:

- Primary Commercial Service – 4
- Non-primary Commercial Service – 2
- Limited Commercial Service – 3
- Regional GA – 4
- Community GA – 19
- Low Activity GA – 29

Chapter One
INVENTORY

The Inventory Chapter documents the present, or baseline, conditions of the Doña Ana County International Jetport at Santa Teresa (Jetport) and the surrounding area. Within this chapter, pertinent information is presented on existing airport facilities and services, current aviation activity, area airspace, environmental factors, and the community. An understanding of the existing airport facilities is important in determining improvement needs to meet aviation demand, comply with the latest Federal Aviation Administration (FAA) guidance, and to address the County and other stakeholder/user needs. The environmental inventory will serve the future planning and development process, particularly when evaluating various development alternatives for potential environmental impacts.

Specifically, this chapter consists of numerous sections addressing regional setting, airport history, airport ownership and management, current aviation activity, economic impact, existing facilities, airspace, land use and environmental inventory.

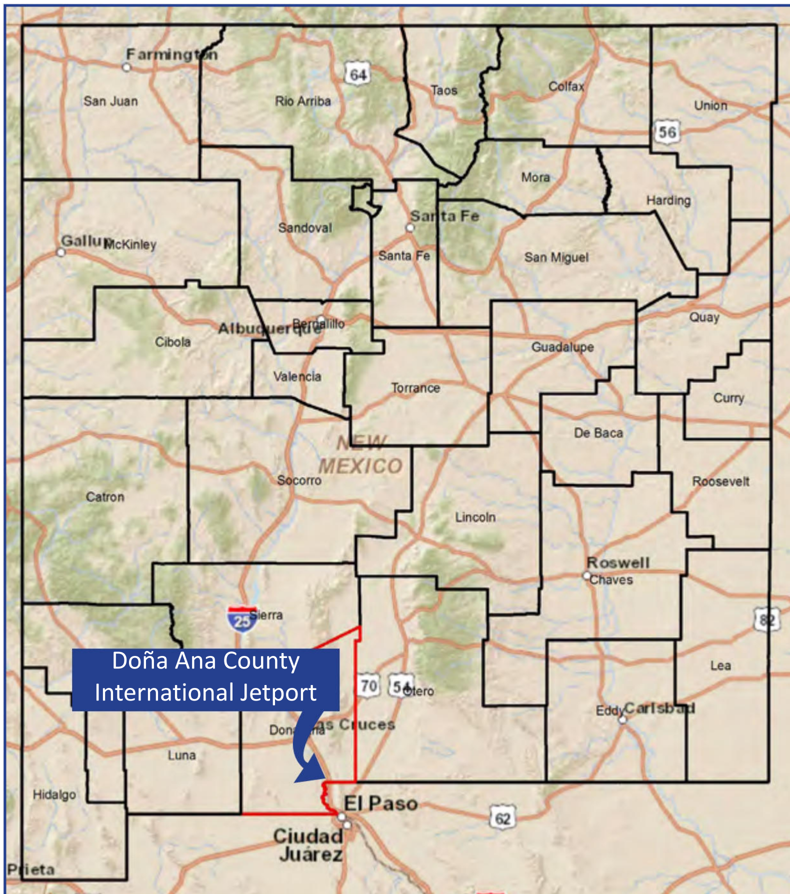
I. REGIONAL SETTING

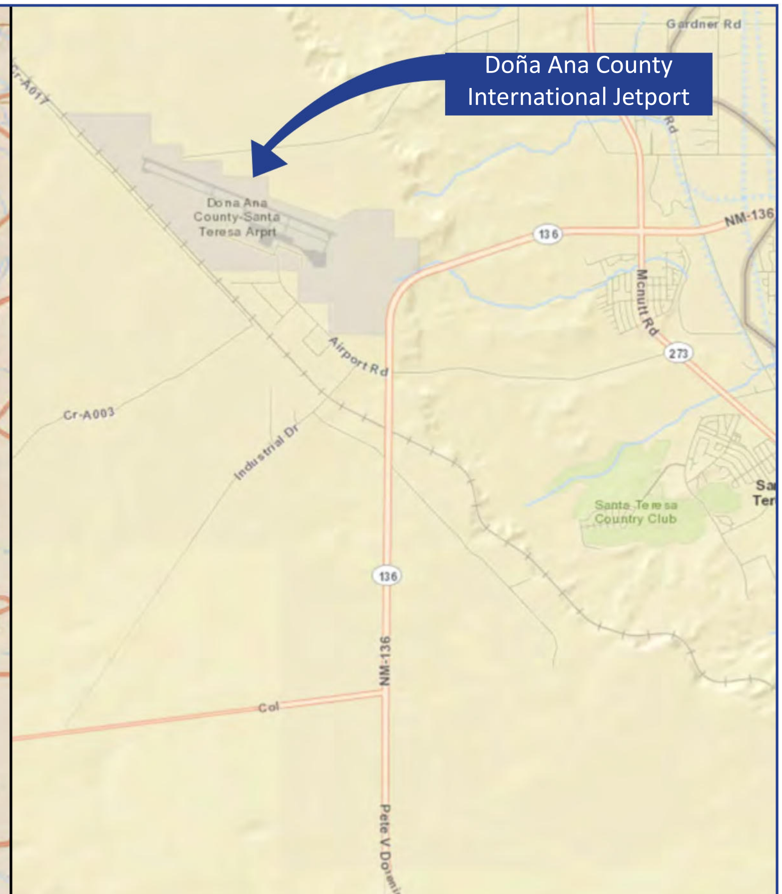
Santa Teresa, home to the Doña Ana County International Jetport, is five miles from the city limits of El Paso, Texas, an estimated 21 miles from downtown El Paso, and 40 miles from Las Cruces, New Mexico—the county seat. Access to Las Cruces and El Paso from the area is via Interstate 10 (I-10). As shown in **Exhibit 1A**, Santa Teresa, New Mexico is in the southeastern portion of Doña Ana County with direct access to the Jetport via Airport Road off NM Highway 136 (Pete V. Domenici Highway). Nearby is the Rio Grande River, which passes between Santa Teresa and I-10. Access from I-10 is via Artcraft Road (exit 8), which changes to NM 136 at the New Mexico/Texas state line The Jetport, at an elevation of 4,112.8 feet mean sea level (MSL), sits an estimated 200 feet higher than the nearby community of Santa Teresa, and nearly 400 feet higher than Sunland Park and El Paso. In the desert-like environment, winter brings mild temperatures with lows dropping to the 30s (Fahrenheit), while summer temperatures reach into the 90s and low 100s. For future airport/runway planning purposes, the mean maximum temperature of the hottest month needs to be identified for the Jetport, which is 94 degrees Fahrenheit in July. An overview of environmental conditions is included in a later section.

Santa Teresa consists of 10.9 square miles with a 2010 Census population of 4,258, with an estimated 10% increase over five years. Comparatively, Santa Teresa has less than one percent of the El Paso population of around 679,000. Adjoining the community of Santa Teresa to the southeast is the City of Sunland Park covering 11.4 square miles with an estimated population over 15,000—three times that of the Santa Teresa population. Both Santa Teresa and Sunland Park are counted in the Las Cruces metropolitan statistical area despite their proximity to El Paso. Additional socioeconomic discussion of the area is included later in this chapter and the next.

II. AIRPORT HISTORY

The Jetport's first facility development plan was prepared in 1981. Thereafter, Runway 10-28 was constructed with initial dimensions of 5,400 by 100 feet, and subsequently extended in the mid-1990s to 8,500 feet. Following the last master planning study, design and construction of Runway 10-28's most recent runway extension to 9,550 feet was initiated. The extension was completed in 2011. Alongside the runway's development over the years are the numerous landside and supporting facilities. In the 1980s, there was T-hangar area development, an access taxiway (Taxiway B) to Runway 28, and the first major tenant—the War Eagles Air Museum (1989). The 1990s included an Airport Master Plan, the initiation of an Environmental Assessment, and construction of a taxiway for the East General Aviation (GA) development area. By 2002, the County prepared, with FAA funding help, a Benefit-Cost Analysis for Runway 10-28 widening and strengthening. With taxiway reconstruction needed,





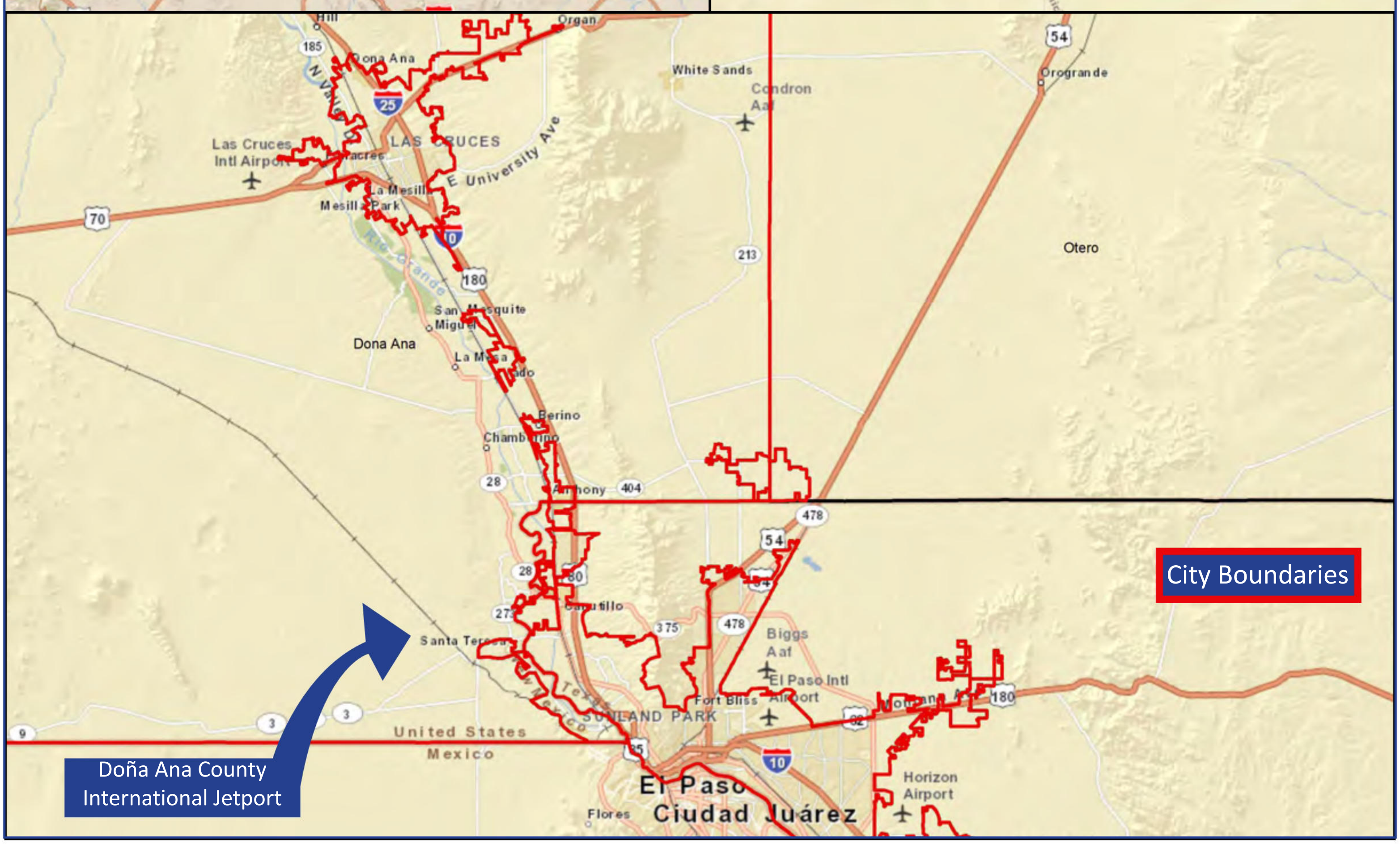


Exhibit 1A
Location Map

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the County proceeded with widening the parallel taxiway to 75 feet with 25-foot paved shoulders and strengthening to 300,000 pounds Dual Tandem Wheel (DTW) loading in the 2003 to 2004 timeframe anticipating heavy air cargo operations from ad-hoc operations. Similar widening and strengthening was accomplished for taxiway connectors in 2005. An Environmental Assessment for runway widening and strengthening was also prepared during these taxiway projects[1]. In 2006, an update to the Airport Master Plan was initiated (completed in 2008). A major outcome of the 2008 Master Plan update was to envision and develop the Jetport as a GA airport catering to executive class operations. Also in 2006, a cultural resources survey was conducted in the Runway 28 extension area. Earthwork and site preparation for the 1,050-foot Runway 28 and parallel taxiway extension was funded, and a Super Automated Weather Observation System (AWOS) was installed (recently replaced by an AWOS III). Throughout the Jetport's development history, hangar development has continued, the growth in airport tenants/based aircraft and new businesses has been steady, and airport pavement maintenance projects have been routine. Grant history documentation for the Jetport (provided by funding agencies) is included in Appendix C.

Also notable is the name change in October 2013, when Doña Ana County Airport at Santa Teresa became Doña Ana County International Jetport. Further, the FAA 3-letter identifier for the Jetport, 5T6, will change in the summer of 2017 coincident to KDNA with FAA publication schedules and the airport master record update process.

III. AIRPORT OWNERSHIP AND MANAGEMENT

The Doña Ana County International Jetport is and has always been owned and operated by the County. The Board of County Commissioners (BOCC) is the governing entity over the Airport. There are five county commissioners for the five county districts; the Jetport is within District 2. The BOCC appoints members to an Airport Advisory Board (AAB) to review and submit to the BOCC any recommendations on airport policies, contracts, leases, and major airport projects. The AAB consists of seven regular members.

The Doña Ana County FY2016 budget, published July 31, 2015, reported annual airport revenues of approximately $289,500. For FY2016, operating expenses were estimated at just

[1] El Paso International made significant improvements to their air cargo facilities during this time, reducing the heavy air cargo outlook for the Jetport. The Great Recession of 2008 took an additional toll on heavy air cargo potential.

over $203,300 and capital outlays were estimated at $181,000. Airport revenues generated include ground leases, hangar rentals, monthly and overnight tiedown fees, fuel flowage fees ($0.06/gallon), and percent of sales from certain business tenants.

The County provides the Airport with staffing support through three positions, including the Airport Manager, a maintenance worker, and part-time administrative member of staff from the County. According to the County, the Airport Manager is responsible for:

> *"…. managing, promoting, coordinating and supervising the daily operation of the International Jetport. Duties include tenant and customer relations, management, and oversight of maintenance, construction and development projects; ensure contractual compliance for all Jetport tenants and their related activities and ensure compliance with local, state and Federal Aviation Administration regulations. Represent the County at Jetport events and functions; Commission and Board meetings; develops and makes recommendations regarding Jetport operations. Conduct daily, weekly, monthly inspections for compliance with Storm Water Pollution Prevention Plan (SWPPP), Fueling operations and equipment, Jetport Security. Prepare and manage grant applications and funds. Under general supervision performs corrective and preventative maintenance to airport facilities and equipment. Tasks include repair and troubleshooting of plumbing systems, buildings, structures, runways, taxiways, ramps, lighting, navigation aids and other areas as needed. Advises management of hazards which may require issuance of NOTAMs (Notices to Airmen). Performs grounds maintenance, to include mowing, sweeping of paved areas, weeding, pruning trees and shrubs, painting and fence repairs. Performs basic maintenance and repair to tractor, mower, grader, vacuum sweeper, off road vehicle, street legal vehicles, radios and other equipment used in performing tasks."*

As noted in the Introduction section, the Jetport is included in the National Plan of Integrated Airport Systems (NPIAS) and the New Mexico Airport System Plan (NMASP) so it is eligible for and routinely receives grant funding in support of the important role it serves in the national and state aviation systems. In accepting FAA funding, the airport sponsor (Doña Ana County) signs a set of grant assurances, which are obligations to maintain and operate the Jetport in a safe and efficient manner. The grant assurances are in effect for 20 years from the date of accepting a grant. These grant assurances have been and continue to be a part of the County's airport management practices.

IV. CURRENT AVIATION ACTIVITY

The Jetport accommodates a wide variety of air traffic such as small single- and multi-engine aircraft, business jets, turboprops, and civilian and military helicopters. Airport users include transient operators as well as the pilots based at the Jetport. With several commercial tenants, the Jetport attracts transient activity to those businesses. Flight training available at the Jetport also attracts activity, particularly a high level of local operations. Airport management noted that approximately 90 percent of one commercial tenant's flight training customers (Red Arrow) are from Mexico. Typical measurements of aviation activity include the based aircraft count and annual airport operations. FAA uses these measurements to document and publish activity for public use airports.

A "based aircraft" is one that spends most of its time at the airport. To maintain more accurate based aircraft counts nationwide, the FAA's National Based Aircraft Inventory Program was established. The program allows airport sponsors direct online entry of their based aircraft, which are then validated by the system. The registration or "tail" number is cross-checked for duplication with based aircraft identified at other airports. While it's not uncommon for an aircraft to be counted at more than one airport when it has a hangar in more than one location, it does help the FAA confirm the actual number of active/based aircraft. In accordance with the airport manager's entries, the database shows the Jetport has 153 based aircraft, including 107 single engines, 22 multi-engines, 16 jets and eight helicopters[2]. However, there are other aircraft that have not been validated and are likely seasonally based between Doña Ana County and another airport.

Regarding operations, a takeoff or a landing is counted as one operation, so a "touch-and-go" counts as two operations. According to the FAA Airport Master Record, referred to as the FAA Form 5010, the Jetport's annual operations total 41,500. In the absence of an air traffic control tower, annual operations for airports like the Jetport must be estimated. These estimates often come from a combination of sources from the airport manager's knowledge of the airport, insight from the Fixed Base Operator (FBO) providing fuel, other tenants, and airport user survey respondents. These same sources can provide information on operations by type as well. For Doña Ana County, the various operations include the following FAA-

[2] Aircraft based at the Jetport has increased since the inventory was completed. According to the airport manager's latest based aircraft inventory validated in April 2017, there are 166 based aircraft, including 113 single engines, 24 multi-engines, 19 jets, and 10 helicopters.

defined types: GA Local, GA Itinerant, Military, and Air Taxi. While there is general concurrence regarding the total operations for the year, adjustments have been made to the operations split by type for this planning study based on user input. **Table 1A** presents the operations by type in the FAA Airport 5010 Master Record and the adjustments made and the subsequent adjustments made to the operations split that better represent the findings for use in this study. Additional discussion of this activity is included in Chapter Two, Forecasts.

Table 1A – Estimated Annual Operations by Type

Operation Type	FAA Airport Master Record Estimated Operations*	Study Adjustment	New Estimated Operations**
GA Local	27,100	- 3,100	24,000
GA Itinerant	13,000	+ 2,760	15,760
Military	1,200	-	1,200
Air Taxi	200	+ 340	540
Total	**41,500**	**-**	**41,500**

*Source: *FAA Airport Master Record (FAA Form 5010) 2015. **BHI Team adjustments based on input from airport user survey, tenants, stakeholders, FBO, airport manager.*

According to the airport user survey respondents, information extracted from limited operations data, and interviews with other stakeholders, there is regular activity at the Jetport by all types of users—business, personal/recreational, training, military, and air taxi. In addition to its regular airport traffic, the Doña Ana County International Jetport hosts special events throughout the year to draw in aviation enthusiasts from all over. One of the largest events held in the past was the Amigo Airsho. The War Eagles Air Museum also draws in air traffic along with the local community and regional residents, and tourists driving through the area. The Jetport has a U.S. Customs facility and serves as an aircraft port of entry for international operations--typically clearing around 30 aircraft and over 100 persons through U.S. Customs on a monthly basis.

Airport management and tenants pointed out that there are companies known to account for some of the business aviation traffic at the Jetport, including Foxconn and Union Pacific.

V. ECONOMIC IMPACT

Nationwide, airports provide a substantial economic benefit to their communities. Often, the economic impact of an airport far exceeds the dollars spent operating, maintaining and upgrading the facilities. Since a community may be unaware of the economic benefit it derives from its airport, calling attention to the facts and figures can be illuminating. To this effort, the New Mexico Airport System Plan Update (NMASPU) 2009 included an economic impact study that presented findings for individual airports and the state. Doña Ana County International Jetport was one of 51 public use airports included in the study, which found the Jetport contributed nearly $18 million in 2008. Statewide, the 51 public use airports contributed approximately $3.2 billion in economic benefit.

The NMASPU 2009 points out that "New Mexico's system of public-use airports is a vital component of the State's overall transportation system and serves as an important economic stimulus to the State, as well as its residents and businesses. In addition to supporting jobs, household earnings, and business sales, New Mexico's aviation system also provides quality of life benefits that impact most State residents, including those that never use aviation services."

With the last set of economic impact figures now more than five years old, the New Mexico Aviation Division (NMAD) is updating these figures. Initiated in 2014, the next NMASPU published a draft chapter on the economic impact of NM airports using 2014 data. **Table 1B** presents, for comparison, the results of the previous and current economic impact figures.

Table 1B – Doña Ana County International Jetport Economic Impact			
Description	**2009 NMASPU**	**Draft 2014 NMASPU**	**Change**
On-Airport Employment	175	80	(95)
GA Visitor Employment	59	43	(16)
Total Airport Employment	**234**	**123**	**(111)**
On-Airport Payroll	$6,167,300	4,804,000	(1,363,300)
GA Visitor Payroll	1,344,000	1,245,000	(99,000)
Total Payroll Impacts	**7,511,300**	**6,049,000**	**(1,462,300)**
On-Airport Output	14,983,700	12,187,000	(2,796,700)
GA Visitor Output	2,976,600	2,716,000	(260,600)
Total Output	**17,960,300**	**14,903,000**	**(3,057,300)**

Source: NMASPU 2009 and Draft NMASPU 2014.

As shown, the 2009 study found that the Jetport's total output reached nearly $18 million, and the 2014 draft study found it dropped to nearly $15 million. It's important to note that figures in Table 1B include the sum of direct, indirect and induced impacts, as described below.

- **Direct Impacts** are associated with providers of services at the airport. These providers may include the airport operator, FBOs, concessionaires, government installations, educational institutions, military facilities, flight schools, and maintenance operations, among others.
- **Indirect Impacts** are associated with the users of airport services. These include both corporate and public users, government agencies, and aviation and non-aviation businesses.
- **Induced Impacts** are associated with the additional local economic impact that is generated specifically because of the airport's presence, including related employment, payroll, and employer expenditures. Induced impact also includes the successive rounds of spending caused by the direct and indirect impacts. This "multiplier effect" measures the extent to which the indirect and induced impacts flow from the direct impact.

The 2014 draft NMASPU noted that there were 4,987 workers on New Mexico system airports in 2014. This total direct on-airport employment figure was derived from these classifications of employment:

Legend

Airport Parcel

N W E S

0 1,000 2,000 Feet

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Exhibit 1B
Existing Airport

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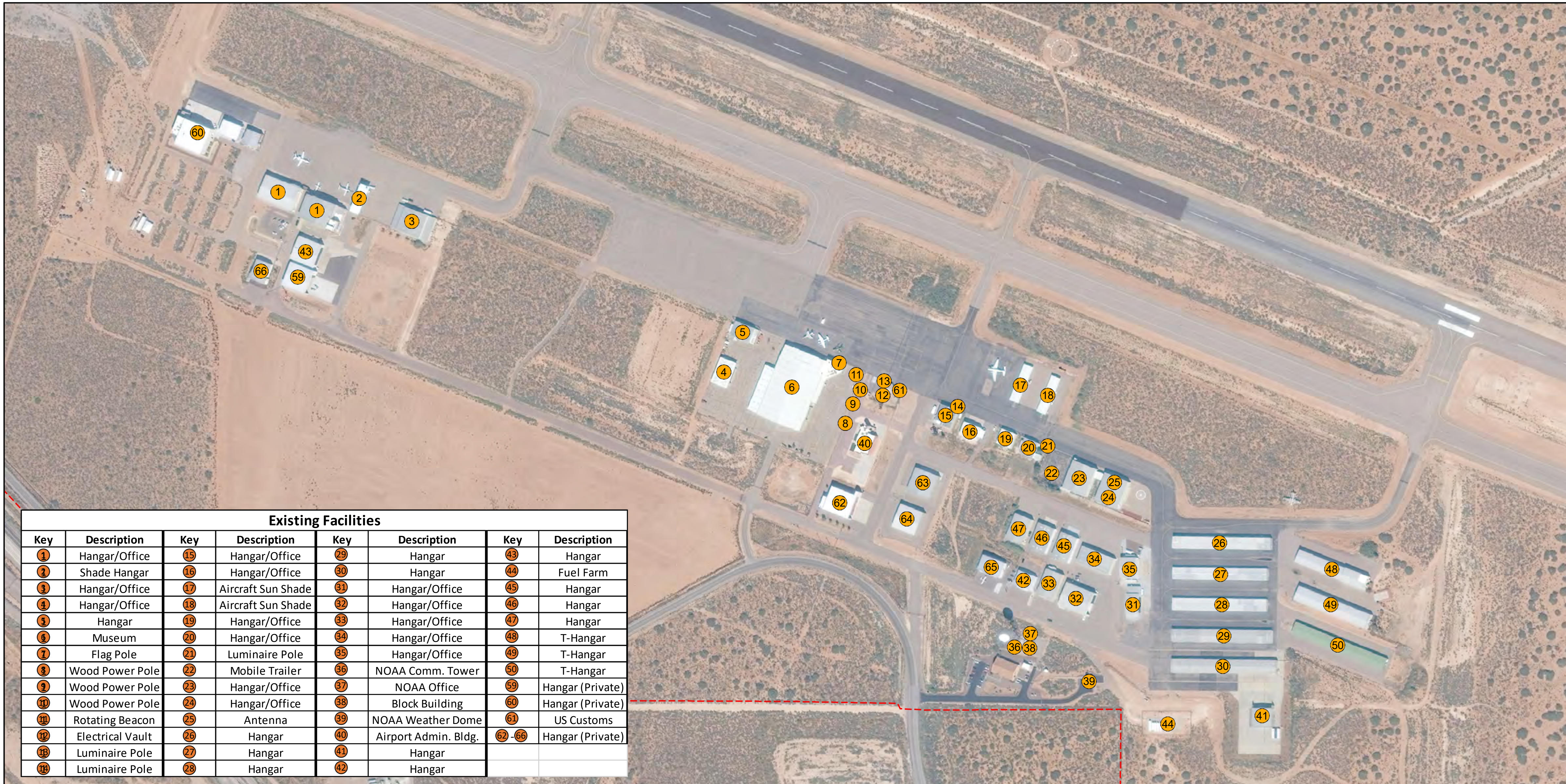
Author: gmaynard

March 2016



Existing Facilities

Key	Description	Key	Description	Key	Description	Key	Description
1	Hangar/Office	15	Hangar/Office	29	Hangar	43	Hangar
2	Shade Hangar	16	Hangar/Office	30	Hangar	44	Fuel Farm
3	Hangar/Office	17	Aircraft Sun Shade	31	Hangar/Office	45	Hangar
4	Hangar/Office	18	Aircraft Sun Shade	32	Hangar/Office	46	Hangar
5	Hangar	19	Hangar/Office	33	Hangar/Office	47	Hangar
6	Museum	20	Hangar/Office	34	Hangar/Office	48	T-Hangar
7	Flag Pole	21	Luminaire Pole	35	Hangar/Office	49	T-Hangar
8	Wood Power Pole	22	Mobile Trailer	36	NOAA Comm. Tower	50	T-Hangar
9	Wood Power Pole	23	Hangar/Office	37	NOAA Office	59	Hangar (Private)
10	Wood Power Pole	24	Hangar/Office	38	Block Building	60	Hangar (Private)
11	Rotating Beacon	25	Antenna	39	NOAA Weather Dome	61	US Customs
12	Electrical Vault	26	Hangar	40	Airport Admin. Bldg.	62-66	Hangar (Private)
13	Luminaire Pole	27	Hangar	41	Hangar		
14	Luminaire Pole	28	Hangar	42	Hangar		

Legend

- Existing Facilities
- Airport Parcel

N W E S

0 400 800 Feet

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Exhibit 1C Existing Building Area

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Author: gmaynard

March 2016

- 3,063 from private aviation-related employers
- 1,436 public sector workers in government offices and agencies
- 488 from construction employment for capital improvement projects

While nearly three out of every four jobs at these airports are in the private sector, there is no distinction between full-time and part-time workers. Also of interest, a worker with airport management responsibilities in addition to other government duties was counted as one worker at the airport.

VI. EXISTING AIRPORT FACILITIES

The Jetport consists of 1,712 acres at a surveyed elevation of 4,112.8 feet MSL. The runway, taxiways, apron areas, airport buildings, and airport surface roadways are located within the airport boundary. These facilities are discussed in the following airside and landside sections and are illustrated in **Exhibits 1B and 1C**.

A. AIRSIDE FACILITIES

Airside facilities include aircraft movement areas. For the Jetport, this includes the runway, taxiways, and apron areas. Although the apron areas include aircraft parking, which is often categorized as a landside facility, this plan presents it within the airside discussion where the airport pavements are also discussed.

1. RUNWAY

The airfield has a single northwest-southeast runway designated as Runway 10-28. The runway is asphalt with dimensions of 9,550 feet by 100 feet. Prior to a runway extension in 2011, the runway was 8,500 feet in length. Pavement condition, strength, lighting and markings are addressed in subsequent sections.

2. TAXIWAYS

A full-length parallel taxiway, Taxiway A, serves Runway 10-28, and is located 445 feet from the runway, measured between runway and taxiway centerlines. Taxiway A is 75 feet wide with 25-foot shoulders. In the past, the taxiway has served as an interim runway during major runway improvement projects. There are six connecting taxiways between the runway and Taxiway A, which are identified as A1 at the southeast end (Runway 28) through A6 at the northwest end (Runway 10). Connectors A3 and A4 extend from the runway across Taxiway A to the apron area. Taxiways B and C, which begin on the south side of Taxiway A also serve the hangar and apron areas. The connecting taxiways range from 35 to 75 feet in width. Some were wider in the past, but were reduced to save pavement maintenance costs.

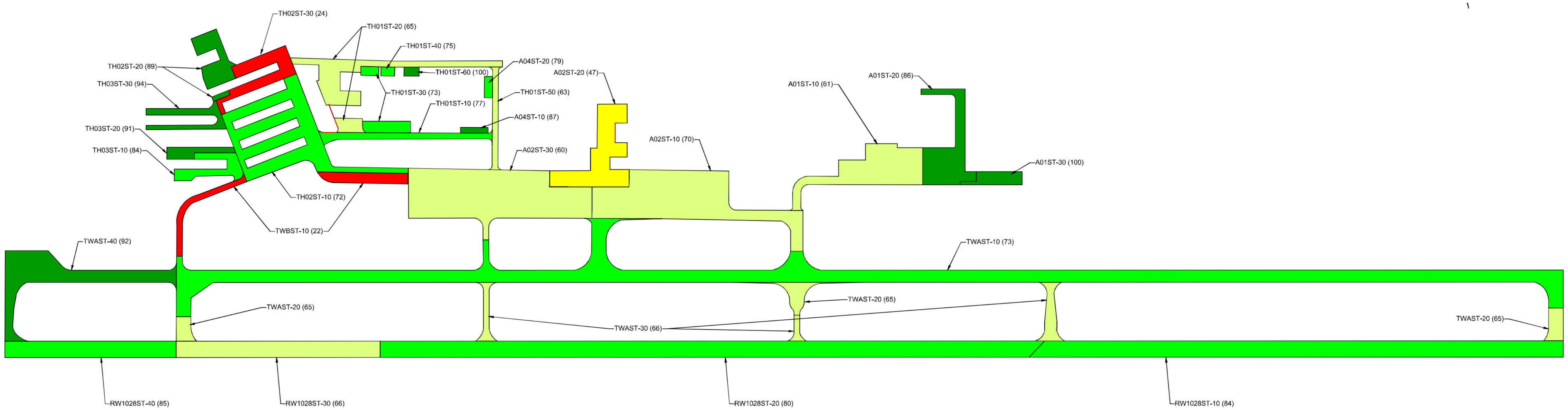
The Jetport is advertising for construction bids for a new taxiway at the west end of the current corporate hangar development with construction anticipated to be completed in late 2017.

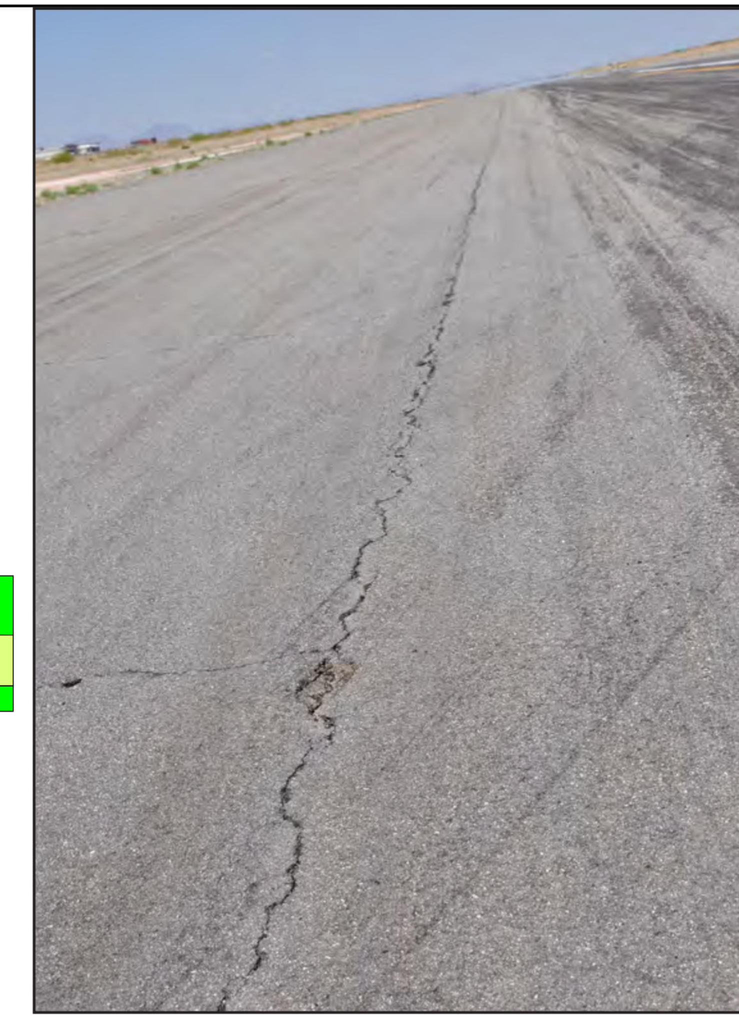
3. APRON

The apron areas at the Jetport include the main apron, west heavy apron, and others adjacent to various commercial development and hangar lease lots such as the FBO. The large contiguous aircraft apron running parallel to Taxiway A on the north side of the building area is an estimated 65,400 square yards. The main apron for most GA aircraft is at the east end, and the heavy aircraft apron is at the west end. The heavy apron is used by Customs and by helicopters, which were moved from apron area near the museum to mitigate the impact of dust kick-up caused by rotor wash. Helicopters use the public apron or their lease lot apron area for operations since a separate public use helipad is not available. The entire apron area is an estimated 300 feet deep with the main apron an estimated 1,160 feet wide and the heavy aircraft apron 800 feet wide.

4. PAVEMENT CONDITION AND STRENGTH

During a statewide airport pavement management system update, conducted 2012-2013, runway, taxiway, apron, T-hangar, and helipad pavements at airports in New Mexico were evaluated. These inspections were conducted using the pavement condition index (PCI) survey procedures outlined in The FAA Advisory Circular 150/5380-6B, Guidelines and Procedures for Maintenance of Airport Pavements, and ASTM D5340-12, Standard Test Method for Airport Pavement Condition Index Surveys. The PCI procedure is the standard used by the aviation industry to visually assess pavement condition, providing engineers with a consistent, objective, and repeatable tool to represent the overall pavement condition. During a PCI survey, visible signs of deterioration within a selected sample unit are recorded and analyzed; distress type, severity, and quantity are also noted. This evaluation helps identify the structural integrity and function of the pavement, so maintenance and repair needs may be determined. Further, rehabilitation priorities are outlined for funding purposes. Also important is the repeated PCI monitoring over time so the rate of deterioration can be identified to ensure the sponsor plans and implements the appropriate rehabilitation measures. NMAD conducted a follow-up inspection in 2014.





PCI Legend:	86-100	71-85	56-70	41-55	26-40	0-25

New Mexico Department of Transportation
Legend
Aviation Division
Statewide Pavement Management System Update
2014 Data

N
W E
S

0 1,000 2,000
Feet

Dona Ana County
International Jetport
Airport Multi-model
Master Plan and ALP Update

Exhibit 1D
Pavement Condition Survey
Exhibit 1B
Existing Airport

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Author: kwoods

March 2016

Exhibit 1D illustrates the PCI survey findings for the Jetport. Pavements in "excellent condition" have PCI values between 86 and 100, and are identified by dark green. On the other end of the spectrum is "pavement failure" depicted in red, which is associated with PCI values between 0 and 25. As shown, the airfield pavement section in excellent condition is the 1,050-foot easternmost segment of Taxiway A (constructed in 2011), but most of the runway is in good condition (bright green). Generally, apron pavement condition was identified as fair in the pavement survey, but have since deteriorated.

At the time of data collection, the most recent pavement maintenance at the Jetport was a 2013 surface treatment (slurry seal) and crack sealing project on Runway 10-28.

Runway pavement strength noted on the latest FAA-approved Airport Layout Plan (ALP) is 20,000 pounds single wheel loading (SWL). This strength was also published in the February 2016 Airport Facility Directory (AFD)—a common pilot resource. Taxiway A, certain connector taxiways, and a portion of the apron have been identified as having a pavement strength of 300,000 pounds dual tandem wheel (DTW). When they were constructed, the intent was to strengthen the runway to the same strength ultimately. Funding constraints and the insufficient growth in heavy aircraft traffic postponed the proposed strengthening.

As part of the statewide pavement management program, NMAD hired Applied Pavement Technology to conduct pavement tests in 2014 to determine the current strength rating of the runway pavement since the published rating was outdated. The 2014 pavement survey findings reported on four pavement sections of Runway 10-28. Three of the four sections were identified as having a recommended Pavement Classification Number (PCN) that was "too low to be correlated to an allowable load using FAA guidance." The pavement section in the worst condition is between Taxiways A2 and A3. The pavement section in the best condition, as expected, is the recent 1,050-foot extension from Runway 28 pavement edge to Taxiway A2. The survey findings did not report on the taxiway or apron area pavement strength ratings.

5. AIRFIELD LIGHTING, MARKINGS AND SIGNAGE

Runway edge lighting supports nighttime operations and periods of low visibility. Runway 10-28 is equipped with a Medium Intensity Runway Lighting (MIRL) system, which is pilot-activated. The MIRL system is approximately 20 years old. In addition, Runways 10 and 28 are both equipped with a Runway End Identifier Lights (REIL) system—both are in good operating condition. The REIL system consists of two high-intensity strobe lights that mark the approach end of the runway, which is critical in reduced visibility conditions.

Parallel Taxiway A and connectors are equipped with a Medium Intensity Taxiway Lighting (MITL) system, which was constructed in 2002 with the taxiway reconstruction project. The MITL system is in good operating condition.

Runway 10-28 has standard markings for a non-precision instrument runway; the runway is marked with threshold markings, designators, centerline and aiming point markings. Taxiway markings include standard yellow centerline striping. Hold lines for Runway 10-28 are marked on all six taxiway connectors. The majority of taxiway markings are in good to fair condition. The runway and taxiway markings are consistent with current requirements and are typically repainted as part of scheduled maintenance.

Airfield signage provides pilots with important information to include identifying their location on the airfield. The Airport's signage is in fair to poor condition except for the signs associated with the 2011 east runway extension. The Jetport is in the process of making minor repairs to the signing until a project for signing replacement can be initiated; this is likely to be in conjunction with the runway reconstruction tentatively being programmed with the FAA and State.

6. NAVIGATION AIDS

Navigation aids discussed here include both visual and instrument approach aids. The Jetport's visual aids include a two-light Precision Approach Path Indicator (PAPI) system on Runway 10, and a four-light PAPI on Runway 28. A PAPI projects light along a standard runway approach glide path. Red and white lights help the pilot determine whether the aircraft is above, below or on the standard glide path. The Runway 10 PAPI system was installed at the same time as the MIRL system about 20 years ago while the Runway 28 PAPI system was installed coincident with the 2011 runway extension. They are in in fair condition with occasional reported problems.

The airfield also has a standard airfield rotating beacon located at the top of a tower on the HazMat building east of the War Eagles Museum. The rotating beacon was replaced in 2014 and is in good condition. A rotating beacon consists of sequenced flashing green and white lights rotating 360 degrees to allow pilots to identify the facility from any direction.

The Jetport has three lighted wind cones, including a segmented circle opposite Taxiway A3 on the north side of the airfield. These provide pilots with ground level wind conditions. All are in good to fair condition.

Instrument approach aids are typically used for airports that permit Instrument Flight Rules (IFR) operations, which means that operations are permitted when the visibility and cloud ceiling are below minimums for Visual Flight Rules (VFR). Airports with instrument approaches have one of two types, or both. An Instrument Approach Procedure (IAP) is the traditional ground-based type. The other type uses satellite-assisted navigation provided by the Global Positioning System (GPS). Approach minimums are based upon several factors, including obstacles, navigation equipment, approach lighting, and weather reporting equipment. The Jetport does not have any traditional ground-based instrument approach equipment, but an Area Navigation (RNAV) GPS approach with visibility minimums as low as one mile is published for Runway 10. The RNAV GPS approach was originally published in October 2005.

7. OTHER AIRFIELD FACILITIES

The Jetport upgraded their weather reporting facility to an FAA-approved AWOS III P/T in early 2017 to provide certified weather. The AWOS was installed between Taxiway A and Taxiway B opposite the east T-hangar area.

B. LANDSIDE FACILITIES

Landside facilities include airport buildings such as conventional hangars, T-hangars, aircraft shade structures, airport administration/hazard materials building, U.S. Customs, an electrical vault, War Eagles Air Museum, and the National Weather Service (NWS) office. Also included in this section is a discussion of aviation services at the Jetport as well as vehicle access and parking.

1. AIRPORT BUILDINGS

There are over 50 buildings at the Jetport. Exhibit 1C (previously shown) lists the various buildings as well as other structures such as towers and poles on the property.

a) *Hangars*

Hangars include numerous conventional hangars of varying sizes, eight banks of T-hangars, and three banks of aircraft shade structures. According to airport management, the owners of 29 aircraft are on a hangar waiting list; six of them presently use shade structures. Nearly all aircraft based at the Jetport are contained in hangars or shade structures, rather than parked uncovered. The condition of most hangars ranges from fair to good with some in need of maintenance/repair. Several hangars are new construction and in excellent condition. In addition, another hangar was under construction at the time of data collection.

There are County-owned T-hangars and privately-owned T-hangars on ground leases. The T-hangars have power, but the green T-hangar building also has water. The large majority of conventional hangars are privately owned and on ground leases with the County.

Three banks of shade structures provide aircraft storage for up to 22 aircraft. Located adjacent to the main apron, two of the shade structures are County-owned and each contains 10 units for a total of 20 aircraft spaces. The third shade structure belongs to the FBO and is often used for overnight transient aircraft with space for up to two aircraft.

b) *Customs and Border Protection Building*

One of the newest facilities constructed at the Airport in recent years is the Customs and Border Protection (CBP) building, which includes baggage sensors, x-ray machines, an interrogation room, a holding cell, a waiting area, bathrooms, a search room, agricultural lab, and general office space. In June 2013, the Doña Ana County BOCC awarded the contract for a new CBP building, and on November 7, 2014, the new 2,000-square-foot facility for processing international flights and cargo was inaugurated. The new facility offered a restart to U.S. Customs inspections, which had been discontinued in September 2011. Doña Ana County considers the new $800,000 facility a supporting element in ongoing multi-modal development efforts for continued economic growth in the region and at the Jetport.

c) *Hazmat/Airport Administration Building*

An Emergency and Hazardous Materials (Hazmat) Response Fire Station is located near the CBP building. While not fully developed and utilized yet, the station opened in September 2012. It houses a response unit for the Santa Teresa Fire District, as well as equipment used for hazardous materials response throughout Doña Ana County. Airport administration office and meeting room space are also located in the building. At a cost of $1.4 million, the facility consists of 6,521 square feet total with a future expansion pending funding.

d) *National Oceanic and Atmospheric Administration (NOAA)/National Weather Service (NWS)*

NOAA/NWS offices are located east of Airport Road and west-southwest of the T-hangars. The NWS office broadcasts weather 24 hours a day for the El Paso metropolitan area. According to NOAA, the transmitter for this station is located on Franklin Mountain in El Paso and has an effective listening distance of approximately 40 miles, depending on topography. However, pilots use weather data from the new AWOS III instead of this facility since the NWS does not broadcast on aviation frequencies.

e) *War Eagles Air Museum*

The War Eagles Air Museum is centrally located among the landside facilities with easy access off Airport Road. Apron area in front of the museum allows aircraft to park near the museum. Founded in 1989 by John and Betty MacGuire of El Paso, the museum is a large, two story building connected to a large hangar. The museum has several antique and vintage aircraft and automobiles. According to the airport manager, one aircraft is considered active by FAA definition and is counted in the Jetport's based aircraft total, while the other museum aircraft are not.

f) *Electrical Vault*

The electrical vault is located between the Customs building and the Hazmat/Airport Administration building. It is the primary power source for airside facilities such as the MITL system.

2. AVIATION SERVICES (COMMERCIAL TENANTS)

Francis Aviation is currently the only Fixed Base Operator (FBO) at the Airport. Francis Aviation bought out Blue Feather Aero within the last few years, taking over the former FBO's hangars and office space and adding new facilities. Further, they discontinued the flight training and aircraft maintenance portions of the business. On March 1, 2015, Franklin Mountain Development bought Francis Aviation, but kept the Francis Aviation name. Currently, Franklin Mountain Development owns five buildings. Francis Aviation is located at the west end of the Jetport. The new FBO's fleet consists of three King Airs, including two new King Air 350i aircraft for their charter service. Full- and self-service 100LL and Jet A fueling is available. The FBO has ground service equipment including electric tugs capable of towing aircraft weighing up to 100,000 pounds gross takeoff weight; they also offer hybrid ground power units. Other services include oxygen and nitrogen, potable water, lavatory services and a forklift for cargo operations. Inside, the FBO has a weather and flight planning room, theater room, and kitchen and break room. Aircraft hangar storage is also available. A courtesy crew car is available free shuttle to the War Eagles Air Museum, and Enterprise car rentals. They do not provide aircraft maintenance and servicing, but other commercial tenants on the airport do.

Flight training is offered by three flight schools at the Jetport as well as flight instructors providing private instruction.

Aircraft maintenance is also offered at the Jetport. Aviation Services provides light maintenance on small aircraft and operates a skydiving school. Aero Services provides light to medium maintenance and repairs.

An air cargo operator based at the Jetport previously provided services, but is not presently active. No other based air cargo service providers are officially reporting air cargo activity out of the Jetport. For more information about potential air cargo activity at the Jetport, see the appendices.

3. VEHICLE ACCESS AND PARKING

Airport Road provides access onto the industrial park next to the Jetport and onto the Jetport property from the Pete V. Domenici Memorial Highway, NM SR 136. Airport Road continues west to the Union Pacific multi-modal yards. Funding programmed recently for roadway improvements will help address the poor condition of the access roadways from heavy truck traffic. Vehicle parking is provided outside the fence adjacent to the Airport Administration Building/Hazmat Building. Parking is also located next to the FBO and other businesses.

C. AIRPORT SUPPORT

1. EMERGENCY SERVICES

The County Sheriff and local firefighting, as well as the CBP when appropriate, provide emergency services support for the Jetport. While an Aircraft Rescue and Fire Fighting (ARFF) facility is not located at the Jetport, a fire truck is based there and eventual on-site firefighting is planned. The Jetport also has Hazmat support in the new facility that also houses the Airport Administration offices.

2. AIRPORT MAINTENANCE

Doña Ana County handles regular maintenance with County-owned equipment and County staff. Contracted services are used on an as-needed basis, such as for major airport maintenance, with funding support from NMAD and the FAA, when eligible.

3. GROUND TRANSPORTATION

Numerous transit companies provide taxi and bus service in the area with most based in El Paso. Francis Aviation, the FBO, provides a courtesy car and rentals to customers flying into the Jetport.

4. SECURITY AND FENCING

Airport security at GA airports can include a variety of facilities and services such as fencing, controlled access gates, lighting, signage, staffing, and patrols. Fencing encompasses most of the Jetport and facilities requiring security. Restricted access gates have enhanced security and a new gate was installed in 2016 providing controlled access to the east corporate hangar and GA T-hangar area. User survey respondents identified one of the restricted access gates as inoperative. Since the last master plan, additional security fencing was installed around the majority of the building areas on the south airport perimeter.

Apron security lighting covers a large portion of the apron. Lighting is on poles or attached to buildings, and is in good condition.

5. UTILITIES

Airport utilities include electricity, natural gas, water, wastewater, telephone, and high-speed internet access. Water and sewer service is provided by the Camino Real Regional Utility Authority (CRRUA).

6. FUEL

Doña Ana County Jetport’s fuel is stored in aboveground storage tanks and contained in a fuel farm located in the southeast section of the building area. Although no action has been taken yet, the County recognizes that a fuel containment system is necessary. The fuel farm contains fuel for FBO sales as well as five self-fueling tenants who are not permitted to sell fuel. A separate self-serve fueling facility operated by Francis Aviation is in front of the War Eagles museum. There is also a gender-neutral restroom located adjacent to the self-serve fuel station.

VII. AIRSPACE

Protection of airspace and the proper operation and communication within airspace is critical to the safety of all aviation operations. Airspace is defined as the portion of the atmosphere above a particular land area, usually above a country. To efficiently and effectively manage the large amount of air traffic that traverses the sky each day, the atmosphere above the United States is divided into several sectors, or classes. The six classes of airspace in the United States are divided into two categories:

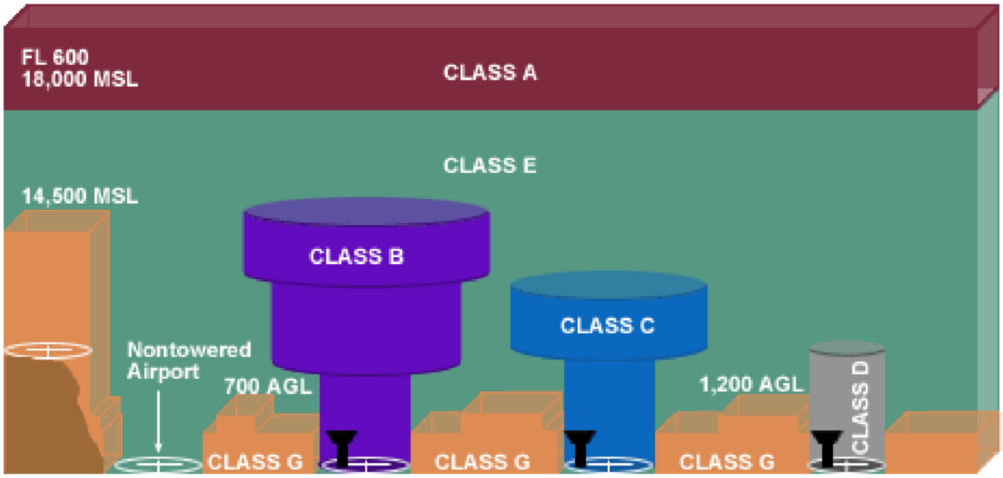
- Controlled Airspace includes Class A, Class B, Class C, Class D, and Class E. While operating in controlled airspace, the pilot is subject to certain operating rules, as well as pilot qualifications and aircraft equipment requirements.
- Uncontrolled Airspace includes Class G airspace. FAA Air Traffic Control (ATC) does not exercise control of air traffic in Class G airspace.

Exhibit 1E from the FAA provides a brief overview of the airspace classifications in the United States.

In the controlled airspace category, Class A airspace includes all airspace from 18,000 feet MSL to Flight Level 600 (approximately 60,000 feet MSL). Class B airspace surrounds high activity commercial service airports. Class C airspace surrounds commercial service airports with moderate traffic and some military airports. Class D airspace surrounds smaller airports with an air traffic control tower. Additionally, Class E airspace is defined as controlled airspace that is neither A, B, C nor D.

The Uncontrolled, or Class G, Airspace is mostly a small layer of airspace near the ground, but there are larger areas of Class G airspace in remote regions. In general, within the United States, Class G Airspace extends up to 14,500 feet above MSL. At and above this altitude, all airspace is Class E.

Exhibit 1E. Airspace Classifications



Airspace Features	Class A	Class B	Class C	Class D	Class E	Class G
ATC Facility	ARTCC	TRACON	TRACON or ATCT	ATCT	ARTCC	None
Operations Permitted	IFR	IFR & VFR	IFR & VFR	IFR & VFR	IFR & VFR	IFR & VFR
Entry Requirements	ATC Clearance	ATC Clearance	ATC Clearance for IFR. All require radio contact	ATC Clearance for IFR. All require radio contact	ATC Clearance for IFR. All require radio contact	None
VFR Minimum Distance from Clouds	N/A	Clear of clouds	500' below, 1,000' above, and 2000' horizontal	500' below, 1,000' above, and 2000' horizontal	500' below, 1,000' above, and 2000' horizontal	Clear of clouds
Aircraft Separation	All	All	IFR, SVFR, and runway operations	IFR, SVFR, and runway operations	IFR and SVFR	None

Courtesy of FAA

In addition to the airspace classes listed above, the United States also designates areas of Special Use Airspace (SUA), mainly for reasons of national security. Special Use Airspace includes Alert Areas, Warning Areas, Restricted Airspace, Prohibited Airspace, Military Operation Areas (MOA), Controlled Firing Areas (CFA), and National Security Areas (NSA). It should be noted that the SUA is not a separate classification from the ATC-based classes previously discussed; each piece of SUA is contained in one or more zones of letter-classed airspace. Additionally, the airspace class in which the SUA is found still controls the requirements and procedures for flying into/through it.

A. LOCAL AIRSPACE STRUCTURE

Runway 10 uses a standard left traffic pattern while a non-standard right traffic pattern is used on Runway 28. The traffic pattern altitude (TPA) is 1,000 feet above ground level (AGL). The TPA is the altitude at which aircraft operating in the traffic pattern fly when on the downwind leg.

Exhibit 1F, Area Airspace, is an excerpt from the aeronautical chart that includes the Jetport. This shows the area airspace including the controlled airspace in the area surrounding El Paso, the restricted airspace to the northeast, the Mexico border and Juarez to the south, and nearby Cielo Dorado (private airport) to the northeast.

Exhibit 1F. Area Airspace

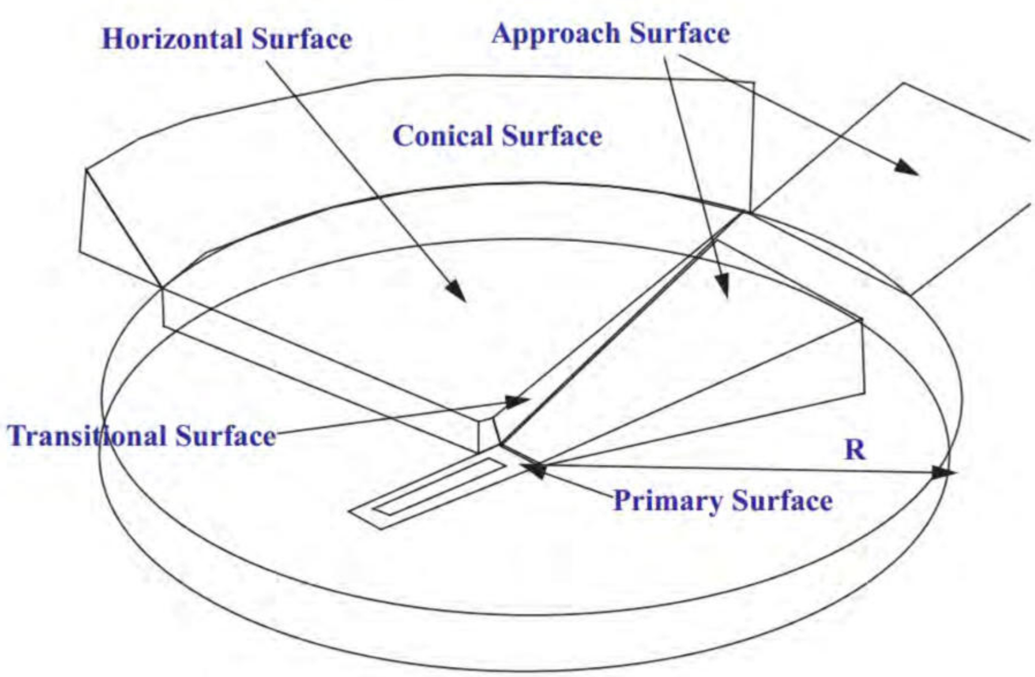
B. PART 77 IMAGINARY SURFACES

Title 14, Code of Federal Regulations (CFR), Part 77, Safe, Efficient Use, And Preservation of the Navigable Airspace, establishes standards for determining potential obstructions to air navigation. It does this through defining specific airspace areas around an airport that should not contain any protruding objects. These airspace areas are referred to as "Imaginary Surfaces." Protruding objects include existing or proposed natural growth;

terrain; or permanent or temporary construction, including equipment that is permanent or temporary in character. The imaginary surfaces outlined in Part 77 are illustrated in **Exhibit 1G** and include the following:

- Primary Surface
- Transitional Surface
- Horizontal Surface
- Conical Surface
- Approach Surface

Exhibit 1G. Part 77 Imaginary Surfaces



Dimensions of Part 77 surfaces vary depending on the type of runway approach. Although the FAA can determine which structures are obstructions to air navigation, the FAA is not authorized to regulate tall structures. Under Part 77, the FAA can undertake an aeronautical study to determine whether the structure in question would be a hazard to air navigation. However, there is no specific authorization in any statute that permits the FAA to limit structure heights or determine which structures should be lighted or marked. In fact, in every aeronautical study determination, the FAA acknowledges that state or local authorities have control over the appropriate use of property beneath an airport's airspace.

The definitions for the Part 77 surfaces are as follows:

Primary Surface: The primary surface is longitudinally centered on a runway. When the runway has a hard surface, the primary surface extends 200 feet beyond each end of the runway. The width of a primary surface ranges from 250 feet to 1,000 feet, depending on the existing or planned approach and runway type (e.g., visual, non-precision, or precision).

Horizontal Surface: The horizontal surface is a horizontal plane located 150 feet above the established airport elevation, covering an area from the transitional surface to the conical surface. The perimeter is constructed by swinging arcs from the center of each end of the primary surface and connecting the adjacent arcs by lines tangent to those areas. For all approaches to runways supporting large aircraft, the radius of each arc used to construct the horizontal surface is 10,000 feet.

Conical Surface: The conical surface is a surface extending upward and outward from the periphery of the horizontal surface at a slope of one foot for every 20 feet (20:1) for a horizontal distance of 4,000 feet.

Transitional Surface: Transitional surfaces extend outward and upward at right angles to the runway centerline, with the runway centerline extended at a slope of seven feet horizontally for each foot vertically (7:1) from the sides of the primary and approach surfaces. The transitional surfaces extend to where they intercept the horizontal surface at a height of 150 feet above the runway elevation. Transitional surfaces for those portions of the precision approach surface, which project through and beyond the limits of the conical surface, extend 5,000 feet horizontally from the edge of the approach surface and at right angles to the runway centerline.

Approach Surface: Longitudinally centered on the extended runway centerline, the approach surface extends outward and upward from the end of the primary surface. An approach surface is applied to each end of each runway based on the type of approach. The approach slope of a runway is 20:1, 34:1, or 50:1, depending on the sophistication of the approach. FAA approach surfaces are 20:1 for visual approaches, 34:1 for non-precision approaches, and 50:1[3] for precision approaches.

In reviewing the approach surface airspace for the Runway 10 approach, the railroad is identified as 720 feet right of the runway centerline at approximately 37 feet high (including

[3] Precision instrument approach slope is 50:1 for inner 10,000 feet and 40:1 for an additional 40,000 feet.

train height), and approximately 1,650 feet from the approach end of the runway. The non-precision instrument approach to Runway 10 requires an airspace approach slope clearance of 34:1. Existing conditions, with consideration for the railroad location and required height clearance, provides a 39:1 clearance slope to Runway 10.

A discussion and examination of the Jetport's Part 77 surfaces is provided in the Chapter Five narrative about the Airport Layout Plan drawing set.

VIII. LAND USE

The historical Camino Real corridor runs through the county along the Rio Grande. Historical inhabitants were the Manso people and the Mescalero Apache. In the late 1500s the Spanish colonized the area; Juan de Onate became the first governor of the Spanish territory of New Mexico. In the early 1800s, the Mexican empire claimed ownership, and in the mid-1800s the Mexican-American War clarified the ownership claims made by both Mexico and the Republic of Texas. The Treaty of Guadalupe Hidalgo in 1848 established the United States as territory owners and Las Cruces was founded in 1849.

Development in Santa Teresa began in the 1970s. Historically, the Santa Teresa area was important for ranching and border crossing. The lands surrounding the Jetport are mostly rural in character or developed with industrial and border-related business uses. There are four distinct industrial parks in the vicinity and numerous rail facilities, including the 12-mile long Union Pacific Intermodal Facility. It is a main destination for commercial trucking operations and associated industrial business, such as logistics and storage.

The area around the Jetport (**Exhibit 1H**), to the east, includes some residential areas. Public lands adjacent to the NM 136 Corridor are owned by Doña Ana County and used for purposes such as water and utility infrastructure. The Gadsden Board of Education owns property in the northern portion of the NM 136 Corridor, along with some residential development. Along NM 136 there is a small section of agricultural land. There is also a 210-acre NRG Energy solar facility called the Roadrunner Solar Generating Station, which supplies energy to El Paso Electric to the east of NM 136. It is a 20-megawatt facility and is the second largest of its kind in New Mexico. According to the Viva Doña Ana County Comprehensive Plan, this area is projected to have a lot of *"workplace"* growth (industrial and office uses).

Exhibit 1H. Jetport Study Area

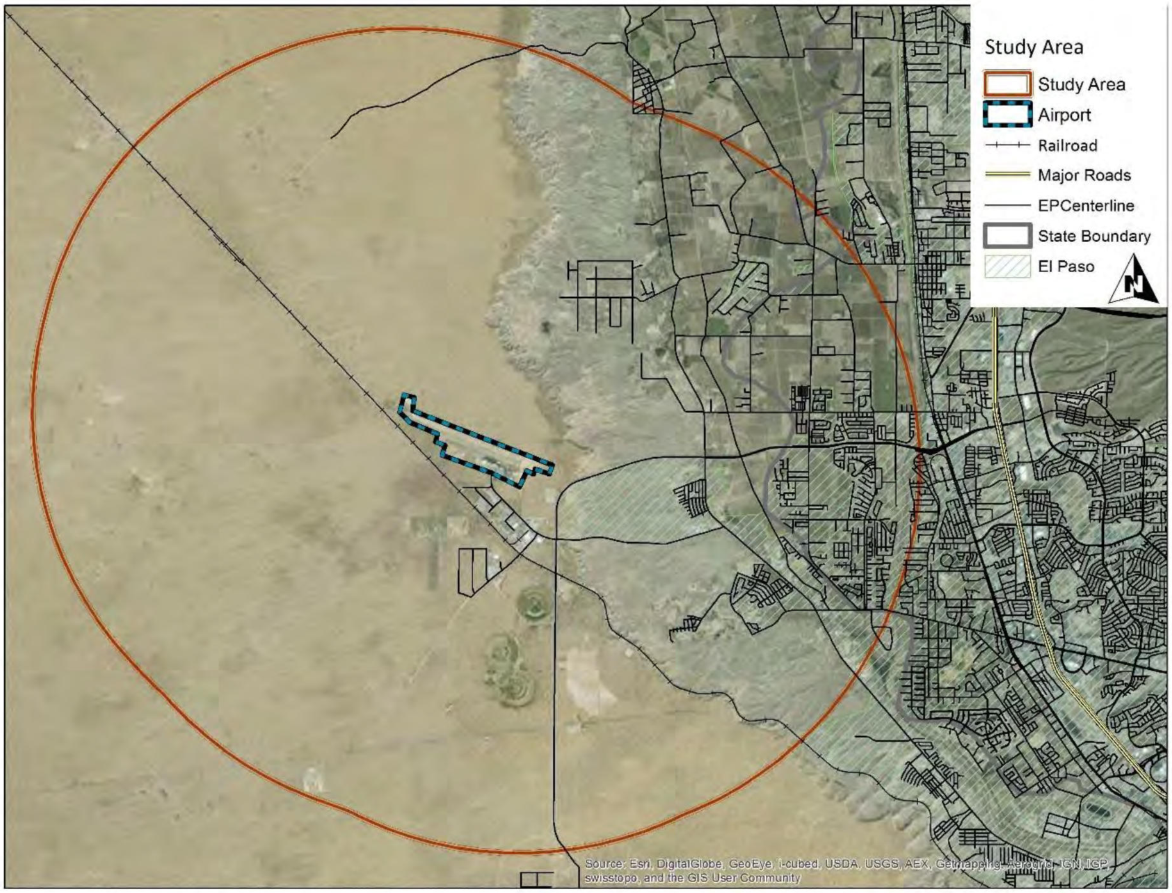
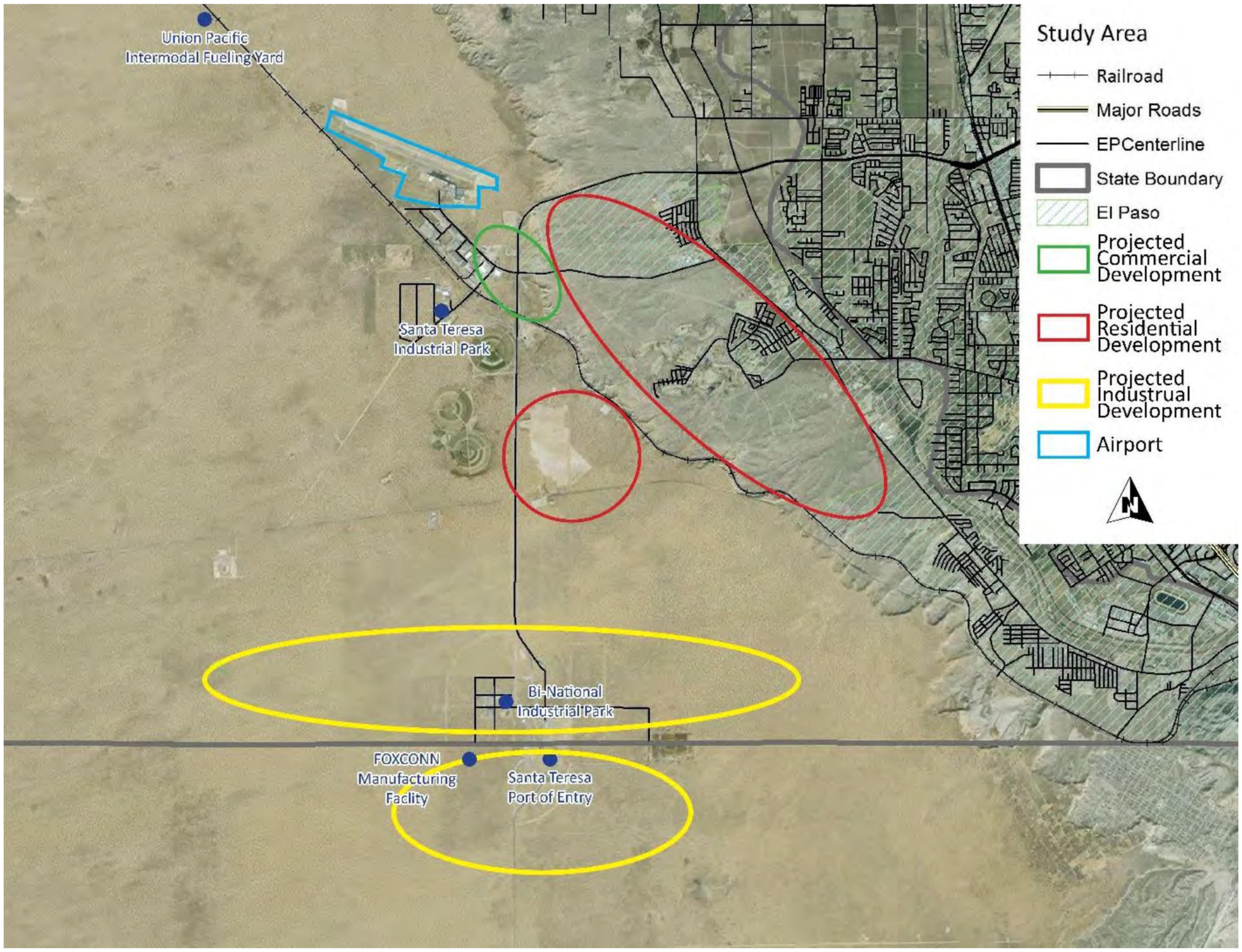


Exhibit 1I shows potential development that would affect land use in the study area. Potential development is discussed more in subsequent sections.

IX. ZONING

The small neighborhoods scattered around the region are zoned with a mix of uses, but with a primary focus on residential. Doña Ana County has recently (March 2017) updated the Unified Development Code (UDC) and has developed new zoning classifications within the study area. The proposed zoning primarily includes rural uses with some neighborhood commercial, community commercial and medium density residential uses. The current levels of traffic are not expected to change with the proposed zoning designations.

Exhibit 1I. Potential Development in the Jetport Study Area



X. MULTI-MODAL DEVELOPMENT

There is a potential need for future transit between the proposed residential and commercial developments in the area and the industrial park and airport facilities. On a regional basis, the South Central Regional Transit District (SCRTD) operates bus lines that travel between Las Cruces/ El Paso. Although, they operate a limited number of bus routes in the region, they are aimed at meeting the needs of travelers on the west side of the Rio Grande. The routes provide connections from the Santa Teresa area to Las Cruces and El Paso, including connection to the Federal, State and County offices providing regional support.

According to the NMDOT Bike Suitability map, NM 136 has more than four feet of shoulder width, making it useable for biking. There are no other bike facilities that were identified by NMDOT in the region. There are no paths or roads designed to include bike-friendly facilities.

XI. RAIL TRANSIT

The main industries in the New Mexican economy that depend heavily on rail transportation are Agriculture, Mining and Utilities. The other industries that are somewhat dependent on rail include Manufacturing, Wholesale Trade, Transportation and Warehousing. Doña Ana County has many Agricultural establishments (over 80), making it more dependent on rail.

A Rail Study nearing conclusion was undertaken to evaluate a new border crossing in Santa Teresa. This crossing would allow for increased rail capacity and economic development opportunities in the region. It could also improve cross-border capacity in the Ciudad Juarez-El Paso area and relieve rail and vehicular traffic congestion in Ciudad Juarez. The crossing would potentially connect with the BNSF rail lines (location to be determined), the Union Pacific Railroad (UPRR) lines, as well as new rail lines that would be constructed in Mexico to connect the border crossing with the Mexican rail network. There is significant international coordination underway to develop this project.

There has been a lot of activity in the area in general. Since 2011 Santa Teresa's industrial parks have grown by 50% from 40 to 60 companies. As a result, the UPRR constructed a $400 million facility, which opened in 2014. It is estimated that the UP facility will increase truck traffic by 100 to 300 trips each day.

XII. INDUSTRIAL PARK DEVELOPMENT

Along the border, south of the Jetport, is the Santa Teresa Port of entry (POE). Commercial crossings at the Santa Teresa POE have grown substantially since its initiation in 1992, indicating the POE's increasing significance to the regional economy.

Businesses and agencies at and near the POE depend on NM 136 for access to their offices. Mexican *maquiladoras* that trade with the United States are located immediately south of the POE, and depend on the NM 136 Corridor for transportation of goods and commodities across the border. The Santa Teresa POE is within the Foreign Trade Zone (FTZ) - 12 Mile Overweight Cargo Radius, which allows overweight trucks (up to 96,000 pounds) from Mexico to offload cargo within the FTZ for distribution to areas outside the FTZ. This radius includes the Union Pacific Intermodal Terminal. Recent improvements to vehicular and truck access have recently been completed at the Santa Teresa POE to increase capacity and operations.

Following are a few of the significant industrial activities happening in the County:

- The Border Industrial Parks offer easy access to east-west rail service via Union Pacific's Santa Teresa Intermodal Facility and into Mexico via the Santa Teresa Port of Entry.
- Arrowhead Business and Research Park is located on the New Mexico State University (NMSU) Campus at the intersection of Interstate 10 and Interstate 25.
- The West Mesa Industrial Park contains 1,700 acres and is located on Interstate 10, eight miles west of downtown Las Cruces and immediately south of the Las Cruces International Airport. It is an excellent location for aviation-related and technology based industries serving Doña Ana County, El Paso, and the US/Mexico border, and exists within Doña Ana County Foreign Trade Zone 197.

Other important economic activities are occurring south of the border. FoxConn, a manufacturer of electronics, is planning to increase their business by hiring 4,000 additional employees and increasing their daily traffic by 100 trucks. Additionally, the San Jeronimo Development, just south of the US / Mexico border, plans significant industrial and residential development, which began with a May 2014 groundbreaking.

A. PLANNING EFFORTS

There are, in fact, several planning and capital improvement projects currently underway in the border area by various agencies. The current planning projects in the area are shown in **Table 1C**. The physical scopes range from state-wide evaluation (State-wide Long Range Multi- Modal Transportation Plan (SLRP)) to the project-level analysis for NM 136 Corridor Study. The study area for the NMDOT New Mexico – Chihuahua Border Master Plan is also in the Jetport's area of impact. That Master Plan included a high-level Binational stakeholder analysis of New Mexico's three international ports of entry. These current planning activities are being initiated by the NMDOT, but the primary focus is on what needs to be planned and programmed in 20 to 25 years. Given the current rate of growth, there remains a need for planning for the growth in the region.

Table 1C - Current Transportation Projects			
Project	**Summary**	**Agency**	**Schedule**
Planning			
New Mexico - Chihuahua Border Master Plan	The master plan will be a bi-national comprehensive approach to coordinate the planning, inventory, and delivery of projects at three locations for land Ports of Entry and related land use/transportation infrastructure serving the international ports of entry in the New Mexico – Chihuahua border region. It will address future demand for cross-border travel and trade due to increased bi-national activity and growth in population.	NMDOT	2014-2018
2040 Statewide Long-Range Multi-Modal Transportation Plan	The plan is required under the Moving Ahead for Progress in the 21st Century Act (MAP-21). It covers the entire state and provides for the development, implementation, management and operation of transportation systems and facilities in an effort to function as an intermodal transportation system. It focuses on all methods of transportation including pedestrian and bicycle amenities. The plan will use statewide forecasts and assumptions related to demographics, travel demand, and other factors for a 2040 horizon year.	NMDOT	2013-2016
Doña Ana County Comprehensive Plan for Sustainable Development (http://vivadonaana.org/)	A Regional Consortium made up of municipalities, agencies, and more are leading the creation of a comprehensive plan for the County. It is being funded by the HUD/USDOT Sustainable Communities Regional Planning Grant.	Doña Ana County	2013-2016
NM136 from the Santa Teresa Port of Entry to the New Mexico / Texas State Line	Pete V. Domenici Memorial Highway (NM 136) in Doña Ana County is deteriorating and an increase in heavy truck traffic is expected. This road is the main entrance and exit to the Santa Teresa Port of Entry, Santa Teresa Intermodal Facility and connects with many industrial parks in the area. The alignment study will analyze the needed improvements for existing facilities and potential new projects. It will result in a design for the roadway improvements.	NMDOT	2014-2017
Capital Improvement and Maintenance			
Various Projects Referenced in State Transportation Improvement Program	https://projects.bhinc.com/STBTNAP/SitePages/Home.aspx	NMDOT	
Improvements to Airport Road – Industrial Road	County seeking funding for this effort.	Doña Ana County	2014-2018

A Border Area Transportation Needs Assessment and Strategic Plan (STBAT) is being developed in the region, as well. Its purpose is to guide transportation related decisions in the region. The study is focused on employment opportunities and transportation infrastructure in Juarez, El Paso and Las Cruces to optimize efficiency among the three urban areas. It will ultimately promote investment in regional transportation projects that will ensure transportation planning decisions that cater to regional economic development. The STBAT will summarize regional projects, prioritizing them by need, based on current activities in the region.

B. CURRENT TRANSPORTATION

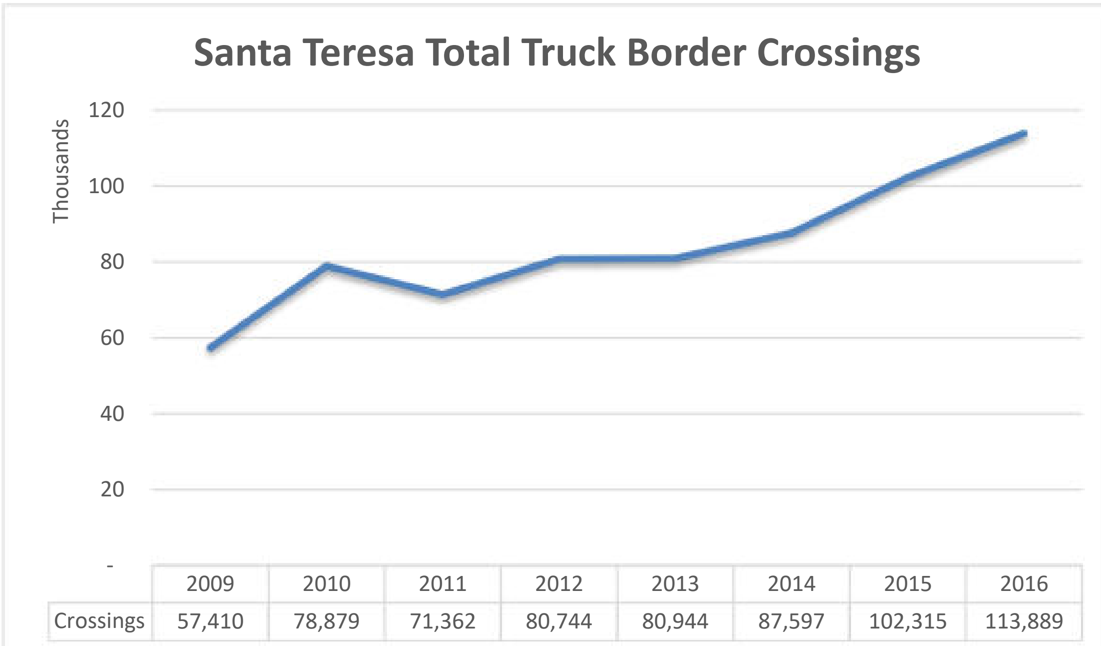
Table 1C summarizes current transportation projects underway or recently completed in the region.

XIII. REGIONAL ECONOMY

The area economy is thriving at the time of this inventory. In the past two years 24 new companies have moved to the Santa Teresa area industrial parks. Manufacturing is a key industry in southern New Mexico due to its proximity to the Mexican border. Nearby aerospace facilities also benefit from the binational manufacturing operation by contributing to the transportation of products and materials. Truck border crossings alone have continued to rise steadily since 2013, as shown in **Exhibit 1J**.

According to the Mesilla Valley Economic Development Alliance (MVEDA), using 2014 North American Industry Classification System (NAICS) data, the largest employment categories in the region are Education and Health Services, Government and the Trade, Transportation and Utilities fields. Transportation is a field that is very predominant in the region. The Trade, Transportation & Utilities field brought in $2,798,889,288 in reported Gross Receipts; that makes a total of 10.2% of civilians in the field for the region. According to MVEDA, the region's unemployment rate is 9.1, for a total of 33,000 unemployed people. There are 456,014 people in the labor force in the region.

Exhibit 1J



XIV. ENVIRONMENTAL INVENTORY

The following section provides an overview of the environmental conditions in the Jetport study area. This information was taken from records research, previous studies, and some field reconnaissance. Further studies, including field visits, may be needed for some resource areas particularly for cultural resources, biological resources, and hazardous materials. However, as required by FAA, the early evaluation of potential environmental impacts helps develop a set of alternatives that are feasible and reasonable without fatal flaws. The following summary should help with the project development process and guide in the decision-making process for future airport planning.

A. HUMAN FACTORS

1. NOISE

The majority of airfield generated noise emissions take place in a location that generally does not contain sensitive receptors, like houses and schools. The nearest residential development is located east of the Jetport near the intersection of NM 136 and NM 273.

2. Land Use

Land use around the Jetport was described earlier in this chapter. Industrial, rail, and commercial land uses are immediately south and west of the Jetport. Other land surrounding the Jetport is rural in character. To the east and at a lower elevation is residential development, increasing in density and urban character closer to Sunland Park.

3. Social Impact and Environmental Justice

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations", was signed by President Clinton on February 11, 1994 and published in the Federal Register on February 16, 1994. EO 12898 focuses federal attention on the environmental and human health conditions of minority and/or low-income populations, promotes non-discrimination in federal programs affecting human health and the environment, and provides minority and/or low-income populations with access to public information and an opportunity to participate in matters relating to the environment.

Homes near the Jetport are predominantly owner-occupied with 65.8% owner occupancy in Census Tract 17.01 and 67.2% owner occupancy in Doña Ana County. Incomes near the study area are lower than comparable state income. Median family income is $44,518 in Doña Ana County and $47,714 in Census Tract 17.01. The median family income in New Mexico is $54,513. Poverty rates follow a similar pattern. The family poverty rate is 21.5% in Doña Ana County and 20.2% in Census Tract 17.01. The New Mexico family poverty rate is 15.6%. Based on incomes and poverty rates, areas near the study area are a potential community of concern for environmental justice. Further evaluations may be required.

4. Historic Properties, Cultural Resources (Section 106 Resources)

Pursuant to the National Historic Preservation Act of 1966, as amended through 1992, and applicable regulations, all federally funded or permitted undertakings must consider the direct and indirect effects of a proposed project on archaeological, cultural, and historic resources. Cultural resources are evaluated in consultation with the State Historic Preservation Officer (SHPO). Field surveys may be required to determine potential impacts to historic and cultural resources.

A search of the Archaeological Records Management Section (ARMS) data base shows one existing archaeological site located within the study area. However, given the terrain and movement of soils due to wind and weather, there could be additional sites found during a subsequent field survey effort. It is expected that a full archaeological field survey will need to be done since there have been no field surveys completed on the site within an acceptable time frame.

5. RECREATIONAL LANDS (SECTION 4(F) RESOURCES)

As part of the Section 4(f) requirements, the Federal Highway Administration (FHWA) evaluates projects for impacts on public parks, recreation areas, wildlife and waterfowl refuges, and historic sites. FHWA projects are required to avoid such properties unless there is no prudent and feasible alternative to using that property. If a 4(f) property is used, the project must take steps to minimize harm to that property. No Section 4(f) properties have been identified in the study area.

6. WILD AND SCENIC RIVERS

No Wild and Scenic Rivers are located within the study area.

7. LIGHT EMISSIONS AND VISUAL IMPACTS

The placement of airfield lighting must be considered if close to sensitive receptors, like houses and schools. Airfield lighting has the potential to visually impact nearby residents. Light emissions from airports typically do not visually impact nearby community members because the lighting is placed in an upward orientation.

The location of the Jetport does not visually impact the surrounding vicinity because of its rural character. The nearest residential development is located east of the Jetport near the intersection of NM 136 and NM 273.

8. MULTI-MODAL TRANSPORTATION

The study area is mainly an industrial region and not popular for recreational walking or biking. There is no transit to or from the Jetport.

B. NATURAL FACTORS

1. GEOLOGY

Southern Doña Ana County is located in the Mexican Highland Section of the Basin and Range Physiographic Province. This part of New Mexico is influenced by the Rio Grande Rift, which consists of two parallel faults that extend in a north-south direction across New Mexico. For the last 30 million years, geologic movement has occurred along the faults. Dormant volcanoes and basalt formations are found in areas bordering the rift. Elevation ranges from 3,760 to 4,110 feet above MSL. The terrain is uneven and slopes downward to the northeast.

The upland western and southern parts of the project area are situated on a mesa. Geologic formations include Quaternary alluvium in lower areas near the Rio Grande, Quaternary piedmont alluvial deposits on the mesa edge, and Quaternary Santa Fe group on the mesa. Drifting dunes are present in some areas.

2. AIR QUALITY

The Clean Air Act (NMED, 2013e; USEPA, 2013d) of 1970 established National Ambient Air Quality Standards (NAAQs) to protect public health from impacts associated with six criteria pollutants.

The Jetport is located just outside a designated non-attainment area for ozone due to its proximity to El Paso and Mexico. There are also PM10 issues that arise during periods of high wind in the area. Soil erosion, sedimentation impacts, and windblown dust conditions can exist.

3. VEGETATION

The area surrounding the Jetport primarily supports a Desert Grassland and Chihuahuan Desert Scrub vegetation community, as well as developing urban and cultivated lands. The dominant plant species expected to be present include mesquite, broom dalea, four-wing saltbush, soaptree yucca, and Creosotebush. New Mexico noxious weed species may be present in disturbed areas.

4. WILDLIFE

Wildlife habitat consists of Desert Grassland and Chihuahuan Desert Scrub. Wildlife populations near the Jetport are limited by the lack of water sources. Common bird species include western kingbird, Say's phoebe, great-tailed grackle, scaled quail, white-crowned sparrow, northern mockingbird, savannah sparrow, pyrrhuloxia, house finch, house sparrow, and mourning dove. Common mammal species include desert cottontail, coyote, and black-tail jackrabbit. Common reptile species include checkered whiptail, little striped whiptail, greater earless lizard, and prairie lizard.

5. ENDANGERED AND THREATENED SPECIES

The Endangered Species Act of 1973 regulates the protection of endangered, threatened, and proposed species and their critical habitats. In addition, the State of New Mexico also lists species as endangered, threatened, and sensitive.

Few protected species are likely to occur near the Jetport. No suitable riparian, aquatic, cliff, prairie/grassland, or forest habitat that are required to support most listed species for Doña Ana County are present within the area. The Rio Grande or associated riparian zones are not located near the Jetport.

Potential suitable habitat for the state endangered sand prickly pear, Wilcox pincushion cactus and night-blooming cereus may be present within the vicinity of the Jetport.

Potential suitable habitat for the state protected common ground dove may also be present. Western burrowing owls and several other species of migratory birds may nest within adjacent areas. The owl is known to occur within the vicinity, and nest sites may be present in abandoned mammal burrows near the Jetport.

6. WETLANDS AND WATERWAYS (SURFACE WATER)

Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers (USACE) to prohibit or regulate, through a permitting process, discharge of dredged or fill material in waters of the U.S. In addition, Executive Order 11990, Protection of Wetlands, requires federal agencies to avoid, whenever possible, adversely impacting wetlands.

Few wetlands are present in the vicinity, however, areas consistent with the USACE Arid West Supplement may qualify as wetlands depending on moisture levels during the growing season. Additionally, there are several unnamed ephemeral waterways and irrigation ditches to the east of the Jetport. Therefore, further field surveys will be required to make a final determination.

7. FLOODPLAINS

Protection of floodplains is required by Executive Order 11988, Floodplain Management, which requires that potential impacts to floodplains be assessed to reduce the risk of flood loss, minimize impacts from flooding on human safety, and protect the natural resource value of healthy floodplains.

The Jetport is currently identified as being outside the 500-year Special Flood Hazard Area, as defined by Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM) 35013C1025 E dated effective September 27, 1991 and 35013C1050 F, dated effective September 3, 1992.

8. SOILS AND FARMLAND

US Congressional Public Law 95-87 (Federal Register January 32, 1978: Part 657) requires the Natural Resource Conservation Service (NRCS) to identify and locate prime and unique farmlands. These farmlands are protected in accordance with the Farmland Protection Act of 1981. Prime farmlands are defined as land that has the best combination of physical and chemical characteristics for producing food and agricultural crops. Unique farmlands are land under cultivation other than prime farmland that is used for production of high value food and fiber crops.

Table 1D lists two soil mapping units found surrounding the Jetport according to the U.S. department of Agriculture's Natural Resource Conservation Service web soil survey (USDA-NRCS, 2016). Both Wink-Harrisburg association and Wink-Pintura complex cover the area equally. Neither soil units are classified as prime farmland. Based on erosion factors, the soil units are more susceptible to wind erosion than they are to water erosion.

Table 1D – Soil Mapping Units

Soil Mapping Unit	Percent of Project Study Area	Erosion (k) Factor[1]	Wind Erodibility Group[2]	Farmland Classification
Wink-Harrisburg association	43.7%	0.24	3	Not prime farmland
Wink-Pintura complex	56.3%	0.24	2	Not prime farmland

[1]K values range from 0.02 to 0.69–the higher the value, the more susceptible the soil is to sheet and rill erosion by water.
[2]Wind erodibility group values range from 1-8–the higher the value, the less susceptible the soil is to wind erosion.
Source: USDA-NRCS (2016)

9. ENERGY SUPPLY AND NATURAL RESOURCES

The use of energy supply and natural resources due to the future operations at the Jetport will be considered. There is potential for additional energy resources being required as the area expands, both on the airport site as well as because of the airport services. Doña Ana County will need to manage the need and availability of energy and consumptive natural resources as they relate to the future needs of the Jetport.

10. SOLID WASTE

Airport projects can often produce a level of solid waste which must be dealt with on site or transferred to a solid waste facility in the area. It is not expected that a substantial amount of solid waste will be produced but the conditions will be evaluated and addressed appropriately throughout airport development.

11. HAZARDOUS MATERIALS

A preliminary evaluation of Environmental Protection Agency (EPA) Region 6 data determined that no Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) sites of concern exist within the study area.

Given the expected transport of potentially hazardous materials such as fuel, agricultural material, and more, Doña Ana County will need to confirm a plan is in place to address recovery, clean-up, and emergency response to hazardous materials. This includes a clear process for disposing and storing of potentially hazardous materials.

12. CONSTRUCTION IMPACTS

There may be some noise, dust generation, and storm run-off of solid waste during construction. All Doña Ana County ordinances will be followed to limit construction noise impacts and manage potential impacts from dust generation and storm run-off.

13. CONTROVERSY

To date, there has been little or no controversy expressed over the Jetport's plans. However, all development or expansion plans will be shared with the public as well as local, regional, state agency to ensure full disclosure. All issues or concerns expressed will be documented and addressed as part of the planning and development process.

14. SECONDARY OR CUMULATIVE IMPACTS

Secondary or cumulative impacts could result from the increased economic development opportunities that may be enhanced with future airport improvements. However, given the economic conditions of the area, these will be considered beneficial and bring positive impacts to the region.

C. CONCLUSIONS

The information above is just a preliminary analysis of potential environmental issues within the airport study area. As specific projects are identified for design and construction, further analysis will be required and a formal NEPA evaluation and documentation, under FAA requirements, will need to be completed by the County.

Chapter Two
FORECASTS

An important step in determining the timing and size of needed airport improvements is the preparation of aviation demand forecasts. The objective of the forecasts is to identify the magnitude of change that might reasonably be expected over time. Because of economic cycles and other factors, actual activity fluctuates from year to year and does not occur in the straight line that forecast charts typically show.

The base year for the Doña Ana County International Jetport at Santa Teresa (Jetport) forecasts is 2015, the most recent year for which there are actual activity records or estimates. This chapter presents forecasts of aviation activity at the Jetport over a 10-year period, and uses the following forecast milestones:

- Short-Term (2020)
- Mid-Term (2025)

Over time, activity should be monitored and compared to the forecasts, so that planning for the Jetport can respond to unforeseen changes and facility needs. The development of airport facilities and infrastructure should be demand-based and not time-based.

The chapter begins with a review of aviation trends and regional socioeconomic factors that affect aviation activity at the Jetport. Then, forecasts of aviation activity from other sources and forecasts for the following types of activity are presented:

- Based Aircraft. The number and type of aircraft based at the Jetport help determine future hangar, apron, and auto parking needs. Based aircraft fleet mix is the distribution of aircraft by type.
- Aircraft Operations. An aircraft operation is a landing or a takeoff. Aircraft operations at the Jetport are conducted by air taxi, general aviation (GA), or military aircraft. They are also divided between itinerant and local operations. (Local operations are training operations conducted within about 20 miles of an airport.) Operations forecasts help determine such items as runway capacity, apron vs. hangar needs, and fuel storage needs.
- Design Aircraft and Airport Reference Codes. The critical, or design, aircraft results from the aircraft operations forecast and determines the reference codes that identify many FAA airfield design standards. Until the cargo activity forecast is completed, the design aircraft and airport reference codes will be based on general aviation aircraft only.

An air cargo study for the Jetport was conducted as an associated task of this master plan. The study, contained in the appendices, includes a forecast of potential air cargo tonnage and aircraft fleet mix.

I. AVIATION TRENDS

This section presents historical national, state, and local aviation trends, along with recent national and state forecasts of aviation activity that may influence future activity at the Jetport.

A. NATIONAL AVIATION TRENDS

Every March, the FAA updates its national forecast of aviation activity. *FAA Aerospace Forecast Fiscal Years 2015-2035*, published in March of 2015, was the most recent update at the time the Jetport's forecasts were prepared, and it is the source of the following information.[1] For the GA component of aviation, the FAA tracks and forecasts the number of

[1] The forecast update released in late March of 2016 included a slightly more pessimistic forecast for the economy and for GA. However, it reported that the estimated number of active GA aircraft and the number of annual GA hours flown in 2015 increased slightly over the 2014 numbers. *FAA Aerospace Forecast Fiscal Years 2017-2037,* released in March of 2017, reports, "The long term outlook for general aviation is stable to optimistic…" Compared with the forecasts for 2015-2035, the FAA now projects slightly higher levels of GA active aircraft and GA hours flown for the same future years. The relative growth rates of the different segments of GA are similar in the past three years of the FAA's national forecasts.

active aircraft, hours flown, pilots, fuel consumption, and aircraft operations receiving air traffic services. The FAA summarized its view of GA nationwide:

> "The long-term outlook for general aviation is favorable, and near term also looks promising especially for piston aircraft activity which is sensitive to fuel price movements. While it is slightly lower than predicted last year, the growth in business aviation demand over the long term continues."

In reviewing 2014, the FAA noted that the GA aircraft market showed mixed results, but a slight improvement overall. Business jet and single engine piston segments improved, while turboprop and multi-engine piston markets declined. Overall, aircraft deliveries were up 1.0% and billings were up 6.2% compared to 2013. The comparison of deliveries by type in 2014, compared with 2013, follow:

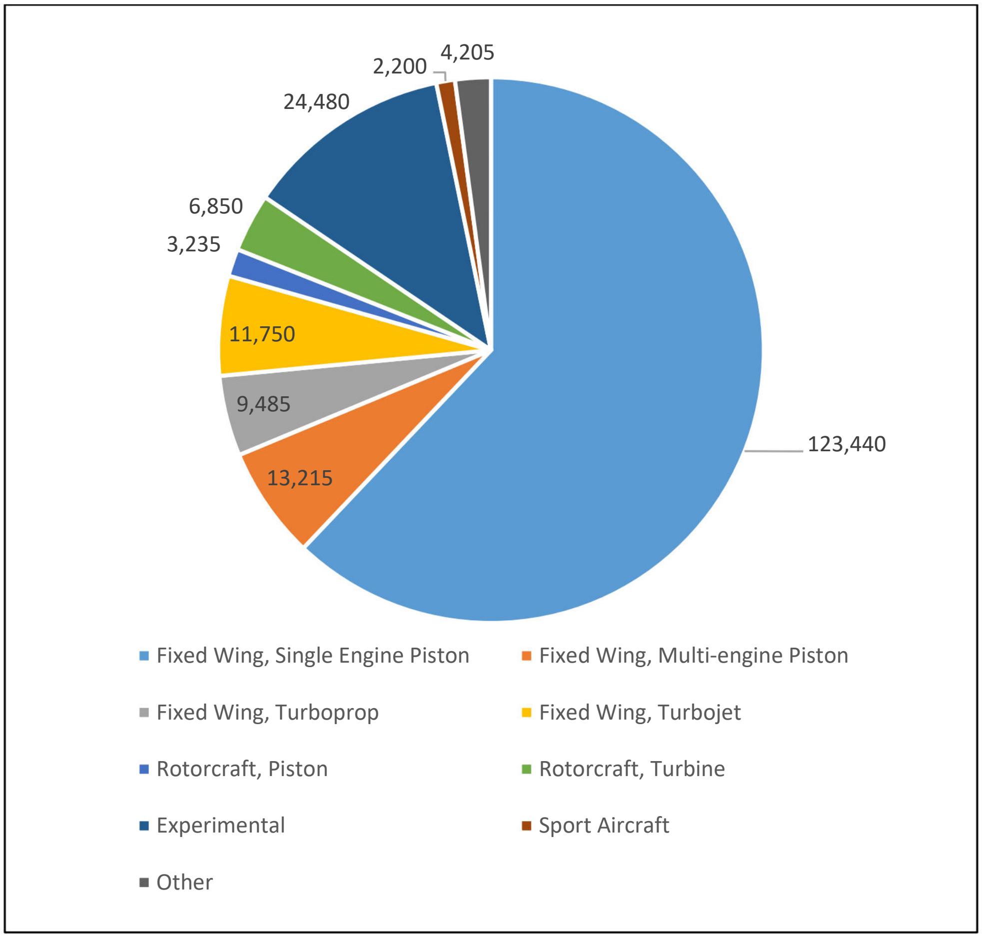
- Business jets up 12.3%
- Turboprops down 2.1%
- Multi-engine pistons down 10%
- Single engine piston up 6.2%

The estimated number of active[2] GA aircraft in 2014 was 198,860, divided as shown in **Exhibit 2A**. The number has been declining since 2007, when the FAA reported 231,606 active aircraft. The FAA projects very gradual growth in the number of active aircraft, to 214,260 in 2035.

The composition of the national GA fleet has been changing and is projected to change in the future. As Exhibit 2A shows, most of the fleet (62%) is fixed wing single engine piston aircraft, down from 69% in 2001. Piston-powered aircraft have been decreasing, while turbine-powered aircraft have been increasing. By 2035, the FAA projects fixed wing single engine aircraft will comprise 51% of the fleet.

[2] An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

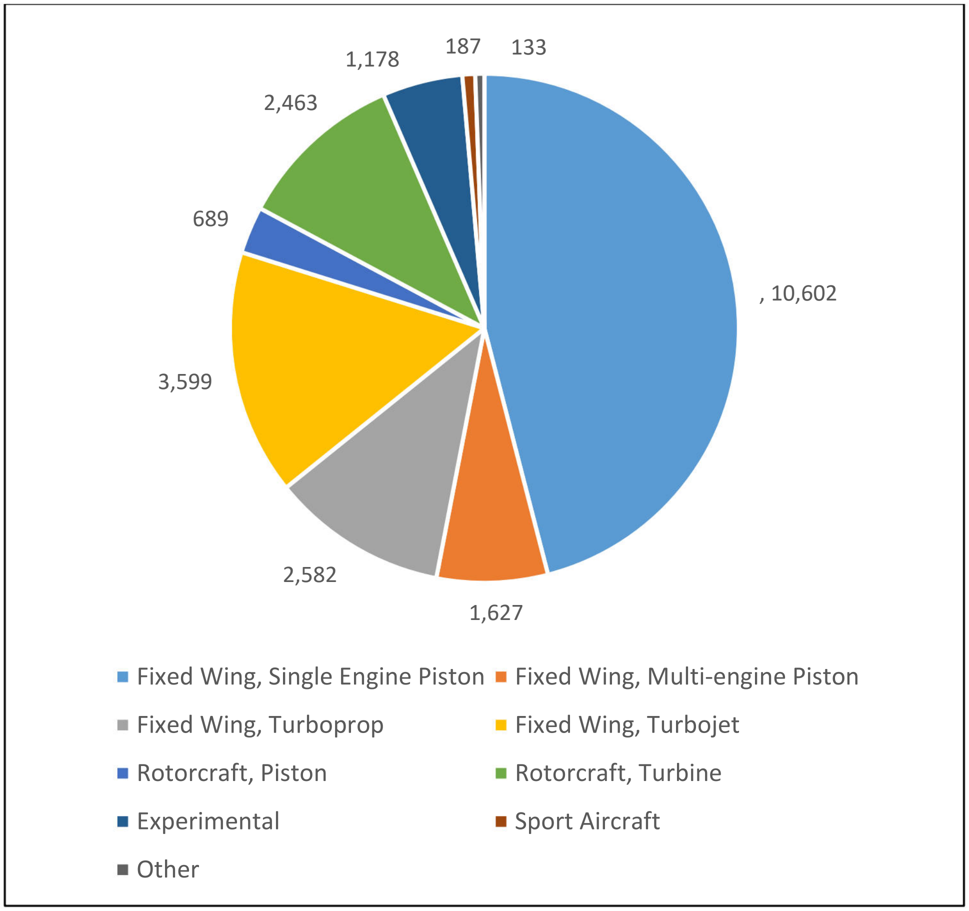
EXHIBIT 2A – ESTIMATED ACTIVE GENERAL AVIATION FLEET IN 2014



Source: *FAA Aerospace Forecast Fiscal Years 2015-2035*

Exhibit 2B shows that the composition of GA hours flown differs from the composition of active aircraft. The average GA aircraft was flown 116 hours in 2014, while the average turbine-powered aircraft was flown 308 hours and the average piston aircraft was flown 92 hours. The effect of the Great Recession is evident in the decrease in general aviation flight hours from 27.9 million in 2007 to 23.8 million in 2009. The number of annual hours flown increased to over 24 million in 2010 through 2012, then declined to 22.8 million in 2013, before increasing slightly to 23.1 million in 2014. The FAA projects general aviation hours flown to continue growing at an average annual rate of 1.4% per year, reaching 30.6 million hours in 2035.

EXHIBIT 2B – ESTIMATED GENERAL AVIATION HOURS FLOWN IN 2014 (THOUSANDS)



Source: *FAA Aerospace Forecast Fiscal Years 2015-2035*

The number of student pilots provides insight into the future of general aviation. Student pilot numbers had been declining for several years when the FAA issued a rule in 2010 that increased the length of time a student pilot certificate would be valid. As a result, the number of student pilots increased 65% in one year, from 72,280 to 119,119. Consequently, it is difficult to determine long-term trends in the number of student pilots. While the number of student pilots increased slightly every year from 2011 through 2014, the FAA projects a slow decline, to 112,200 student pilots in 2035. The total number of active pilots is projected to grow at a slow 0.1% annually from 2014 to 2035.

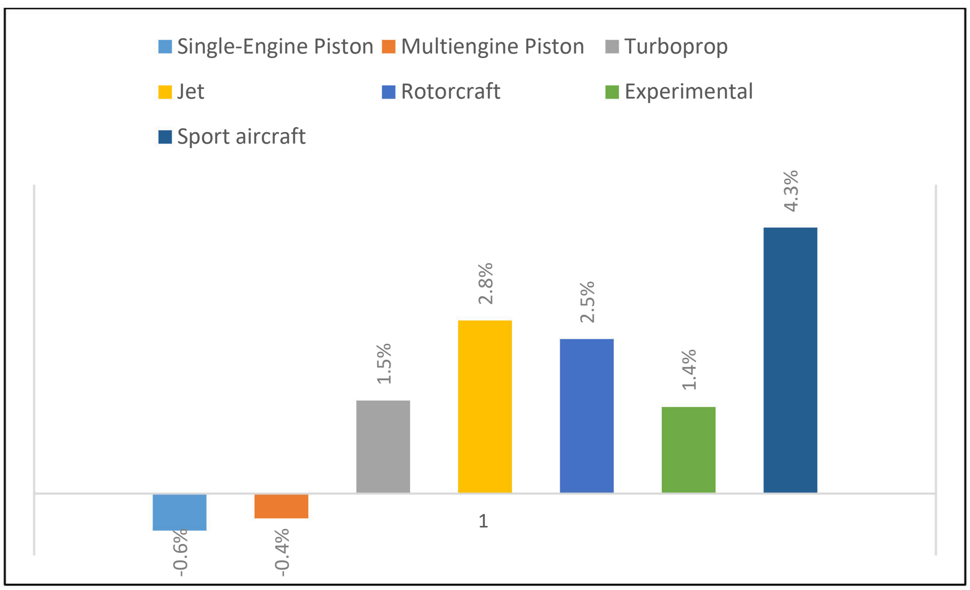
The FAA used economic forecasts developed by IHS Global Insight to project aviation demand. U.S. economic growth was projected to accelerate in the near term due to higher consumer spending spurred by solid gains in employment, improving consumer finances, and lower gasoline prices. Annual growth rates of economic indicators that were forecast for the years 2014 through 2035 follow:

- Real Gross Domestic Product 2.4%
- Real Disposable Personal Income 2.6%
- Consumer Price Index 2.1%
- Refiners' Acquisition Cost Average[3] 2.4%

The FAA's GA forecasts relied heavily on discussions with industry experts, along with the results of the 2013 General Aviation and Part 135 Activity Survey. The General Aviation and Part 135 Activity Survey has been conducted annually since 1977. The survey methodology has been improving since 2004, with larger samples and more categories. In 2005 the FAA added the light sport aircraft category.

The FAA's projected annual growth rates for GA active aircraft and hours flown, from 2014 through 2035, appear in **Exhibit 2C** and **Exhibit 2D**. The annual growth rate for the whole fleet is 0.4% and the growth rate for all GA hours flown is 1.4%.

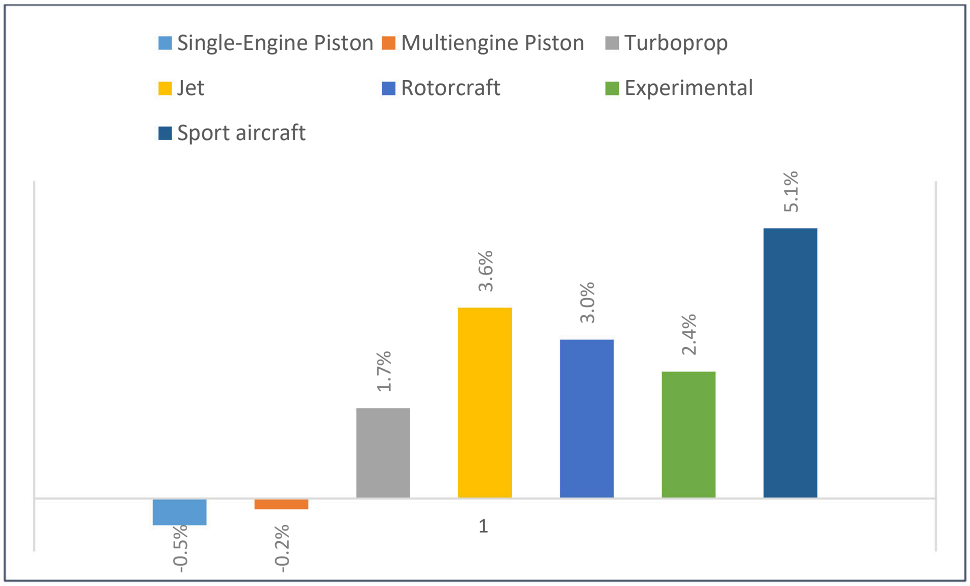
EXHIBIT 2C – ANNUAL GROWTH RATE FOR GA ACTIVE AIRCRAFT, 2014-2035



Source: FAA Aerospace Forecast Fiscal Years 2015-2035

[3] The cost of oil is significant to the American economy in general, but particularly affects the level of discretionary GA flying. In mid-2008, market speculation caused the price of crude oil to spike above $140 per barrel. Retail fuel prices have stayed relatively high until recently. The estimated cost of oil in 2014 was $97.76 per barrel. The price for 2015 was projected to fall to $60.52, which is much higher than the drop that actually occurred.

EXHIBIT 2D – ANNUAL GROWTH RATE FOR GA HOURS FLOWN, 2014-2035



Source: FAA Aerospace Forecast Fiscal Years 2015-2035

The FAA forecasts incorporate inventories and forecasts supplied by the General Aviation Manufacturers Association (GAMA) in its *General Aviation Statistical Databook and Industry Outlook* for 2014. GAMA heralded Congress' passage of the Small Airplane Revitalization Act in 2013 as a positive development for the industry. The Act adopted industry recommendations for increasing safety and reducing government and industry certification costs of light airplanes, with an implementation deadline of December 31, 2015.

Honeywell Aerospace's forecast for business jet deliveries (November 2015) is global in scope. Up to 9,200 new business jets worth $270 billion were projected for the years 2015 to 2025, which was a slight drop from the previous year's forecast. Deliveries in 2016 were projected to be slightly lower than 2015, reflecting weaker emerging market demand, partially offset by deliveries to fractional operators. While the near-term forecast is relatively flat, Honeywell projects 3% average annual growth in the longer-term future. The recovery in flight activity weakened in 2015, compared to 2014, and has not yet reached pre-recession levels. Honeywell uses a variety of sources for its forecasts, including macroeconomic analysis, aircraft manufacturers' development plans, aerospace industry experts' opinions, and interviews with more than 1,500 business jet operators.

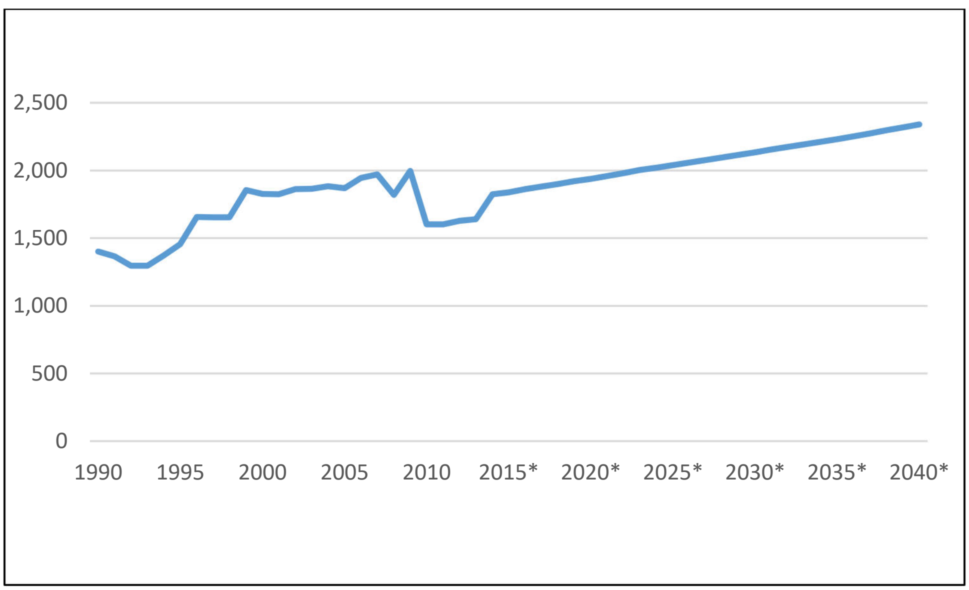
B. STATE AVIATION TRENDS

In addition to its annual *Aerospace Forecast*, the FAA updates forecasts for individual airports every year in its *Terminal Area Forecasts* (TAF). For the state of New Mexico, the TAF that was published in January of 2016 shows the following history and forecasts:

- A very slight decline in the number of based aircraft from 2005 to 2015 (-0.2% average annual growth) and a slight increase (1.0% average annual growth) between 2015 and 2025.
- Significant decline in the number of GA aircraft operations between 2005 and 2015, with low growth projected from 2015 to 2025.
    - o Itinerant GA operations declined 2.6% per year over the last ten years and are projected to increase 0.5% annually in the next ten years.
    - o Local GA operations declined 3.6% per year over the last ten years and are projected to increase 0.3% annually in the next ten years.

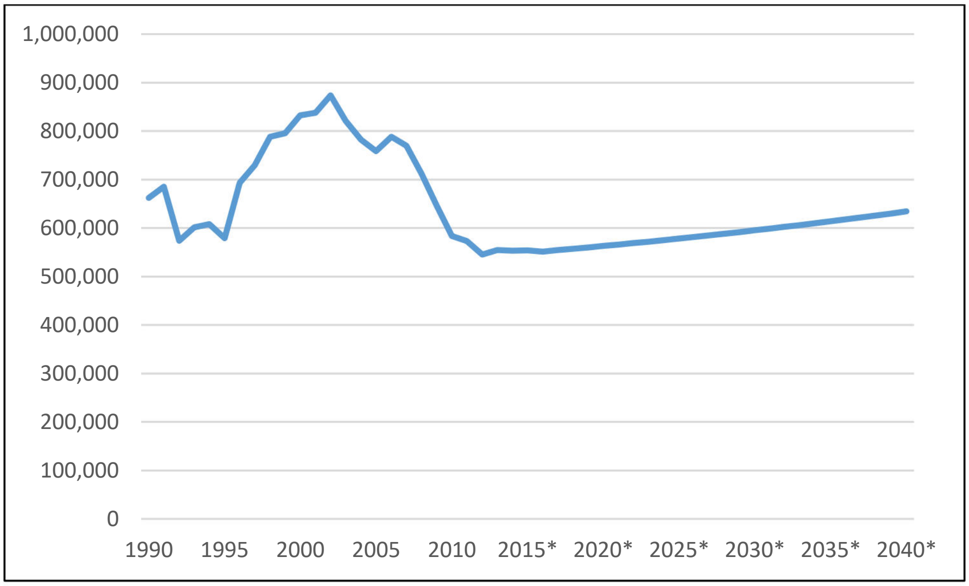
As **Exhibits 2E and 2F** show, the FAA's TAF projects New Mexico's based aircraft numbers to recover to pre-recession levels, but does not project GA operations in New Mexico will grow to anywhere near pre-recession levels by 2040, the end of the TAF's forecast period.

EXHIBIT 2E – NEW MEXICO HISTORICAL AND FORECAST BASED AIRCRAFT



Source: FAA's Terminal Area Forecast, January 2016

EXHIBIT 2F – NEW MEXICO HISTORICAL AND FORECAST GA OPERATIONS



Source: FAA's Terminal Area Forecast, January 2016

The TAF covers only the 50 New Mexico airports that are part of the National Plan of Integrated Airport Systems (NPIAS). TAF projections for individual airports tend to be very conservative; for many airports the forecasts show a continuation of the most recent levels of based aircraft and operations, with no future growth.

The most recent update of the *New Mexico Airport System Plan* (NMASP), published in 2014, prepared forecasts for 55 airports, including all 50 airports that are in the NPIAS. The NMASP looked at several aspects of aviation additional to the numbers of based aircraft and aircraft operations to determine aviation trends in the state. Most aviation trend indicators were found to be decreasing or showing a very slow recovery after the Great Recession.

To determine aircraft operations trends, the NMASP examined the six airports within New Mexico that have air traffic control towers (ATCT). At other airports in the state that lack ATCT, the aircraft operations are estimated by airport management, and often estimates are carried over from year to year, resulting in less accuracy than airports with ATCT. At each of the six airports—Albuquerque International Sunport, Double Eagle II, Four Corners Regional, Lea County Regional, Roswell International Jet Center, and Santa Fe Municipal—operations declined every year from 2000 through 2013. Itinerant operations declined 53% and local operations declined 71% over the 13-year period.

The NMASP reported that the number of active pilots in the state had declined 15% from 5,385 in 2002 to 4,562 in 2013. However, the trend was not applicable to all types of pilot licenses. The number of student pilots increased 29% from 2002 to 2013, and the numbers of flight instructors increased 6% over the same time period.

Aircraft registrations in New Mexico grew from 3,528 in 2000 to peak at 4,102 in 2008. Registrations in 2013 (3,415) had declined 17% since 2008. (As of February 2016, the number had declined further, to 3,244.) The NMASP found every aircraft type declined except helicopters. The composition of registered aircraft types in New Mexico had changed since 2000, with single-engine piston aircraft reflecting 61.4% of the total, down from 65.1%. Multi-engine piston aircraft declined from 8.6% to 6.3%. The proportions of turboprop aircraft, jet aircraft, helicopters, and “other” aircraft (balloons, dirigibles, ultralights, gliders, and experimental aircraft) increased between 2000 and 2013.

Aircraft based at the 55 New Mexico airports that were studied declined 24% from 2,137 in 2007 (the number reported in the 2009 update of the state system plan) to 1,625 in 2013.

The NMASP forecasts slow growth over the next few years. It used the TAF as its base case forecast, and then developed a high forecast that used forecasts developed since 2010 for individual airports in airport planning studies. The high forecast for airports without recent forecasting used a slight increase over the TAF, accounting for the conservative nature of the TAF, which often presents flat-line forecasts for airports.

For based aircraft, the NMASP base case forecast was for 1.1% average annual growth up to 2,061 by 2035. The high forecast for based aircraft reflected 2.1% average annual growth, resulting in 2,545 based aircraft.

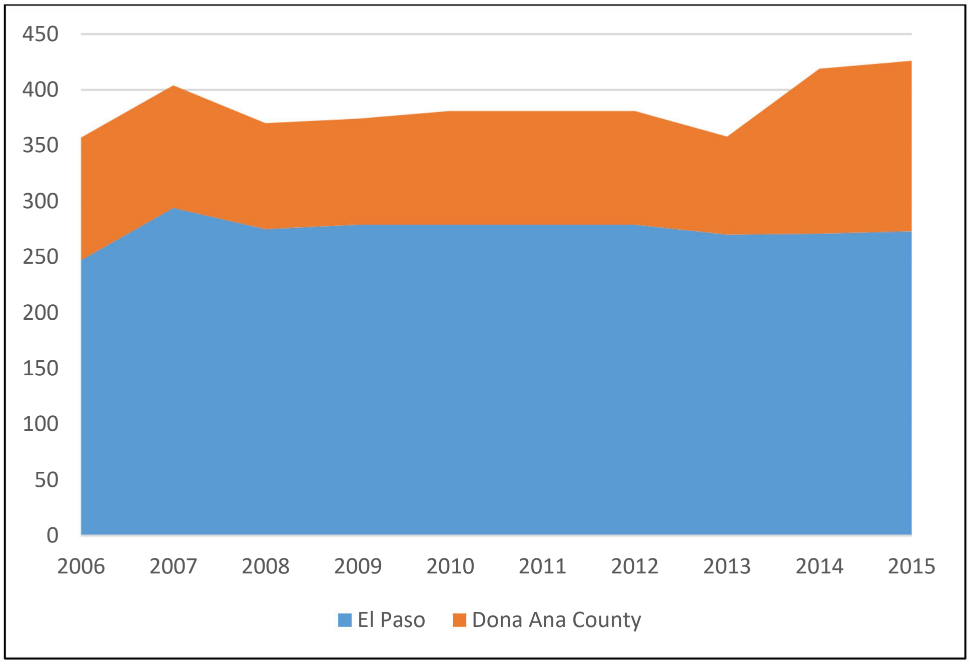
GA aircraft operations in the base case were projected to grow at 0.7% annually from 546,472 in 2013 to 635,727 by 2035. For the high forecast, operations would grow at 1.7% annually, to 787480 by 2035.

C. LOCAL AVIATION TRENDS

A general aviation airport’s service area typically extends a distance of 25 miles, or one-half hour’s driving distance from the airport. Consequently, the Jetport’s service area includes the southern part of Doña Ana County and most of the El Paso metropolitan area. Aviators in northern Doña Ana County are farther than 25 miles away and are served by Las Cruces International Airport. While the Mexican city of Juarez lies within 25 miles of the Jetport, it is served by Ciudad Juarez Abraham Gonzalez International Airport. In addition, the international border inhibits Juarez residents’ use of the Doña Ana County Jetport.

One way to analyze trends within the Jetport’s service area is to analyze the number of aircraft that have been based at the Jetport and at El Paso International Airport, which has a service area that overlaps the Jetport's. **Exhibit 2G** shows the total number of based aircraft for both airports over the last ten years.

EXHIBIT 2G – SERVICE AREA BASED AIRCRAFT



Source: The FAA's Terminal Area Forecasts, January 2016

According to the FAA's TAF, based aircraft at El Paso International peaked at 294 in 2007, declined to 270 in 2013, and then rose very slightly to 273 in 2015. The TAF's based aircraft numbers at Doña Ana County International appear more variable than at El Paso International, but they are probably less accurate for a couple of reasons—less than annual updating of the numbers and difficulties encountered when the FAA began a based aircraft inventory nationwide.[4]

Nevertheless, the composite numbers for the two airports show slight growth over the last ten years rather than the expected decline resulting from the Great Recession. This may be due to the closure of the privately owned public use Horizon Airport on the east side of El Paso, causing aircraft owners based there to move to another airport. **Table 2A** compares the number of aircraft at the three El Paso area public use airports in 2005 with the number at the two airports remaining in 2015.

[4] Some revisions have been made to the based aircraft numbers used for the Jetport's forecast later in this chapter. It seems unlikely that the number declined from 102 (in 2012) to 88 (in 2013), then grew to 148 (in 2014), as the FAA's records show.

Table 2A – Possible Effect of Horizon Airport Closure

	SE	ME	Jet	Helicopter	Glider	Ultralight	Total
2005							
El Paso Int'l	158	49	28	12	0	0	247
Horizon	68	5	0	0	3	8	84
Doña Ana County	74	15	8	5	0	0	102
Total	**300**	**69**	**36**	**17**	**3**	**8**	**433**
2015							
El Paso Int'l	186	47	27	13	0	0	273
Doña Ana County[5]	107	22	16	8	0	0	153
Total	**293**	**69**	**43**	**21**	**0**	**0**	**426**

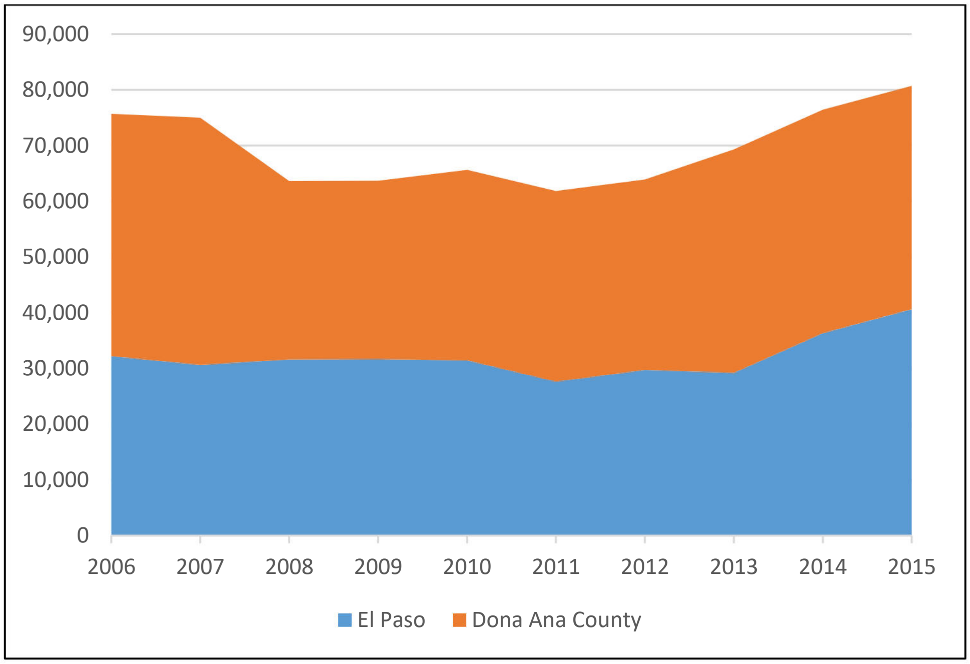
Source: FAA Airport Master Records.
SE = Single-Engine, ME = Multiengine

Table 2A shows that the total number of based aircraft decreased by seven between 2005 and 2015. However, the number of jets increased by seven and the number of helicopters increased by four, while the number of single-engine piston aircraft decreased by seven. The decrease in based aircraft included three gliders and eight ultralights that were based at Horizon Airport. These types of aircraft would not be appropriate mixing with jet and other high speed traffic at the Jetport or at El Paso International. The decrease in single engine piston, glider, and ultralight aircraft may have been due to the economic hardship of the recession, or the aircraft may have been moved to a private location, such as Cielo Dorado Estates, the residential airpark in Sunland Park about 3 ½ miles northeast of the Jetport.

Exhibit 2H shows the trend in the number of GA aircraft operations at El Paso International and at the Jetport over the last ten years.

[5] Aircraft based at the Jetport has increased since the original inventory was completed. According to the airport manager's latest inventory validated in April 2017, there are 166 based aircraft, including 113 single engines, 24 multi-engines, 19 jets, and 10 helicopters.

EXHIBIT 2H – SERVICE AREA GA OPERATIONS



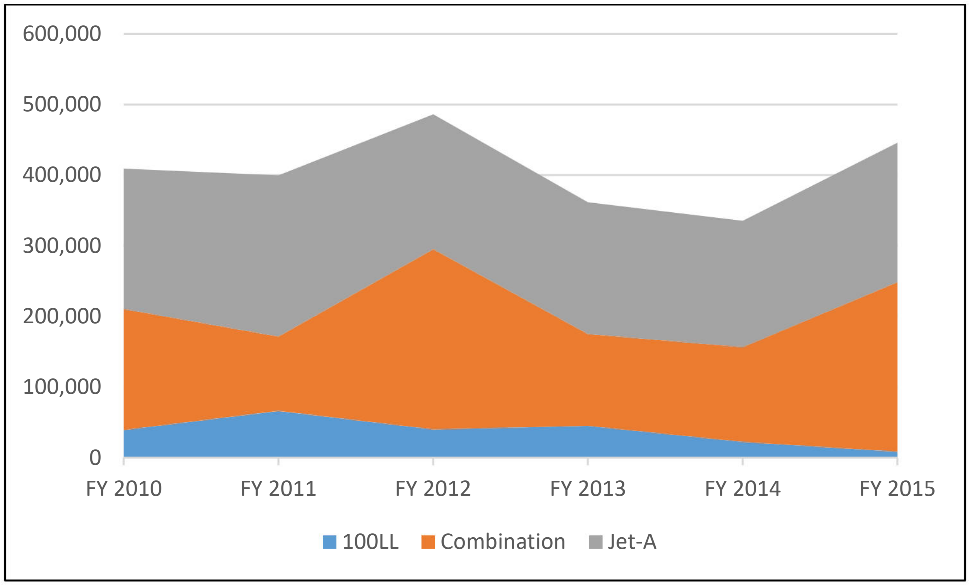
Source: The FAA's Terminal Area Forecasts, January 2016

The dip in GA aircraft operations shown in Exhibit 2H is a profile fairly consistent with national statistics for GA hours flown. GA local and itinerant operations at El Paso International come from actual air traffic control counts, while those for the Jetport are estimated, with estimates routinely updated once every three years instead of annually. This exhibit shows composite operations totaling over 75,000 in 2006 declining to under 62,000 in 2011 and then growing to over 80,000 in 2015. The recent growth may be due to economic recovery, lower fuel prices, and the contribution of activity that used to occur at Horizon Airport.

GA operations at the Jetport and at El Paso International are roughly the same, about 40,000, while the Jetport has about half the number of based aircraft as El Paso International. The difference is due to local (training) operations, which occur twice as often in the less congested airspace in Doña Ana County.

Other statistics that can illustrate aviation trends are the amounts of aircraft fuel used over time (**Exhibit 2I**). Vendors and Jetport users allowed to self-fuel pay the County a fee per gallon for their usage of 100LL (low lead) fuel for piston aircraft and Jet-A fuel for jet and turboprop aircraft. Unfortunately, the gallons of fuel shown are a better reflection of fuel deliveries and flowage fee payments over time than when aircraft are actually fueled. Consequently, the record of gallons over the last six fiscal years do not show an identifiable trend in the usage of fuel. The predominance of Jet-A fuel compared to 100LL fuel is not surprising, even though the Jetport has many more based piston aircraft than based jet or turboprop aircraft. As the FAA's national survey indicates, turboprop and jet aircraft are typically flown more hours per year than piston aircraft.

EXHIBIT 2I – FUEL FLOWAGE (GALLONS)



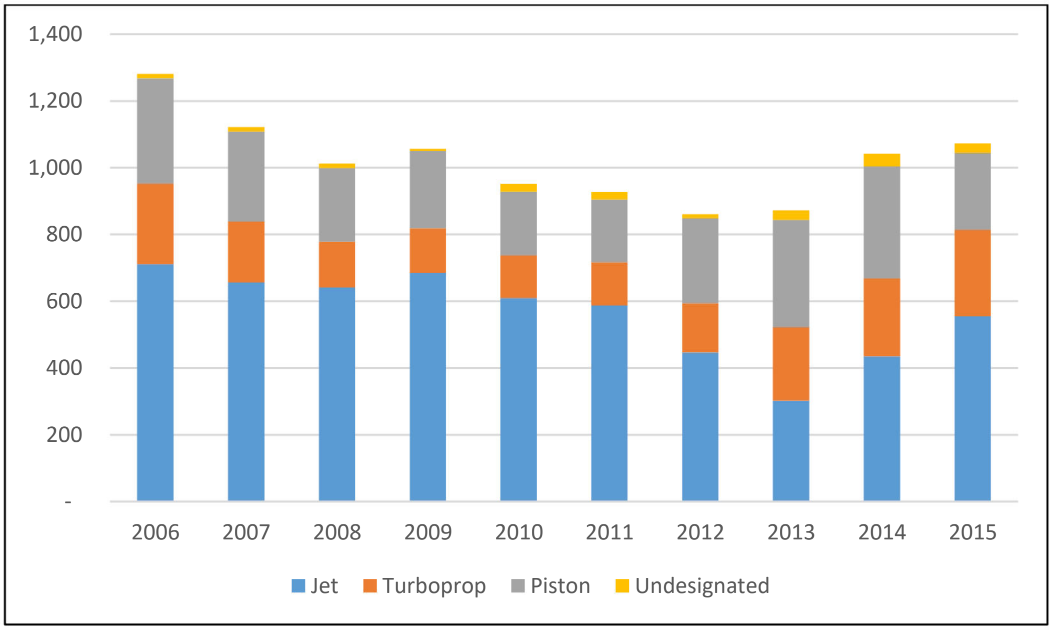
Source: Doña Ana County Records

Instrument Flight Rules (IFR) records comprise the most accurate data available to reflect Jetport trends, although they pertain to a small portion of the activity that occurs at the Jetport. Most aircraft operations at the Jetport are conducted under Visual Flight Rules (VFR).

Exhibit 2J shows the ten-year history of IFR departures at the Jetport.[6] Consistent with national trends, the chart shows annual declines during and after the recession, with recovery only in the last two years and not up to the pre-recession level. The highest numbers of IFR departures shown is 1,281 in 2006. The number declined at an average annual rate of 6.4% to a low of 861 in 2012. Since 2012, the average annual growth rate has been 7.6%, reaching 1,073 in 2015. In all but one year, jet aircraft accounted for the majority of IFR departures. However, turboprop IFR departures have recovered at a faster pace than jet IFR departures, so that the number in 2015 was slightly higher than the number in 2006.

[6] According to FAA records compiled by GCR, Inc., 10,199 IFR departures from K5T6 were recorded in the past ten years (2006 through 2015). During the same period, 6,501 IFR arrivals were recorded. The lower number of arrivals is attributed to some pilots closing their IFR flight plans enroute and then landing by VFR at the Jetport.

EXHIBIT 2J – IFR DEPARTURES



Source: FAA records compiled by GCR, Inc.

D. SOCIOECONOMIC TRENDS

Aircraft ownership and air transportation use tend to rise and fall with the local population and economy.

The population of the region has been growing and is forecast to continue growing at a relatively high rate. **Table 2B** compares historical, current estimated, and projected populations of the local, state, and national entities related to the Jetport. The table shows that the populations of Doña Ana County and the El Paso Metropolitan Statistical Area (MSA) have grown at an average annual rate of 1.7%, nearly twice the growth rate for the United States. These areas' population growth is projected to continue to outpace the nation. Both Mexico and the State of Chihuahua have grown faster than the United States since 2000, but the Mexican government expects their growth to slow to 0.9% and 0.8% per year, rates comparable to the Census Bureau's projections for the United States. Ciudad Juarez is the largest city in the Mexican state of Chihuahua, accounting for about 40% of the population in the state.

It is significant that Las Cruces, which is located within Doña Ana County but outside the Jetport's GA service area, accounts for nearly half of the population of the county. In addition, only about 10% of the County population lives near the Jetport.[7] This emphasizes how significant El Paso residents are to GA activity at the Jetport.

Table 2B – Historical and Projected Populations

	United States	New Mexico	Doña Ana County	Texas	El Paso MSA	Mexico	Chihuahua
Historical							
2000	281,421,906	1,819,046	174,880	20,851,820	679,622	100,895,811	2,987,927
2010	308,745,538	2,065,826	210,536	25,145,561	804,123	114,255,555	3,525,273
Estimated							
2015	321,418,820	2,085,109	226,855	27,469,114	877,248	121,005,815	3,710,129
Projected							
2020	334,503,000	2,351,724	243,164	30,541,978	956,347	127,091,642	3,882,739
2025	347,335,000	2,487,227	258,887	33,699,307	1,038,505	132,584,053	4,037,778
Annual Growth							
2000-2015	0.9%	0.9%	1.7%	1.9%	1.7%	1.2%	1.5%
2015-2025	0.8%	1.8%	1.3%	2.1%	1.7%	0.9%	0.8%

Sources: U.S. Census Bureau for United States, New Mexico, Doña Ana County, Texas, and El Paso MSA populations 2000-2015, except University of New Mexico Bureau of Business and Economic Research (BBER) for 2015 estimate of Doña Ana County. Source for Mexico is Instituto Nacional de Estadistica Informatica (INEGI) and for Chihuahua is Consejo Nacional de Poblacion (CONAPO).

The City of El Paso's January 2016 *Community Profile* anticipates that the expansion of Fort Bliss will generate significant regional population growth in the coming years. In fact, Fort Bliss is the top employer in El Paso, accounting for over 41,000 military and civilian jobs.

The geographic location of El Paso is another important driver of the economy. El Paso is the largest metropolitan area on the U.S./Mexican border and 80% of its population is Hispanic. Fluency in English and Spanish is needed in many customer service and management occupations and desired in others. In 2015, the City's Economic and International Development Managing Director estimated 50,000 jobs in El Paso were directly or indirectly tied to manufacturing in Juarez. The major manufacturing industry in Juarez began with the maquiladora program, started by the Mexican government in the mid-1960s.

Maquilas are manufacturing plants for U.S. companies that are located in Mexico. In a manner similar to foreign trade zones in the U.S., goods are allowed temporary entry into

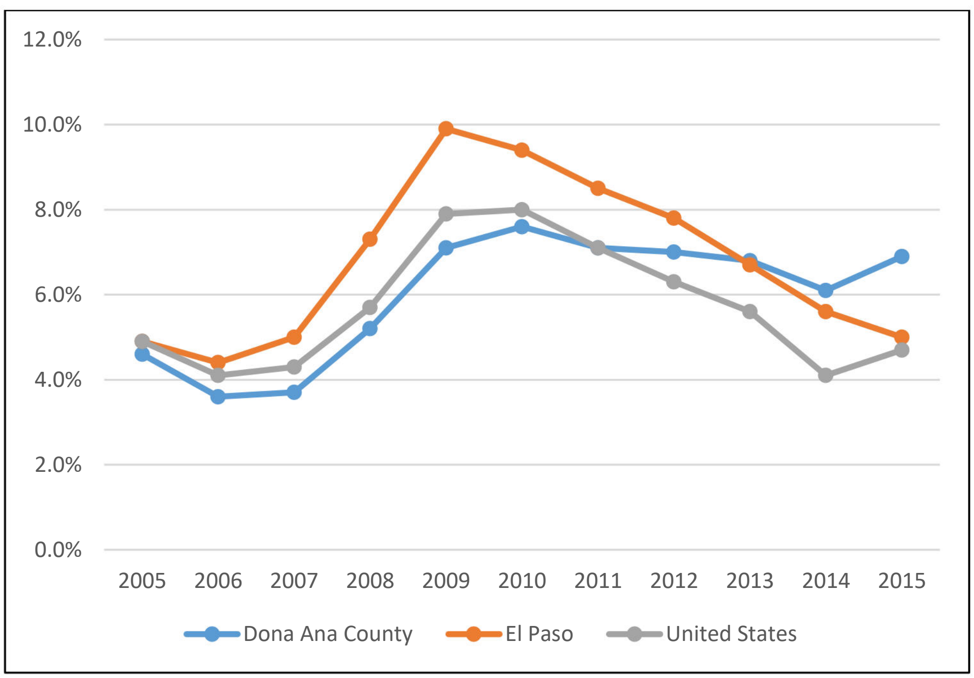
[7] The closest city to the Jetport is Sunland Park, a community with a population of 15,400, according to the Census Bureau's 2014 estimate. Census-designated places near Sunland Park (Berino, Chamberino, La Mesa, La Union, and Santa Teresa) had a combined population of 8,452 in 2010.

maquilas in order to modify, manufacture, or alter them without paying full customs duties or value-added taxes. When the assembled goods are exported back into the U.S., duties are paid only on the value added to those goods in Mexico. From the maquiladora industry, associated manufacturing, warehousing, and logistics operations have grown to other parts of Mexico, El Paso, and New Mexico.

The region encompassing El Paso, Southern Doña Ana County, and Ciudad Juarez is referred to as the Borderplex. While the Santa Teresa area was undeveloped until the 1970s, its contribution to the Borderplex economy has been growing.

After the March 2008 publication of the last airport master plan, the Great Recession hit the national and local economies. One of the major local impacts of the recession was the thwarting of large-scale residential development planned for the Santa Teresa vicinity. Many jobs were lost during and shortly after the recession, as **Exhibit 2K** shows. The exhibit shows December unemployment rates for Doña Ana County, El Paso, and the United States from 2005 through 2015. Regional unemployment rates peaked in 2009/2010. El Paso's highest unemployment rate was 9.9% in 2009. Doña Ana County's highest unemployment rate was 7.6% in 2010. Except for a slight uptick in December of 2015, the unemployment rate in the region, like that of the country, has been falling since the recession. INEGI reported a very similar unemployment rate to the U.S. for Mexico in December 2015: 4.9%.

EXHIBIT 2K - UNEMPLOYMENT RATE TRENDS



Source: www.homefacts.com

Major post-recession developments have brought job growth to Santa Teresa. Two developments of particular note are the Foxconn manufacturing plant and the Union Pacific rail facility.

In 2009, the Taiwanese electronics manufacturer Foxconn built the first phase of a plant producing computers for the U.S. market. It was located on a 440-acre site in San Jeronimo, just south of the border and near the Santa Teresa Port of Entry. By 2013, Foxconn employed 5,600 workers and announced plans to expand eight-fold and employ tens of thousands of workers. In the fall of 2015, Foxconn executive Francisco Uranga reported employing 8,600 workers and producing 52,000 computers per day, resulting in nearly $11 billion in annual exports.

On 2,200 acres, just west of the Jetport, Union Pacific built an intermodal ramp in 2014. This rail facility has an annual lift capacity of around 225,000 containers and is a big improvement to logistics efficiency along Union Pacific's 760-mile Sunset Route between El Paso and Los Angeles. The intermodal facility has attracted adjacent distribution and logistics businesses that want to lower their drayage, distribution, and transportation costs.

These major developments have helped generate other new businesses, jobs, and associated development. In the past two years, 13 new companies have moved to the Santa Teresa area industrial parks, according to the Mesilla Valley Economic Development Alliance (MVEDA). New Mexico and Chihuahua are combining efforts to plan and build the infrastructure to support a binational town on 70,000 acres on both sides of the border. Groundbreaking was in May of 2014. The first housing construction is in San Jeronimo--500 homes for Foxconn workers.

While the Santa Teresa Port of Entry (POE) still handles a fraction of the traffic and goods handled by the El Paso Ports of Entry, Santa Teresa traffic has been growing steadily for the past ten years. Annually, $26 billion in goods pass through the Santa Teresa POE, which now accounts for 6.5% of U.S. – Mexico trade. Uncongested compared to the El Paso ports of entry, the Santa Teresa POE has infrastructure capacity that was recently expanded by a $10 million project, funded by the 2009 American Recovery and Reinvestment Act. The project increased vehicle lanes from two to four, increased commercial inspection lanes from two to three, and expanded vehicle queuing area. A new non-commercial border crossing planned between Sunland Park and Anapra, NM would further enhance the Santa Teresa POE's capacity for commercial traffic. The Santa Teresa POE is within the Foreign Trade Zone (FTZ) - 12 Mile Overweight Cargo Radius, which allows overweight trucks from Mexico to offload cargo within the FTZ for distribution to areas outside the FTZ. This saves money for companies because within the zone they need not break down overweight truckloads to meet the load limits of U.S. roads. The overweight cargo radius allows 90,000-pound maximum vehicle weight in New Mexico, up from the 80,000-pound weight limitation in place outside the New Mexico overweight cargo radius.

However, compared to El Paso POEs, the Santa Teresa POE opens late and closes early. Recently, Francisco Uranga met with New Mexico legislators to discuss the border crossing constraints for Foxconn and the other estimated 90 manufacturing sites that ship through the Santa Teresa POE. In the summer of 2015, computer maker Dell used a program that lets a private entity or non-federal government pay for port infrastructure and staffing to expand the hours for southbound cargo checks. New Mexico recently applied to do the same for northbound traffic.

A project is underway on the Pete Domenici Memorial Highway (NM 136), which provides access from Interstate 10 to the POE, as well as to the Jetport and the Union Pacific intermodal ramp. The highway improvement project extends from the Santa Teresa POE to the Texas/New Mexico state line. The intention is to optimize the alignment and make other improvements to this deteriorating section of highway, in light of the increase in heavy truck traffic that is occurring.

A rail study is evaluating a new border crossing in Santa Teresa. This crossing would allow for increased capacity and economic development opportunities. It would also improve cross-border capacity in the Ciudad Juarez-El Paso area and relieve rail traffic congestion in Ciudad Juarez. The crossing would connect with the BNSF El Paso subdivision near Vado, and new rail lines would be constructed in Mexico to connect the border crossing with the Mexican rail network. There has been significant international coordination to develop this project.

Economic analyses published in early 2016 by the Dallas Federal Reserve noted slowed growth in the 11th District[8] due largely to the poorly performing oil/gas industry. The Dallas Fed also noted the Mexican economy slowed in the fourth quarter of 2015, with declining industrial production (including oil and gas) and exports. However, the economic picture in the Borderplex is much brighter than in the 11th District as a whole:

- El Paso payroll employment grew 2.5% in 2015, compared with 1.4% in Texas. This is the highest rate since 2007. Job gains were broad-based, with the strongest increases in financial activities and business services.

[8] The 11th District of the Federal Reserve includes all of Texas, northern Louisiana, and southern New Mexico.

- Trade flows increased as maquiladora activity in Ciudad Juarez remained robust.
- Juarez manufacturing employment rose 13.6% in November (the most recent data available) compared to the prior year, bringing total maquiladora employment to over 253,000.
- Strong U.S. auto sales since 2011 has been good news for the Borderplex economy because about half the maquilas are auto-related.
- Santa Teresa and its growing international trade activity continued to be highlights of the southern New Mexico economy. The Santa Teresa Port of Entry truck crossings averaged 7,410 per month in 2014, compared with 2,432 in 2004. Total trade (exports plus imports) was $24.8 billion in December 2015, a 5.0% increase from the previous year. A slight decline in imports (0.2%) was offset by an 11.9% increase in exports.

II. BASED AIRCRAFT FORECAST

Over the last ten years, the Jetport has gained 51 based aircraft, as shown in **Table 2C**. The fleet mix has shifted slightly, in a way similar to the national fleet of active aircraft. The share of single-engine piston aircraft has declined and the share of jet aircraft has risen, as **Table 2D** shows.

Table 2C – Historical Based Aircraft

2005	102
2006	110
2007	110
2008	95
2009	95
2010	102
2011	102
2012	102
2013	146
2014	148
2015	153

Source: FAA Terminal Area Forecast, January 2016, except the source for 2005 is Doña Ana County Airport at Santa Teresa Airport Master Plan, March 2008; the source for 2013 is the 2014 New Mexico Airport System Plan; and the source for 2015 is recent inventory documented in the Airport Master Record.

Table 2D – Based Aircraft Fleet Mix Change				
	Single Engine	**Multiengine**	**Jet**	**Helicopter**
2005	74	15	8	5
	73%	15%	8%	5%
2015	107	22	16	8
	70%	14%	10%	5%

Source: for 2005, Doña Ana County Airport at Santa Teresa Airport Master Plan, March 2008; for 2015, recent inventory documented in Airport Master Record. Note: Based aircraft has increased since the 2015 inventory was completed. The airport manager's latest inventory, validated in April 2017, reveals that there are 166 aircraft, including 113 single engines, 24 multi-engines, 19 jets, and 10 helicopters.

Previous based aircraft forecasts were examined to consider adopting one for use in this study. The previous forecasts are discussed below, beginning with the oldest (from the 2008 Airport Master Plan) and progressing to the most recent (January 2016 Terminal Area Forecast).

The last master plan prepared for the Jetport used 2005 as its base year for forecasting and was not published until March 2008. While its projection of 149 based aircraft in 2015 was slightly lower than the actual number, the forecast's 3.9% annual growth rate is too robust to adopt for the future. The forecast was prepared before the Great Recession and used a 3.0% annual growth rate for the three public use airports that existed in the region at the time, along with adopting El Paso International Airport's forecast for 0% based aircraft growth. One of the three airports, privately owned Horizon, has since closed, probably resulting in some aircraft relocations to the Jetport. This bump in based aircraft likely accounts for high recent growth that will not continue in the future.

The 2014 NMASP used 2013 as its base year and developed two forecast scenarios for the system airports. In its Base Case scenario, the Jetport's based aircraft would decline from 146 in 2013 to a low of 128 in 2020 before beginning a recovery and reaching 143 in 2025. From 2013 to 2025, the average annual growth rate would be -0.2%. In the High Range forecast of the NMASP, the number of based aircraft would decline to 141 in 2020 and then grow to 160 in 2025. From 2013 to 2025, the average annual growth rate would be 0.8%. Both of these scenarios seem too pessimistic for the Jetport, and have already been exceeded in 2015.

On the other hand, the FAA's *Terminal Area Forecast*, published in January of 2016, seems too optimistic, especially compared to the FAA's nationwide view of GA. The TAF projects steady growth in based aircraft at 2.9% per year, reaching 201 in 2025.[9] It is probable that the TAF did not account for "one time" growth due to Horizon Airport's closure and overestimated the future based on that unusual circumstance.

Three new forecast models were developed to determine the preferred forecast for the Jetport.

The National Fleet Growth Rate Model applied growth rates by aircraft type[10] from the *FAA Aerospace Forecast Fiscal Years 2015-2035*. These annual growth rates, shown in Exhibit 2C, varied from a high of 4.3% for sport aircraft to a low of -0.6% single-engine piston aircraft; annual growth rates for jets and for rotorcraft were over 2.0%. Applying the various growth rates to the fleet mix at the Jetport resulted in 0.9% average annual growth in the total number of based aircraft. The model projected based aircraft would reach 168 in 2025. While this model provided a good look into how the based aircraft fleet mix might change, it seemed to be too low. It did not account for the fact that population in the service area is projected to grow at twice the rate of the U.S.

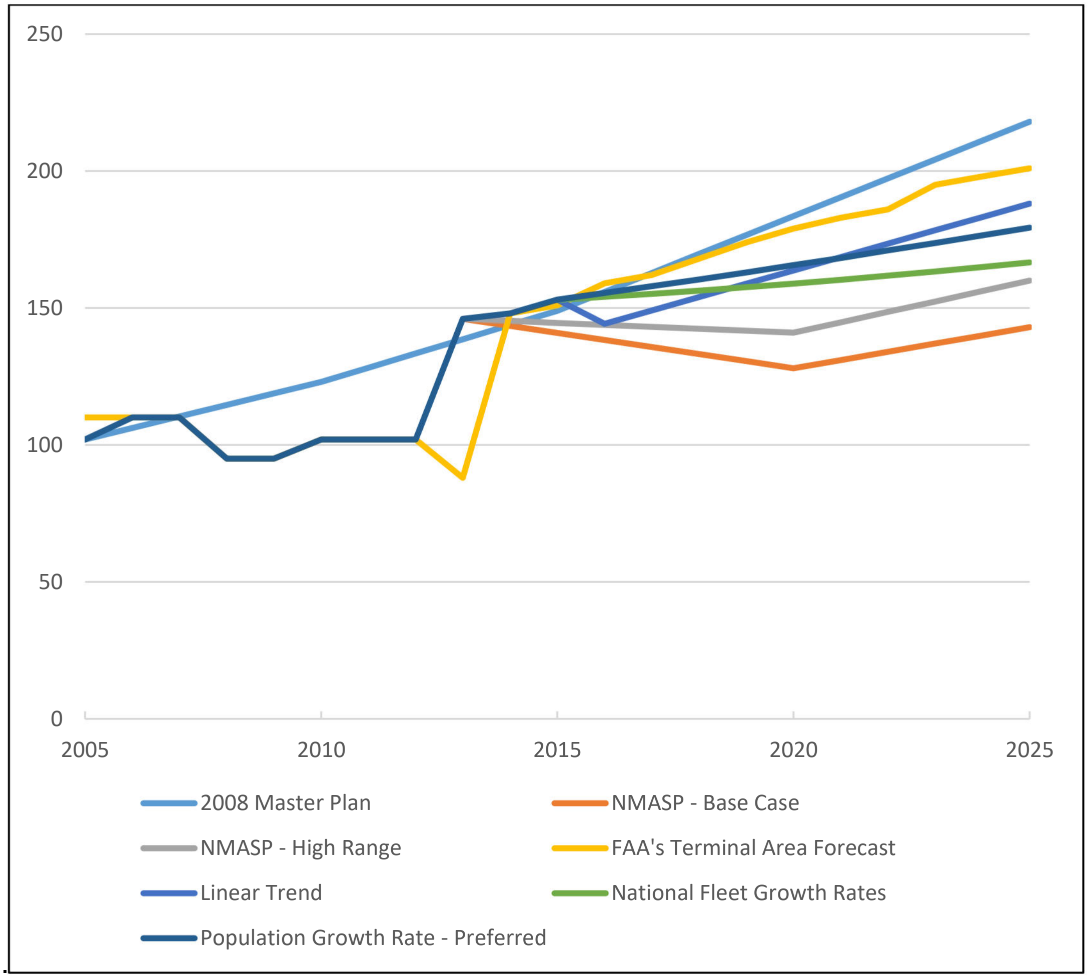
The Linear Trend Model assumed that the trend in historical based aircraft numbers would be carried forward into the future. The Linear Trend Model used statistical analysis of the ups and downs of based aircraft in the last ten years to project an increase to 188 aircraft in 2025, reflecting 2.1% average annual growth in the next ten years. Because the years analyzed included the bump in aircraft probably attributed to the relocation of aircraft from Horizon Airport, this model was thought to overestimate the future.

The Population Growth Rate Model produced a forecast that falls near the middle of the previous forecasts and models. It employed a 1.6% annual growth rate that matches the growth projected for populations in El Paso and Doña Ana County (Table 2B). This model projected based aircraft would reach 179 by 2025, an increase of 26 airplanes from the present number. The Population Growth Rate Model is the preferred forecast for based aircraft. **Exhibit 2L** compares the preferred forecast with the other forecasting models and prior forecasts for the Jetport's based aircraft.

[9] An update to the *Terminal Area Forecast* was published in January of 2017. In it, the forecast for based aircraft at the Jetport in 2025 is 206.

[10] From a review of aircraft models based at the Jetport, it was estimated that 20% of single-engine aircraft are light sport and 5% are turboprop, and that 25% of multiengine aircraft are turboprops. This additional breakdown of aircraft types and use of their specific growth rates has a significant impact on the overall rate of based aircraft growth in the National Fleet Growth Model.

EXHIBIT 2L – COMPARISON OF BASED AIRCRAFT FORECASTS



While 153 aircraft were officially based at the Jetport when the forecasts were prepared in early 2016, the number accommodated at the Jetport was 178. The FAA maintains an inventory of based aircraft that does not account for an individual aircraft having a hangar or parking place at more than one airport. Seasonal usage, an aircraft owner with multiple homes, and business reasons for keeping an airplane in different places at different times account for the Airport having 16% more aircraft than the FAA's inventory of based aircraft. In planning future hangar and aircraft parking demand, the 16% overage must be considered.

Forecasting the future mix of aircraft types is part of the based aircraft forecast (**Table 2E**). The fleet mix was projected in the National Fleet Growth Rate Model, using FAA projections of growth by aircraft type.

Table 2E – Based Aircraft Fleet Mix Forecast								
Year	Single Engine			Multiengine		Jet	Heli-copter	Total
	Light Sport	Pis-ton	Turbo-prop	Piston	Turbo-prop			
2015	21	81	5	16	6	16	8	153
	14%	53%	3%	10.5%	4%	10.5%	5%	100%
2020	26	81	5	17	7	20	10	166
	16%	49%	3%	10%	4%	12%	6%	100%
2025	34	82	6	16	7	23	11	179
	19%	46%	3%	9%	4%	13%	6%	100%

Note: Aircraft based at the Jetport has increased since the 2015 inventory was completed. According to the airport manager's latest based aircraft inventory validated in April 2017, there are officially 166 based aircraft, including 113 single engines, 24 multi-engines, 19 jets, and 10 helicopters. This does not include the seasonal aircraft at the Jetport that are officially based elsewhere.

III. AIRCRAFT OPERATIONS FORECAST

The ten-year history of aircraft operations appears in **Table 2F**. Aircraft operations at an airport without an ATCT are typically estimated by airport management every one to three years. For this master plan update, interviews with airport management and a representative of the FBO and analysis of the pilot survey helped fine-tune the estimate. Compared to the records in the TAF, GA local (training) operations were decreased slightly, GA itinerant operations were increased slightly, and the air taxi and military operations were increased substantially.

Operations increased from 2005 levels for two years before plummeting in 2008 and 2009, reflecting the recession and the soaring cost of fuel. Recovery began in 2010, but pre-recession levels have not yet been reached. Operations declined 1.0% per year, on average, from 2005 to 2015. Air taxi operations were particularly hard hit. The ending of an ad hoc air cargo business probably accounts for the steep drop in air taxi operations after 2007.

Table 2F-Historical Aircraft Operations					
Year	Air Taxi	GA Itinerant	GA Local	Military	Total Ops
2005	3,197	7,893	34,773	100	45,963
2006	3,249	8,161	35,343	100	46,853
2007	3,303	8,438	35,922	100	47,763
2008	200	10,000	22,000	200	32,400
2009	200	10,000	22,000	200	32,400
2010	200	12,000	22,200	200	34,600
2011	200	12,000	22,200	200	34,600
2012	200	12,000	22,200	200	34,600
2013	200	13,000	27,100	200	40,500
2014	200	13,000	27,100	200	40,500
2015	540	15,760	24,000	1,200	41,500

Source: FAA's Terminal Area Forecast, January 2016, except 2015 numbers were estimated from interviews and pilot surveys.

To obtain a better forecast, the individual components of aircraft operations were forecast separately. The next sections describe the component forecasts and present forecasts for operations fleet mix, peak operations demand, and instrument operations.

A. GA AIRCRAFT OPERATIONS FORECAST

As with based aircraft, prior GA operations forecasts were analyzed, and forecast models based on 2015 activity were developed.

The 2008 Airport Master Plan used the 2005 level of GA operations as a base and then projected 6% annual growth, which was consistent with the projected based aircraft growth and the FAA's national forecast for GA hours flown at that time. In addition, no growth in GA operations was assumed for El Paso International Airport, consistent with its master plan. This forecast projected GA operations would reach over 76,000 by 2015, which has not occurred. The 2008 Airport Master Plan forecast for GA operations was rejected because it did not account for the devastating effect of the Great Recession and the very slow post-recession recovery.

The 2014 NMASP developed two scenarios for GA operations, as it did for based aircraft. Instead of the 40,500 itinerant and local GA operations the TAF showed for 2013, the NMASP estimated 34,970 GA operations in 2013. The Base Case scenario projected 2.3% annual growth, reaching 45,946 in 2025. The High Range scenario projected 3.1% growth, reaching 51,400 operations in 2025. The NMASP Base Case scenario is very similar to the latest TAF, which projects 2.2% annual growth, reaching 51,179 in 2025.[11] With the same TAF projecting 2.6% growth in based aircraft, the operations projection seems inconsistent and too low. Nationwide, the FAA projects a higher growth rate for hours flown than for based aircraft.

The Linear Trend Model projects 1.8% annual decrease in GA operations, resulting in a decline to 33,236 operations in 2025. This would be extremely pessimistic and result in a ratio of operations per based aircraft (OPBA) of only 186.

The FAA[12] has provided the following guidelines for OPBA ratios:

- 250 OPBA is typical at a rural GA airport with little itinerant traffic
- 350 OPBA is typical at a busier GA airport with more itinerant traffic
- 450 OPBA is typical at a busy reliever airport with a large amount of itinerant traffic

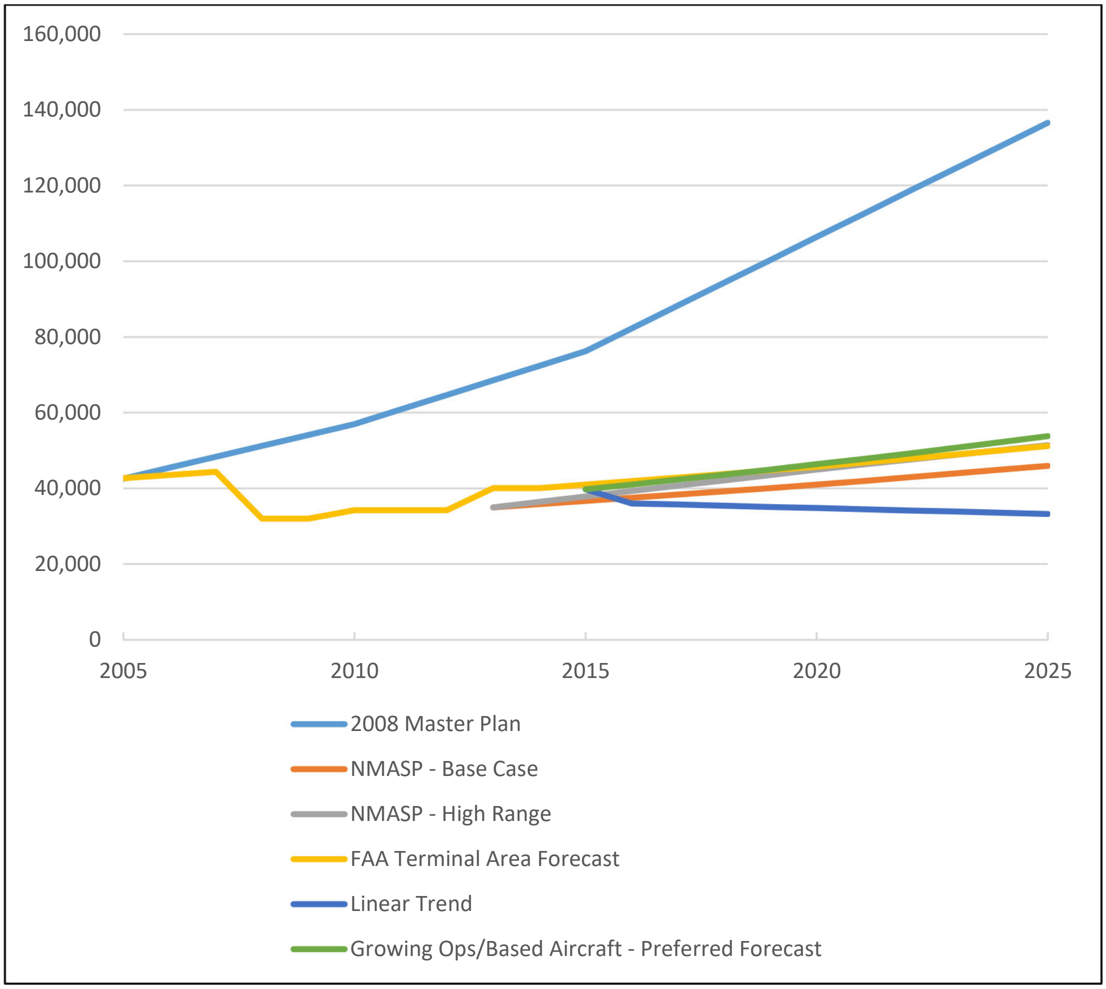
In 2005, the OPBA was 418 (42,666 divided by 102). In 2010, with the same number of based aircraft as in 2005, the OPBA fell to 335. As of 2015, the OPBA at the Airport is 260. Economic recovery and low fuel prices indicate that the ratios of both itinerant and local OPBA are poised to increase. Consequently, the preferred forecast for GA operations is the Growing Ops/Based Aircraft model. With this model, the OPBA was gradually increased to 300 in 2025 and multiplied by the forecast number of based aircraft. The result is an average annual increase of 3.1% so that by 2025, the projected number of annual GA operations is 53,796. This is the same growth rate as the NMASP High Range forecast, but results in a higher number of operations in 2025 because higher than projected growth has occurred since 2013, the base year for the NMASP forecast.

Exhibit 2M compares the various forecasts and forecast models for GA operations.

[11] In the FAA's January 2017 update of the *Terminal Area Forecast*, the forecast for GA operations at the Jetport in 2025 is 50,039.

[12] FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*.

EXHIBIT 2M – COMPARISON OF GA OPERATIONS FORECASTS

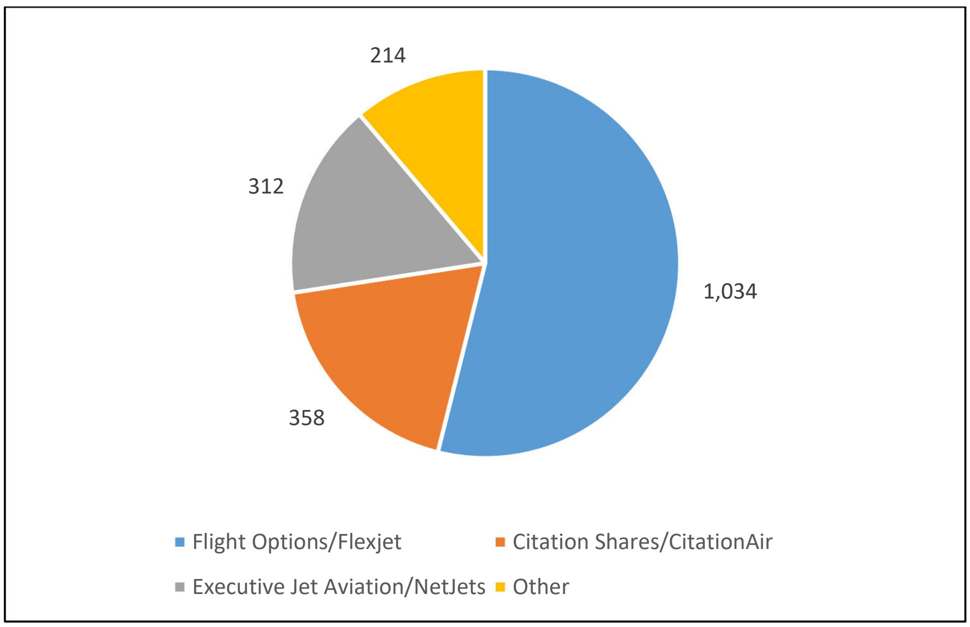


To divide the projected GA operations between itinerant and local operations, it was assumed that itinerant operations would have a growing share of the total. Usually, the busier an airport, the higher is the proportion of itinerant operations and the smaller is the proportion of local (training) operations. For example, at the busy El Paso International Airport, 71% of the GA operations are itinerant and 29% are local. In 2015, 40% of the Jetport's GA operations were itinerant and 60% were local. Over the next ten years, the proportion of itinerant GA operations number is projected to rise steadily to 45%. The result is 4.4% average annual growth in itinerant GA operations (from 15,760 in 2015, to 24,208 in 2025) and 2.1% average annual growth in local GA operations (from 24,000 in 2015, to 29,588 in 2025.)

B. AIR TAXI OPERATIONS FORECAST

Air taxi operations are commercial operations in smaller aircraft carrying passengers or cargo for hire or compensation. The maximum size of an air taxi aircraft in passenger configuration is 60 passenger seats, and in cargo configuration, it is 18,000 pounds-payload capacity. Air taxi operations include scheduled commuter service (not applicable to the Jetport) and Part 135 (unscheduled) passenger and air cargo charters. Francis Aviation offers air taxi service at the Jetport, and the Jetport is the destination of air taxi trips from other locations. Fractional jet companies also fly passengers to and from the Jetport and their flights are counted as air taxi operations. Of the over 20,000 IFR operations recorded for the last ten years, 9% were by air taxi aircraft. **Exhibit 2N** shows the distribution of the air taxi operations by company. Flight Options/Flexjet contributed the most air taxi operations, followed by Citation Shares/Citation Air and Executive Aviation/NetJets. The “Other” category includes 130 operations by “Airline Name Unknown.” In the “Other” category, the next most frequent operator was Angel Flight. Three aircraft owned by Francis Aviation (FBO) show up in the IFR operations data, but they are not identified as air taxi activity in the data. Consequently, they are excluded from Exhibit 2N.

EXHIBIT 2N – AIR TAXI OPERATORS USING DOÑA ANA COUNTY INTERNATIONAL, 2006-2015



Source: FAA Records of IFR Operations, compiled by GCR, Inc.

The 2014 NMASP only forecast air taxi operations for airports with scheduled commuter service, which does not include the Jetport. The January 2016 TAF projected air taxi operations would grow 1.8% annually from 2015 to 2025. Regional economic conditions, along with ongoing and expected development in the area, favor more substantial growth in air taxi passenger trips to and from the Airport.

The preferred forecast for air taxi operations is based on 4.4% annual growth, the same rate forecast for itinerant operations. This growth rate increases air taxi operations from 540 in 2015 to 740 in 2025. Additional air taxi operations due to all-cargo flights may be added if any of the potential activity discussed in the air cargo study (see appendices) begins. As of May 2017, a small air charter/cargo business (Majestic Aviation, LLC) is planning to begin service and is working with the County and area industrial park businesses to assess needs.

C. MILITARY OPERATIONS FORECAST

Military aircraft operations are estimated to total 1,200 a year. Many of these are training maneuvers from Fort Bliss and other area military establishments. The military does not typically provide the FAA with information about their future activity at civilian airports. Consequently, the FAA projects the same level of military aircraft operations that occur in the base year of a forecast will continue through the forecast period. Both the NMASP and this master plan update also continue the number of base year military operations through the forecast period. All military operations are identified as itinerant.

D. SUMMARY OF AIRCRAFT OPERATIONS FORECAST

Table 2G summarizes the operations forecast for air taxi, itinerant GA, local GA, and military operations. Total aircraft operations are projected to grow from 41,500 in 2015 to 55,827 in 2025, which represents 3.0% average annual growth.

Table 2G – Aircraft Operations Forecast					
Year	**Air Taxi**	**GA Itinerant**	**GA Local**	**Military**	**Total**
2015	540	15,760	24,000	1,200	41,500
2016	564	16,613	24,407	1,200	42,784
2017	589	17,347	24,963	1,200	44,099
2018	614	18,107	25,524	1,200	45,445
2019	641	18,893	26,090	1,200	46,825
2020	670	19,706	26,661	1,200	48,238
2021	699	20,548	27,237	1,200	49,684
2022	730	21,418	27,818	1,200	51,166
2023	762	22,317	28,404	1,200	52,683
2024	796	23,247	28,993	1,200	54,236
2025	831	24,208	29,588	1,200	55,827
Average Annual Growth Rates					
2015-2025	4.4%	4.4%	2.1%	0.0%	3.0%

IV. OPERATIONS FLEET MIX

The based aircraft fleet mix (Table 2E) is not identical to the fleet mix of aircraft operations for several reasons. For one thing, the operational fleet mix includes aircraft from other airports as well as those based at the Jetport. In addition, higher performance airplanes and helicopters are more often flown for business reasons and used more often than light sport and other single engine piston aircraft, which are more often flown for recreation or infrequent personal or business trips. The majority of local operations are in single engine piston aircraft by students learning to fly.

The operations fleet mix forecast (**Table 2H**) considers the changes projected for based aircraft, the growth of air taxi operations, and the growing share of itinerant GA operations compared to local operations. Since jet aircraft are always flown by IFR, IFR records provide an accurate record of the number of jet operations that occurred at the Jetport in the last ten years. Numbers of jet operations varied from a high of 1,422 in 2006 to a low of 604 in 2013, recovering to 1,110 in 2015. Over the past ten years, jet operations accounted for 3% of total estimated operations. In the future, as business jet traffic recovers, it is anticipated that the jets based at the Jetport will be flown more often and more transient jets will use the Jetport. The share of helicopter operations will also increase, as more helicopters are based at the Jetport and helicopter hours flown increase more than other aircraft types. Military helicopters also use the Jetport and that use is projected to continue. Single engine aircraft will continue to dominate local operations, but this type of aircraft will have a declining share of the total operations in the future.

Table 2H – Operations Fleet Mix Forecast				
Year	Single Engine	Multiengine	Jet	Helicopter
2015	79%	12%	3%	6%
2020	76%	12%	5%	7%
2025	73%	12%	7%	8%

V. PEAK OPERATIONS FORECAST

Aircraft operations levels vary over the course of a year, by month and by day. Identifying the peak demand is important to determining facility needs. "Peak Month" is the busiest month of the year. To calculate the "Design Day," divide the peak month by 31. The "Design Hour" is the busiest hour of the design day.

Determining peak activity is difficult at an airport lacking an ATCT. At the Jetport, the only source of activity recorded by month is IFR records. The multi-year IFR records show even distribution of activity by month and do not show that the same month is always the busiest every year. From the latest IFR data and from information in the 2008 Airport Master Plan, it is assumed that the peak month contains 11% of the annual activity. According to the 2008 Airport Master Plan, the design hour contains 15% of the design day activity, and this appears to still be a valid estimate.

Peak demand forecasts for the milestone years are shown in **Table 2I.**

Table 2I – Peak Demand Forecasts			
	2015	2020	2025
Annual Operations	41,500	48,238	55,827
Peak Month Operations	4,565	5,306	6,141
Design Day Operations	147	171	198
Design Hour Operations	22	26	30

VI. INSTRUMENT OPERATIONS

While Santa Teresa has clear weather allowing VFR flying nearly every day,[13] many pilots using the Jetport are flying an instrument flight plan. Air taxi and jet aircraft are typically flown IFR at all times. Records of IFR departures for the last ten years, compared with total aircraft operations for the same years, indicate that instrument operations comprise 5% of total operations. This is the same percentage noted in the 2008 Airport Master Plan. As the operations fleet mix shifts over the next ten years, this percentage is anticipated to more than double with the increase in jet traffic and other itinerant operations on IFR flight plans:

	% of Total Operations	Instrument Operations.
2015	5%	2,075
2020	8%	3,859
2025	11%	6,141

VII. DESIGN AIRCRAFT AND AIRPORT REFERENCE CODE

Much of an airport's design should be based on the needs of the critical, or design, aircraft, which is the most demanding aircraft that "regularly" uses the airport. The FAA defines "regular" or "substantial" use as at least 500 annual itinerant operations. The Airport Reference Code (ARC) is determined by the design aircraft and is the key to the FAA's design standards for runways, taxiways, and minimum clearances around aircraft operating areas. Runway Design Codes and Taxiway Design Groups also determine FAA design standards and are discussed in more detail in the next chapter. The reality is that different runways and taxiways may have different design aircraft. For example, it is not sensible to design the taxilanes serving small T-hangars so that they can be used by the largest aircraft that use the runway.

The ARC is made up of two components – a letter representing the Aircraft Approach Category and a Roman numeral representing the Airplane Design Group. **Table 2J** shows the definitions of these components and representative aircraft. The Aircraft Approach Category (AAC) is determined by the approach speed, or 1.3 times the stall speed of the aircraft in its landing configuration at its maximum landing weight. The Airplane Design Group (ADG) is usually defined by the aircraft wingspan, although it may be defined by tail height, if more demanding.

The design aircraft may be a group of aircraft with similar characteristics rather than a specific model. In fact, the ARC may be composed of the most demanding AAC from one

[13] Visual weather occurs 99.5% of the time according to the 2008 Airport Master Plan.

group of similar aircraft and the most demanding ADG from another group of similar aircraft, as long as each component meets the regular use threshold.

Table 2J – Airport Reference Code Components

Aircraft Approach Category	Approach Speed	Representative Aircraft
A	Less than 91 knots	Cessna 150, 172, Beech Bonanza
B	91 to 120 knots	King Air, Piper Navajo, Gulfstream I
C	121 to 140 knots	Learjet, Citation X, Boeing 737
D	141 to 165 knots	Boeing 747, Gulfstream V
Airplane Design Group	**Wingspan**	**Representative Aircraft**
I	Less than 49 feet	Cessna 150, 172, 206
II	40 to 78 feet	King Air, Dassault Falcon 900
III	79 to 117 feet	Boeing 737, DC-3, Gulfstream V
Airplane Design Group may be determined by tail height, if more demanding than wingspan:		
Airplane Design Group	**Tail Height**	
I	Less than 20 feet	
II	20 to 29 feet	
III	30 to 44 feet	

Source: FAA AC 150/5300-13A, Airport Design.
This ARC information represents the airport's highest runway design code, which is defined by the above as well as visibility minimums. Aircraft Approach Category E (166 knots or more) and Airplane Design Groups IV, V, and VI (118 feet or more) are not shown.

Ten years of IFR records and the Jetport's list of hangared aircraft were analyzed to determine the AAC component of the ARC. The IFR records show that most jet operations are by AAC B aircraft, primarily different models of the Cessna Citation. The average annual jet operations totaled 1,112, of which 250 (22%) were in approach category C aircraft. The 2015 records show growth in jets with faster approach speeds; of 1,110 annual jet operations, 368 (33%) were in AAC C aircraft. Specifically, the 368 operations in 2015 were: 74 by Raytheon/Hawker Beechcraft 400A, 22 by Cessna Citation X, 260 by Gulfstream 280, 8 by Hawker 800XP, and 4 by Learjet 45. Four of the jets based at the Jetport are in the C approach category—one Hawker 800XP, two Gulfstream 280, and one Learjet 24D. The remaining jets based at the Jetport are in AAC B. Some of the turboprop aircraft based at the Jetport and recorded in the IFR data are also AAC B.

The ADG component of the ARC is II. While one Jetport tenant has two DC-3 aircraft with wingspans that fall in ADG III, that tenant's cargo business has not operated in recent years. IFR records do not show regular use by business jets as large as ADG III; for example, the data show only two operations in Gulfstream V jets during the last ten years. During the average year, 545 operations (48% of jet operations) occurred in ADG II aircraft. ADG II jet aircraft operations in 2015 totaled 588 (53%). The 500 operations threshold for regular use is exceeded without including turboprop and piston aircraft operations, some of which are in ADG II.

Based on the forecasts of operations growth and operations fleet mix, the number of jet operations in AAC C should exceed 500 per year in the short-term (before 2020). In fact, the estimated number of jet operations in AAC C did exceed 500 in 2016, according to information about new based aircraft obtained from airport user surveys and discussions at Planning Advisory Committee meetings held in 2016. The design aircraft is not expected to be larger or faster than the Cessna X before 2025, unless it is due to large jet cargo activity (see the air cargo study in the appendices). Based on GA and air taxi activity, the base year (2015), current (2016), and forecast ARC are as follows:

- 2015: B-II
- 2016: C-II
- 2020: C-II
- 2025: C-II

VIII. CONTINGENCY SCENARIO – HIGH GROWTH

The Jetport's based aircraft and operations forecasts, presented in this chapter, align well with the FAA's nationwide projections for aviation growth. The forecasts take into consideration trends in aviation and socioeconomics, and published projections for the same. However, there remains uncertainty about the potential impact from area economic development efforts and anticipated growth on the horizon—all of which could spur growth in aviation.

For this reason, a contingency scenario is considered. The contingency scenario assumes high growth—exceeding the official forecasts of based aircraft and operations in this study by as much as 10 to 15 percent. The purpose of introducing this into the study is to better prepare the County in responding to higher aviation demand, and potentially a shift in the fleet mix that would include an increase in jets above the official forecast. This scenario is used for planning purposes in determining potential facility needs (Chapter Three) and to help identify future development alternatives (Chapter Four) that address location and size of such development.

Chapter Three
REQUIREMENTS

In this chapter, Doña Ana County International Jetport (Jetport) facility requirements are identified for the next five to ten years, and beyond. These facility requirements are identified to meet aviation demand, comply with current FAA design standards, address state airport system plan recommendations and satisfy airport user requests and industry recommendations. While specific airport improvements are proposed for the 10-year planning period, there are more distant future needs as well as contingency scenario needs identified for prudent planning purposes.

As noted in Chapter One, Inventory, airport facilities are categorized as airside or landside. Airside facilities include runways, taxiways, navigational aids, marking and lighting, while landside facilities include terminal building, hangars, aircraft parking apron, auto access, automobile parking, and various support facilities.

This chapter begins with a discussion of the planning criteria that help identify the adequacy of the existing airport facilities and the timing of necessary improvements. Following this chapter's findings, alternative concepts for providing the proposed facility improvements are evaluated in the next chapter.

I. PLANNING CRITERIA AND CONSIDERATIONS

Airport development should be functional, economical, compliant with FAA and industry standards, and responsive to user needs. Good planning requires balancing all these factors. Criteria important to the planning process for the Jetport are derived from the following sources:

- **Federal Aviation Administration –** FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans,* provides guidance for the preparation of this master plan. FAA design guidelines found in AC 150/5300-13A, *Airport Design*, provide criteria for the layout of runway, taxiway, and apron areas.
- **New Mexico Airport System Plan Update (2014) –** The NMASPU distributes New Mexico's airports by classification and recommends how to meet the state's long term commercial and general aviation needs. This Plan is prepared by New Mexico Department of Transportation (NMDOT) Aviation Division.
- **Transportation Security Administration (TSA)** – The TSA does not regulate general aviation airports, but does provide guidelines that help an airport sponsor determine what steps should be taken to enhance security based on the airport's size and risk level. The TSA does regulate on-demand air cargo and passenger charter flights in aircraft weighing more than 12,500 pounds.
- **Business Aviation Industry –** The National Business Aviation Association (NBAA) represents the business segment of the general aviation industry and provides recommendations for airport facilities and services to accommodate business aviation needs.
- **Air Cargo Industry –** The unique nature of the air cargo market requires some specialized analysis before identifying facility needs. Publications reporting on air cargo trends are important to consider since shifts in the aircraft fleet, air cargo users and operators, types of air cargo, staging and truck transfer needs, and other factors influence the air cargo facility planning process.
- **Doña Ana County and Airport Users –** Often referred to as the stakeholders, this group includes local government officials, the Planning Advisory Committee (PAC) members, other meeting participants and survey respondents providing input specific

to the Jetport including the long-term vision and strategy for development. The stakeholders are especially important because they provide the local perspective on Jetport facility needs. Further, this group provided input supporting a contingency scenario, which assumes the Jetport's activity will exceed the aviation demand forecasts if economic development efforts and area business needs spur growth beyond that projected in the previous chapter.

A. AIRPORT ROLE

To identify the planning criteria relevant to Doña Ana County International Jetport, it is important to consider the Jetport's role within a network of airports. This section recaps and expands on the Jetport's role discussed in the Introduction regarding the national and state airport systems.

B. NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS (NPIAS) ROLE

The NPIAS 2015-2019 includes 3,331 existing airports and 14 proposed new airports for a total 3,345 airports open to public use. An airport's inclusion in this document means that it is considered important to the national air transportation system and therefore eligible to receive grants under the FAA's Airport Improvement Program (AIP). The two major categories of airports in the NPIAS are primary and nonprimary.

The FAA defines primary airports as public airports receiving scheduled air carrier service with 10,000 or more passenger enplanements per year. In contrast, nonprimary airports are mainly used by general aviation aircraft and include airports classified as general aviation, reliever, and nonprimary commercial service. The nonprimary commercial service airports include public airports receiving scheduled passenger service with annual enplanements between 2,500 and 9,999. The Jetport is classified as a GA airport, but efforts to reclassify it as a reliever (for El Paso International) continue. Reliever airports offer GA operators an alternative to using a nearby busy commercial service airport. The FAA states the following about reliever airports:

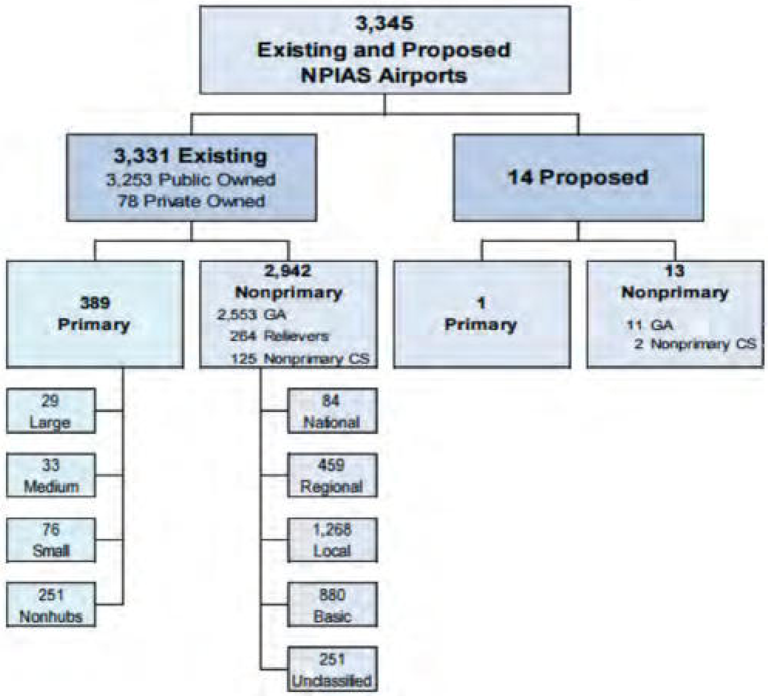
> *"To be eligible for reliever designation, these airports must be open to the public, have 100 or more based aircraft, or have 25,000 annual itinerant operations. The 264 reliever airports have an average of 177 based aircraft, which in total represents 23 percent of the Nation's general aviation fleet."*

The Jetport was classified as a reliever years ago when the designation played a more significant role in funding priority. The reliever status became less significant in subsequent airport funding legislation and since the FAA established a new airport classification system for GA airports in 2012. The new classification system, established in cooperation with the aviation community, was documented in the May 2012 report entitled "General Aviation Airports: A National Asset" and the March 2014 report entitled "ASSET 2: In-Depth Review of 497 Unclassified Airports."

As part of the new classification effort, the "FAA documented the important airport roles and aeronautical functions these facilities [GA Airports] provide to their communities and the national airport system. These functions include emergency preparedness and response, direct transportation of people and freight, commercial applications such as agricultural spraying, aerial surveying and oil exploration, and many others. Many of these functions cannot be supported efficiently or economically at primary airports."

Today, the nonprimary airports are grouped into five categories based on their role: national, regional, local, basic, and unclassified. NPIAS 2015-2019 classifies the Jetport as a general aviation airport with a regional role. A regional airport supports regional economies by connecting communities to statewide and interstate markets. Further, regional airports are described as having "high levels of activity with some jets and multiengine propeller aircraft averaging about 90 total based aircraft including 3 jets." The Jetport is one of 459 regional airports. **Exhibit 3A** summarizes the breakdown of NPIAS airports described above.

EXHIBIT 3A. SUMMARY OF NPIAS AIRPORTS BY CLASSIFICATION



Source: FAA NPIAS 2015-2019

C. NEW MEXICO AIRPORT SYSTEM PLAN UPDATE

As noted in Chapter Two, the 2014 NMASPU designated the Jetport as a Regional General Aviation Airport, which primarily serves general aviation activity with a focus on serving business activity including jet and multi-engine aircraft.

The NMASPU recommended minimum facilities and services for Regional GA Airports. **Table 3A** summarizes these state recommendations for facilities and services and compares them to the Jetport's existing facilities and services. As shown, the Jetport provides most of the facilities recommended, but inadequate wind coverage with a single runway configuration remains the most significant deficiency.

D. PART 139 CERTIFICATION

While the Jetport does not currently require Part 139 certification, airport users and PAC members inquired about the necessary steps to achieve such a certification, particularly Part 139, Class IV. Part 139 refers to the Federal airport certification regulation-- Title 14, Code of Federal Regulations, Part 139 (14 CFR Part 139). A Part 139, Class IV, certification would be for unscheduled large air carrier aircraft (30+ seats) into the Jetport such as chartered flights for sports teams or tour groups. There are several requirements for Part 139 certification which cover the following:

- paved and unpaved areas
- safety areas
- markings and signage
- lighting
- navigational aids
- wildlife
- fueling
- obstructions
- hazardous materials
- snow and ice
- public protection
- Aircraft Rescue and Fire Fighting (ARFF)
- construction
- wind indicators

Table 3A – NMASPU Minimum Recommendations for Regional GA Airports		
Airport Criteria	**Minimum Objectives for Limited Commercial Service Airport Role**	**Doña Ana County International Jetport (Existing)**
Airport Reference Code	**C-II or Greater**	**C-II**
Runway Length	**75% of large aircraft at 60% useful load (6,400 feet for 5T6)**	**9,550 feet**
Runway Width	**100 feet**	**100 feet**
Runways Strength	**SWG of 30,000 lbs.**	**20,000 lbs.**
Taxiway	**Partial Parallel**	**Full**
Instrument Approach	**Non-precision**	**Non-precision**
Visual Aids	**Rotating Beacon, Lighted Windcone/Segmented Circle, VGSI**	**Rotating Beacon, Lighted Windcone/Segmented Circle, PAPI**
Lighting	**MIRL**	**MIRL**
Weather Reporting	**Automated Weather Reporting (AWOS, ASOS)**	**AWOS III**
Wind Coverage	**Primary and crosswind Runway have 95% wind coverage**	**Primary runway has less than 95% wind coverage**
Services	**Phones; restrooms; full-service FBO; 24/7 AvGas and Jet A; courtesy car available. Full service maintenance**	**Phone; restrooms; FBO; self-serve 100LL fueling 24/7; full-serve Jet A fueling, courtesy transportation or local area rental car. Major A&P maintenance.**
Facilities	**Terminal w/ public restrooms & pilots Lounge; limited service restaurant and/or vending; hangar storage for 60% of based aircraft and 25% of transient; apron (tiedowns) for 40% of based fleet and 50% of transient; auto parking**	**FBO terminal; public restrooms; lounge; hangar storage and apron parking; auto parking**
Safety and Security	**Emergency Response Plan Perimeter Fencing**	**Emergency Response Plan Perimeter Fencing (majority of airport)**

Acronyms: A&P (Airframe & Powerplant), ASOS (Automated Surface Observing System), AWOS (Automated Weather Observation System), FBO (Fixed Base Operator), LL (Low Lead), MIRL (Medium Intensity Runway Lights), PAPI (Precision Approach Path Indicator), SWG (Single Wheel Gear), VGSI (Visual Glide Slope Indicator)

Source: NMASPU and Jetport Conditions

Complying with Part 139 requirements can increase operating costs as the sponsor's routine responsibilities increase with airfield inspections, additional record keeping, development and maintenance of plans/manuals, and training. ARFF capability can be the most demanding requirement, but its necessity depends on the activity. If the County wants an ARFF at the Jetport, but it is not required (i.e. no passenger service), the ARFF would be ineligible for FAA funding.

E. INDUSTRY CONSIDERATIONS

In the last master plan, industry recommendations for airport improvements to support corporate jet activity were reviewed. These recommendations were derived from the NBAA. While some improvements have been made since the last plan, such as the Runway 10-28 extension, other needs remain. Remaining airside needs include runway pavement strengthening and an improved instrument approach and lighting. Enhanced security and food/lodging amenities are examples of other needs identified. The airport user survey conducted as part of this study resulted in several airport improvement needs outlined by the GA community, including corporate jet operators. These improvements, summarized in the Introduction chapter, are threaded through this chapter in the relevant airside and landside discussions.

With the potential for air cargo aircraft to replace the corporate jet as the design aircraft for Runway 10-28 in the future, pavement strengthening requirements may also change in the future. Other facility and service improvements will be necessary to serve the air cargo activity. The air cargo study that is documented in the appendices included interviews with some area businesses, which helped identify possible needs. A few highlights of the air cargo study are mentioned in this chapter.

Air cargo demand is generated when there is a need for expeditious transportation of material and goods between two points. Further, in the business world, logistics managers must justify the use of air cargo as their preferred mode of transport since shipping by air is costlier than shipping via truck, rail, or maritime modes. Factors involved in deciding to transport via air include:

- Cost of transporting the material
- Level of service commitment to the customer or end user
- Value of the material
- Time-sensitivity or perishability of the material

Products best suited for air cargo shipping are those that benefit from increased speed of distribution or better stock availability. Those products tend to be high value, relatively light weight, and/or time critical.

F. DESIGN STANDARDS

Like other airports receiving federal funds for airport improvements, the Jetport is required to comply with FAA design standards. FAA Advisory Circular (AC) 150/5300-13A is the primary source of FAA design standards applied in planning for airport development.

This section briefly describes these design standards and mentions conditions unique to the Jetport that influence design recommendations. The design standards are primarily driven by safety concerns, but efficiency and utility are also important considerations. The latest FAA design standards supersede the standards that were in place during the last airport master planning effort for the Jetport. The current AC 150/5300-13A (dated September 2012), replaced and cancelled AC 150/5300-13, *Airport Design*, which was originally published in 1989, with changes through 2012. AC 150/5300-13A includes various clarifications and introduces new terms and concepts. This section includes these new concepts and discusses their application to the Jetport.

1. DESIGN AIRCRAFT AND RUNWAY DESIGN CODE

Airfield planning and design is primarily driven by aircraft use—existing and forecast. However, the FAA specifies that planning and design of facilities should be for the most demanding aircraft operating or forecast to operate at that facility on a “regular basis”. The FAA defines regular use as 500 or more itinerant operations annually. Such an aircraft is identified as the design aircraft. The design aircraft may be a specific aircraft type or a composite of aircraft characteristics. Characteristics of the design aircraft, such as approach speed, wingspan, tail height, main gear width, cockpit to main gear length, aircraft weight, and takeoff and landing distances influence the dimensions of airfield facilities and protected surfaces. In **Table 3B,** an overview is provided of the relationship between certain aircraft characteristics and the design components that they influence.

Table 3B – Aircraft Characteristics and Design Components	
Aircraft Characteristics	**Design Components**
Approach Speed	Runway safety area, object free area and protection zones; runway width, runway-to-taxiway separation, runway-to-fixed object
Landing and Takeoff Distance	Runway Length
Cockpit to Main Gear Length (CMG)	Taxiway fillet design, apron area, parking layout
Outer to Outer Main Gear Width (MGW)	Taxiway width, fillet design
Wingspan/Tail Height	Taxiway and apron object free area, parking configuration, hangar locations, taxiway-to-taxiway separation, runway to taxiway separation

Source: FAA AC 150/5300-13A

The Airport Reference Code (ARC), also presented in Chapter Two, Forecasts, represents the airport's highest Runway Design Code (RDC) for planning and design purposes. The Runway Design Code (RDC) is based on planned development and signifies the design standards to which the runway is to be built. The RDC consists of three components--the Aircraft Approach Category (AAC), the Airplane Design Group (ADG) and the visibility minimums. The AAC relates to the approach speed of the design aircraft and the ADG relates to either the aircraft wingspan or tail height, whichever is more restrictive. The third component relates to runway visibility minimums as expressed in Runway Visual Range (RVR) equipment measurements. RVR-derived values represent feet of forward visibility that have statute mile equivalents; for example, 2400 RVR = ½-mile. For visual approach runways, this component would be identified as "VIS."

RDC classifications are outlined in **Table 3C**, and are like the ARC classifications in Chapter Two (Table 2K). An understanding of the RDC is critical in understanding the airside requirements depicted in the development alternatives in the next chapter.

Table 3C – Runway Design Code Classifications		
Aircraft Approach Category (AAC)		
AAC	Approach Speed	
A	Less than 91 knots	
B	91 knots to 120 knots	
C	121 knots to 140 knots	
D	141 knots to 165 knots	
E	Approach speed 166 knots or more	
Airplane Design Group (ADG)		
Group #	Tail Height (ft)	Wingspan (ft)
I	< 20’	< 49’
II	20’ to < 30’	49’ to < 79’
III	30’ to < 45’	79’ to < 118’
IV	45’ to < 60’	118’ to < 171’
V	60’ to < 66’	171’ to < 214’
VI	66’ to < 80’	214’ to < 262’
Approach Visibility Minimums		
RVR (ft)	**Flight Visibility Category (statue mile)**	
4000	Lower than 1 mile but not lower than ¾ mile (APV ¾ but< 1 mile)	
2400	Lower than ¾ mile but not lower than ½ mile (CAT-I PA)	
1600	Lower than ½ mile but not lower than ¼ mile (CAT-II PA)	
1200	Lower than ¼ mile (CAT-III PA)	

Source: FAA AC 150/5300-13A

2. JETPORT ARC AND CONTINGENCY SCENARIO

The current ARC and RDC for the Jetport is C-II, and the aviation demand forecasts project this to remain C-II through the 10-year planning period. However, in anticipation of higher growth and the introduction of air cargo operations, the following contingency scenario was identified for the Jetport. This scenario supports an ultimate ARC of C-IV for B767 air cargo aircraft in the long-term (well beyond the 10-year planning period) with an interim ARC of C-III for B737 air cargo aircraft, which could be realized within or beyond the planning period.

As noted in Chapter Two, Forecasts, the County should consider a contingency scenario for higher growth than the projected aviation demand. This is important since the forecasts presented are closely aligned with conservative aviation trends and FAA projections. However, ongoing area economic development efforts and the growth resulting from these efforts could prompt stronger aviation growth, particularly in the corporate/business aviation and air cargo markets.

On the business aviation side, the contingency scenario assumes an acceleration in business jet traffic beyond the forecasts. This suggests the County be prepared to respond to the associated facility and service needs sooner than anticipated—important when identifying and evaluating various development alternatives in the next chapter. Business jets in ARC C-III use the Jetport infrequently now, but the contingency scenario suggests this traffic could increase dramatically, particularly if an active aircraft of ARC C-III were based at the Jetport.

With respect to air cargo, the contingency scenario assumes that the current potential for air cargo activity at the Jetport will be realized. This potential was derived from the air cargo study associated with this planning effort. The study identified 27 businesses that are Border Industrial Association (BIA) members with a high propensity for air cargo use based on their industries. Of those 27 businesses, 13 participated in the study and were interviewed about their air cargo-related needs. The study found that there is a strong market for air cargo at the Jetport, but facility improvements are needed. Further, seven of the participating businesses agreed to write letters of support for improving Jetport to handle air cargo operations. While the interviewed businesses reported their current transportation methods are adequate, three with significant air cargo activity acknowledged that using the Jetport could be more beneficial. These companies are Foxconn, Commscope, and JH Rose Logistics.

Foxconn assembles 90% of all HP/Dell PCs, laptops, and servers sold in the U.S., shipping 10 million units annually. The local plant employs 7,500 people, and is anticipated to grow. Foxconn flies raw materials to Los Angeles from various points in Asia and then trucks the materials to their local plant, which is near the Jetport—across the border in San Jerónimo. Flying these materials into the Jetport would significantly reduce transport time from the current 18 to 24 hours to a few hours or less

Commscope, a telecommunications equipment manufacturing company and one of the largest employers in the industrial park, flies 45 to 55 percent of their finished goods from El Paso International. Air cargo service at the Jetport could be more convenient for Commscope, pushing back the daily cutoff time for shipping by two hours.

JH Rose Logistics is a third-party logistics firm, which performs ad hoc air charters from Chihuahua, Mexico to Memphis, Tennessee. The company has studied the market and determined there is air cargo demand for the transport of auto parts between the U.S. and Mexico, specifically Hermosillo and Chihuahua, noting that using El Paso International could be costlier and more time consuming than using the Jetport.

Based on the Foxconn needs, the ideal air cargo aircraft would be the B737-400, but industry trends and air cargo growth support the ultimate need for B767 air cargo aircraft—anticipated beyond the planning period.

Identification of the B737 (ARC C-III) as the potential design aircraft is important for determining the applicable design standards for Runway 10-28—all to be considered during the identification and evaluation of development alternatives. The identification of the B767 (C-IV) as the later future design aircraft is critical to the long-term protection and development of the Jetport.

Area businesses, particularly JH Rose Logistics, provided additional insight on the air cargo demand that could be served in smaller aircraft at the Jetport, and are discussed in the air cargo study.

II. AIRSIDE REQUIREMENTS

A. NUMBER AND ORIENTATION OF RUNWAYS

The Jetport has a single runway airfield configuration. The number of runways on a field is typically driven by activity levels and/or wind coverage. Busy airports often provide parallel runways to accommodate their high activity levels while minimizing delay. An airfield demand/capacity analysis helps determine the need for increased runway capacity. Planning for capacity enhancements should be initiated when demand reaches 60% of capacity. For the Jetport, current and forecast demand is well below the airfield's annual service volume estimated at 230,000 operations. During the 10-year planning period, the forecast of nearly 56,000 operations annually brings the demand/capacity ratio to less than 25 percent. Assuming the contingency scenario brings accelerated growth in corporate GA and the introduction of air cargo operations, annual operations are anticipated to remain below 30 percent of capacity during the planning period. Therefore, the Jetport's activity is easily accommodated by its single runway, so no capacity improvements are needed. However, inadequate wind coverage on Runway 10-28 supports the need for a crosswind runway.

FAA design standards recommend a crosswind runway when the primary runway orientation provides less than 95 percent wind coverage. The need for a crosswind runway was documented in the previous airport master plan and is reviewed here starting with an explanation of the FAA's criteria based on the RDC of aircraft using the airfield. FAA has established crosswind limits of 10.5 knots for general aviation A-I and B-I aircraft, 13 knots for A-II and B-II general aviation aircraft and 16 knots for transport aircraft A-III, B-III and C-I through D-III. The remaining RDC aircraft (A-IV through D-VI) have a crosswind limit of 20 knots.

In the previous master plan, the closest wind data available was from the El Paso (ELP) and Las Cruces (LRU) airports. Only a few months of wind data were available from the Jetport's SuperAWOS; this limited data appeared to track more closely to El Paso than to Las Cruces, so El Paso International's wind history was used for crosswind analysis at the Jetport. The lack of wind history for the Jetport site remains an issue today. However, the Doña Ana County Flood Commission Afton weather station located 18 miles north-northwest of the Jetport has some limited wind data. Based on its proximity to the Jetport and similar topography, the wind data is likely closer to actual Jetport conditions than the El Paso International Airport data previously used. At the time the wind analysis was conducted for the study, the available wind data spanned a 23.5-month period from June 18, 2014, to May 31, 2016[1], which the County obtained from the Afton weather station. While the FAA recommends a minimum 10 years of wind data, a decade of historical data is not available from the Afton station.

The Afton wind data analysis shows that wind coverage on Runway 10-28 is lower than that determined in the previous master plan using the ELP data. Further, the new results indicate that 95% wind coverage cannot be achieved with the proposed crosswind Runway 1-19 alignment proposed in the 2008 Master Plan. The last master planning effort identified 3-21 or 4-22 as better alignments for crosswind coverage than 1-19, but determined 1-19 would meet the 95% threshold and avoid some significant site constraints. Using the more recent and relevant Afton station data, wind coverage was analyzed for various alignments, and is summarized in **Table 3D**.

[1] A full two years (24 months) of wind data was obtained after the wind analysis was completed. The additional two weeks of wind data revealed minor changes in runway wind coverage ranging from 0.08% to 0% change for various runway alignments and wind speeds.

During the airport user survey, pilots identified a crosswind runway as the #1 need at the Jetport. Just as the previous plan indicated, strong crosswinds at the Jetport can make it difficult for aircraft to safely land. In fact, one corporate jet tenant expressed concern over the frequent need to divert to another airport due to high crosswinds at the Jetport making it unsafe to land. The tenant commented that the crosswind component of most modern swept wing corporate aircraft is fairly low, so high crosswinds can make it difficult or impossible for them to land at times. There have also been reports of NetJets delaying or canceling their departure to the Jetport due to wind conditions, citing concern over a possible wing ground strike—similar incidents encountered by NetJets in high crosswind conditions at other airports.

Table 3D – All Weather Wind Coverage Analysis

	Crosswind Component			
Individual Runway	*A-I, B-I 10.5 knots (12 mph)*	*A-II, B-II 13 knots (15 mph)*	*A-III, B-III, C-I, C-II, C-III, D-I, D-II, D-III 16 knots (18 mph)*	*A-IV thru D-IV 20 knots (23 mph)*
Existing Runway 10-28	83.78%	89.43%	94.52%	98.18%
Possible Runway 1-19 alignment	85.90%	92.10%	97.14%	99.38%
Possible Runway 2-20 alignment	89.54%	94.97%	98.54%	99.73%
Possible Runway 3-21 alignment	92.91%	96.69%	99.10%	99.83%
Possible Runway 4-22 alignment	94.43%	97.13%	99.16%	98.83%
Combination of Runways				
R10-28 & R1-19 alignment	92.44%	96.56%	98.98%	99.92%
R10-28 & R2-20 alignment	94.84%	98.25%	99.61%	99.97%
R10-28 & R3-21 alignment	97.04%	99.16%	99.85%	99.99%
R10-28 & R4-22 alignment	97.69%	99.16%	99.78%	99.97%

Source: Afton Station, Doña Ana County, NM. Period: June 18,2014 through May 31, 2016.
Note: See appendices for updated wind analyses results using 24 complete months. Results show minimal change over results in Table 3D.

B. RUNWAY DIMENSIONS

The existing Runway 10-28, is 100 feet wide and 9,950 feet long, following a 1,050-foot runway extension in 2011. This length far exceeds the minimum recommended length identified in the NMASPU, which indicates that a Regional GA Airport should provide a runway length that serves 75 percent of the large aircraft fleet at 60% useful load, or 6,400 feet based on local conditions. However, potential B737 air cargo traffic on Runway 10-28 is better served by the existing 9,550 feet of runway length. **Table 3E** summarizes estimated runway length requirements for aircraft that currently use and could potentially use the Jetport in the future.

Table 3E – Runway Length Requirements for Sample Aircraft

Aircraft[1]	*ARC*	*Takeoff Weight (lbs.)*	*Runway Length*[4] *(feet)*
Cessna Citation X	C-II	36,100[2]	8,300
Gulfstream IV	D-II	71,780[2]	8,800
Challenger	C-II	47,600[2]	9,200
Global Express	C-III	96,000[2]	10,170
B737-400	C-III	127,000[3]	10,400
B767 Freighter	C-IV	357,000[3]	12,000

Notes: [1]Additional business jets with runway length requirements are included in the appendices. A copy of the air cargo study including a discussion of the aircraft fleet is also included in the appendices. [2]Max Takeoff Weight (MTOW) shown. [3]Takeoff weight (less than MTOW) is based on estimated figures; see air cargo study for additional discussion.[4]Runway length requirements based on Jetport conditions.

The County remains committed to the proposed crosswind/ secondary runway development identified in the previous plan. This master plan update reiterates the need supported by the County's vision for the Jetport as well as the crosswind conditions and long-term air cargo operations envisioned. Development alternatives addressed in the next chapter include a new 12,000-foot by 150-foot runway for heavy cargo aircraft. Since Runway 10-28 is site-constrained from further lengthening and a crosswind runway is needed for safety reasons, it is prudent to reserve land and airspace for an ultimate crosswind runway length that is not needed in the near-term future. The crosswind runway's initial phase of development is needed to serve small GA aircraft, which are most sensitive to crosswind conditions. The initial crosswind runway is proposed with dimensions of 5,700 by 75 feet to serve 100% of the small aircraft fleet as justified by the wind data analyses.

C. OTHER RUNWAY DESIGN STANDARDS

This section briefly reviews other design standards critical to the airfield planning and design process. **Table 3F** summarizes many of these standards, which are based on the applicable RDC and visibility minimums.

Table 3F – FAA Airport Design Standards for ADG II, III and IV						
Parameters		**Design Standards (in feet)**				
Runway Design Code (RDC)	**Approach Visibility Minimum**	**Runway Width**	**Runway to Parallel Taxiway Separation** [1]	**Runway Safety Area**	**Object Free Area**	**Runway Protection Zone**
Standards for Interim Crosswind Runway to Serve Small GA Aircraft Fleet						
B-II	Visual or 1 mile	75	240	150 wide 300 beyond runway ends	500 wide 300 beyond runway ends	1,000 x 500 x 700
Standards for Existing Runway 10-28 to Serve Current Aircraft Fleet Mix (incl. Corporate Jets)						
C-II	Visual or 1 mile	100	300	500 wide 1,000 beyond runway ends	800 wide 1,000 beyond runway ends	1,700 x 500 x 1,010
Future Runway 10-28 for C-III Air Cargo (under 150,000 lbs.)						
C-III (<150,000 pounds)[2]	½ mile (RVR 2400)	100	400	500 wide 1,000 beyond runway ends[3]	800 wide 1,000 beyond runway ends	2,500 x 1,000 x 1,750
Future Runway for C-IV Air Cargo Aircraft and C-III (over 150,000 lbs.)						
C-IV and C-III (>150,000 pounds)[2]	½ mile (RVR 2400)	150	400	500 wide 1,000 beyond runway ends[3]	800 wide 1,000 beyond runway ends	2,500 x 1,000 x 1,750

[1] The runway to taxiway/taxilane centerline separation standards are for sea level. At higher elevations like the Jetport's elevation of 4,112.8' MSL, an increase to these separation distances may be required to keep taxiing and holding aircraft clear of the inner-transitional obstacle free zone (OFZ). This applies to a future runway IAP with < ¾-mile approach visibility minimums.

Runway Width. Runway 10-28 is currently 100 feet wide, which meets the standard shown in Table 3F. The RDC and visibility minimums typically drive the runway width requirements. However, the runway width requirement is also affected by the gross takeoff weight of the design aircraft. This is an important consideration in planning Runway 10-28 improvements since the potential air cargo activity by B737 aircraft (ARC C-III) may be above or below 150,000 pounds based on the usable runway length. However, it is anticipated that the B737 air cargo would "bulk out", that is the volume available for cargo would be exceeded, before it maxes out in weight or reaches 150,000 pounds.

The initial construction of the crosswind should begin with a 75-foot width, at a minimum, to accommodate the small GA aircraft it will be serving. Ultimately, the runway could be widened to 150 feet when demand in aircraft as large as the B767 supports an upgrade to the crosswind runway. This would require complete reconstruction due to pavement design requirement differences between the GA fleet and heavier air cargo operators.

Runway to Parallel Taxiway Separation. This design standard ensures adequate wingtip clearance so the greater the ADG, the wider the separation required. Lower visibility minimums also require more separation. The Jetport's existing 445-foot separation exceeds the 300-foot minimum separation requirement for ADG II on Runway 10-28 for C-II activity. Although the crosswind will originally serve B-II with a minimum 240-foot separation, the parallel taxiway should be constructed at 400 feet in the beginning to comply with the ultimate C-IV separation requirement.

Runway Safety Area (RSA). Similar to other design standards, the RSA dimensions vary based on the RDC. The identification of the existing and future RSA at an airport is important to ensure the RSA is located on airport property and is properly cleared and graded to comply with FAA standards. RSAs are of particular importance to the FAA and receive high priority funding since they enhance the safety of aircraft that overshoot, undershoot or veer off the runway. The RSA also provides greater accessibility for firefighting and rescue equipment during such incidents. The RSA is a cleared and graded area centered about the runway centerline for the full length of the runway plus an extended distance beyond each runway end. The width and length beyond each runway end is a function of the type of aircraft and approach visibility minimums associated with the runway. As shown in the table, the RSA width requirement ranges from 150 feet for smaller aircraft to 500 feet for larger aircraft. The

RSA must extend beyond the runway end 300 feet to serve B-II and 1,000 feet to serve larger/faster aircraft. Visibility minimums also influence the RSA.

Runway Object Free Area (OFA). The purpose of the OFA is to maintain a clear area (beyond that required by the RSA) surrounding the runway. The OFA does not have a grading requirement like the RSA, but no object can protrude above the RSA within its boundary. The OFA is an area centered about the runway centerline for the full length of the runway plus an extended distance off each runway end. The width and length off each runway end is a function of the type of aircraft and approach visibility minimums associated with the runway. The OFA typically extends the same length beyond the runway end as the associated RSA, but the OFA is wider than the RSA.

Runway Protection Zone (RPZ). The function of the RPZ is to enhance the protection of people and property on the ground. The RPZ is an area (trapezoidal in shape) centered about the extended runway centerline and beginning 200 feet from the runway end. The size of the RPZ is a function of the type of aircraft and approach visibility minimums associated with the runway end. It is desirable to clear all objects from the RPZ, but some uses are permitted if they do not attract wildlife, are outside of the OFA, and do not interfere with navigational aids. Prohibited land uses within RPZs are residences, places of public assembly, and fuel storage facilities.

Since the last master plan, the FAA published interim land use guidance further restricting land use within an RPZ. Most notable is the requirement to keep roadways out of RPZs. Since it is not uncommon to find roads in the RPZ at airports nationwide, the FAA has identified the need to address the problem with a triggering event. In other words, if the airport sponsor is improving their runway and there is an existing roadway in the runway proposed for improvement, this would require FAA coordination to address the RPZ land use issue. Similarly, if the roadway traversing the RPZ is proposed for improvement, the same coordination with the FAA is required. The FAA will determine the expected action on a case-by-case basis. With an existing roadway and railroad close to Runway 10-28 and the proposed crosswind, the interim RPZ land use guidance requires consideration in the development alternatives.

D. TAXIWAYS

Taxiway requirements for the Jetport are based on the need for improved access to current development areas, access to proposed new development and expansion, and compliance with current FAA design guidance.

In the FAA's former airport design guidance, taxiway design was driven by the Airplane Design Group (ADG). In the updated AC 150/5300-13A, a new component drives taxiway design, the Taxiway Design Group (TDG). The TDG includes seven classifications and is based on the overall Main Gear Width (MGW) and the Cockpit to Main Gear (CMG) dimension. For the Jetport, the TDG will vary depending on the area accessed. For example, T-hangar areas may be served by TDG 1A/1B while other areas may require TDG 2, 3 or greater based on the aircraft type served. With respect to air cargo aircraft, the B737 is TDG 3, which requires a 50-foot wide taxiway. The B767 is TDG 5, requiring a 75-foot wide taxiway.

As noted earlier, the separation requirement between the runway and taxiway centerline for B767 aircraft (C-IV) is 400 feet regardless of visibility minimums. Therefore, development of a crosswind runway to ultimately serve heavy cargo aircraft should comply with this 400-foot separation requirement.

Taxiway A, which serves Runway 10-28, is 445 feet from runway centerline. Taxiway A is 75 feet wide with 25-foot shoulders allowing it to serve as an interim runway during major runway improvement projects—an imminent need with the proposed reconstruction of Runway 10-28. The connecting taxiways range from 35 to 75 feet in width. New taxiways and taxilanes will be needed to serve additional landside development and development associated with the proposed crosswind runway.

Taxiways A3 and A4 (connecting Taxiway A to the apron area) provide a direct line of access from the apron to the runway. A pilot unfamiliar with the Jetport could easily and unintentionally taxi from the apron directly onto the active runway. New FAA guidance recommends that these direct access taxiways between the runway and apron be reconfigured or removed. Instead, the taxi path from the apron to the runway should include 90-degree turns, which enhances situational awareness and reduces the potential for runway incursions.

E. APRON

The apron area needed for transient aircraft is summarized in **Table 3G**. Determining apron requirements starts with translating peak operations into the number of aircraft on the ground at one time and distributing those aircraft by ADG. The peak month contains an estimated 11% of the annual activity and the design hour contains an estimated 15% of the design day activity.

While the table suggests the apron area is adequately sized for parking, users have suggested that apron circulation needs improvement. In addition to the transient aircraft parking calculated in Table 3G, circulation and parking for aircraft clearing U.S. Customs is needed. Further, air cargo activity is not included in these calculations.

Table 3G – Apron Requirements

Operations	2015	2020	2025
Annual Itinerant Operations	17,500	21,577	26,239
Peak Month Operations	1,925	2,373	2,886
Design Day Operations	62	77	93
Aircraft			
Aircraft on average day of peak month	31	39	47
Aircraft simultaneously parked on apron	12	15	19
Aircraft parking fleet mix			
Primarily ADG I	8	10	12
Primarily ADG II	3	4	6
Primarily ADG III	1	1	1
Apron Requirements (square yards)			
Apron area needed	17,800	21,400	26,800
Existing apron available	65,400	65,400	65,400
Additional apron required	0	0	0
Demand/capacity ratio	27%	33%	41%

According to the air cargo study, peak operations for potential air cargo activity would require 47,500 square feet of apron and potentially more for ground equipment. Also, cargo carriers prefer their operations area be secure with some level of access control, which is not presently available where an air cargo carrier might stage on the Jetport apron. Depending on the carrier, a secure area may be a requirement, not just a preference. However, there are other GA airports accommodating air cargo without apron security and access control. One example is Hawkins Field in Jackson, MS, which hosts many ad hoc air cargo charters serving a nearby Nissan assembly plant.

Apron expansion options to accommodate the various airport user needs by land use area will be incorporated into the development alternatives.

F. HELICOPTER FACILITIES

In Chapter Two, helicopter operations were estimated at 6% of total operations and forecast to represent 8% of the total activity within 10 years. This translates to an average of seven daily helicopter operations now and 12 daily operations by 2025. If helicopter operations and fixed wing operations were significantly higher, better separation of these two users might be needed. However, in the user survey, at PAC meetings, or during interviews, airport users and other stakeholders have not identified a need to separate helicopters from fixed wing aircraft. Presently, helicopters use the public aircraft parking apron or their lease lot for operations—avoiding areas where dust might be generated like the museum apron area. Customs and Border Protection (CBP) helicopters often use the heavy aircraft apron. While this has worked well for the helicopter activity in the past, development alternatives in the next chapter should consider the possible long-term need to separate the growing helicopter activity from the fixed wing in the apron area, particularly the smaller fixed wing aircraft.

G. AIRPORT PAVEMENTS

According to the statewide pavement survey results conducted by NMDOT Aviation in 2014, several pavement projects are needed during the planning period. The most significant pavement project in the near-term is the reconstruction of Runway 10-28. Design of the reconstruction was not initiated until the master planning process identified the pavement strength needs through the alternatives analysis documented in the next chapter.

Although the forecasts identify the design aircraft as a corporate jet, the contingency scenario's projected air cargo operations represent a more demanding aircraft by weight—the B737-400. The maximum gross takeoff weight of this aircraft is in the 150,000-pound range, but the actual load will likely be less. Air cargo study findings indicate that the B737-400 operations will likely be conducted at an estimated takeoff weight of 135,000 pounds. Recent pavement strength testing results on Runway 10-28 provide a strength rating of 20,000 pounds single wheel gear, so such operations cannot be accommodated today.

To ensure the Jetport can maximize the life of the airport pavements, the County should continue regular pavement evaluations and consistently use its pavement maintenance management system to identify and program pavement projects effectively. Specific projects already identified will be incorporated into the Airport Capital Improvement Plan (ACIP) in the last chapter of the master plan.

H. AIRFIELD LIGHTING, MARKINGS, AND SIGNAGE

Airfield lighting at the Jetport includes the pilot-activated Medium Intensity Runway Lighting (MIRL) system on Runway 10-28. The MIRL system requires an upgrade in the near-term as the current system is two decades old; a more modern and energy efficient system such as LED fixtures should be considered as part of a future runway project. However, the County should consider replacing the lighting with a High Intensity Runway Lighting (HIRL) system as recommended by NBAA to better serve the corporate jet traffic. The HIRL system would be eligible for federal funding if the Jetport moved forward with plans for a full precision instrument approach, which would include a glideslope and localizer array along with a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lighting System (MALSR). The existing Runway End Identifier Lights (REIL) system on both ends of Runway 10-28 are in good condition and adequate for the planning period.

The Medium Intensity Taxiway Lighting (MITL) system installed in 2002, is in good operating condition. However, the MITL system should be upgraded in the future with LED fixtures.

Airfield markings comply with FAA guidance. While no new markings are needed now, the runway will be remarked as part of the reconstruction project. Also, new markings would be required if a precision instrument approach is published.

Airfield signage should be updated as needed throughout the planning period. The current airfield signing, especially the runway exit signs and numerous hold position/location signs are in poor condition. Also, the signing is of various vintages, some well over 25 years old with faded panels and from various manufacturers. All the signing should be updated and replaced during the Runway 10-28 reconstruction project, preferably with LED fixtures However, the number of signs, location, and type are dependent on the type of runway and the associated instrument approaches.

I. NAVIGATIONGAL AIDS

The two-light Precision Approach Path Indicator (PAPI) system on Runway 10 was installed at the same time as the MIRL system, 20 years ago, and needs an upgrade during the planning period. The PAPI system on Runway 28, installed in 2011 during the runway extension project, is in good condition. Occasional problems have been reported with the PAPI systems, which are pilot-activated and on the same frequency as the runway lights. This issue was also identified in the airport user survey responses.

The rotating beacon, replaced in 2014, is in good operating condition and should be adequate throughout the planning period. Lighted wind indicators at the Jetport are monitored and replaced, as needed.

The RNAV GPS instrument approach on Runway 10, published in 2005, provides one-mile visibility minimums and is equivalent to a nonprecision approach. However, airport users identified the need for a better instrument approach. This need was also identified in the previous master plan by the corporate aviation community. In the recent airport user survey results, an improved instrument approach with precision capability was ranked third among all needs identified for the Jetport. While the current instrument approach meets the minimum NMASPU recommendation for an approach, the NBAA recommends precision capability for the business aviation users to enhance airport operational reliability for a broader range of weather/ visibility conditions. Historically, a precision instrument approach referred to an approach with both lateral and vertical guidance while nonprecision lacked vertical guidance. With new technology, many airports have instrument approaches that include lateral and vertical guidance, but the visibility minimums vary based on several factors. For this reason, the FAA's new definition for a precision approach includes visibility minimums less than ¾-mile, while nonprecision is ¾-mile or greater. FAA recently commented that there is a significant backlog of requests for instrument approaches. Further, aeronautical surveys that meet FAA requirements must be completed as part of the process to obtain a new instrument approach procedure. It's important to emphasize that instrument approach capability may be important to air cargo operations depending on typical weather conditions. Although future precision approaches were included in the Jetport's previous Airport Layout Plan (ALP), airspace requirements and land use impacts should be considered in future development decisions for the existing runway and any proposed crosswind runway. Consequently, the development alternatives in Chapter Four address precision instrument approach requirements and impacts.

J. WEATHER REPORTING

Pilots responding to the Jetport's user survey identified the need for certified weather as the #2 requirement, after the #1 need for a crosswind runway. The Super Automated Weather

Observing System (AWOS) was recently replaced with an FAA-approved AWOS III P/T[2] system meeting this high priority facility need and should provide adequate weather reporting through the planning period.

III. LANDSIDE REQUIREMENTS

A. HANGARS

The Jetport's aircraft storage capability includes conventional hangars and T-hangars as well as aircraft shade structures. Demand for aircraft storage is high with a waiting list for approximately 29 aircraft—6 of the 29 are currently in shade structures. For planning purposes, it is assumed that the forecast of additional based aircraft will all require hangar space. Nearly all aircraft based at the Jetport today are contained in hangars or shade structures. Pilots responding to the airport user survey also indicated the need for additional hangar development. As shown in **Table 3H**, hangar space for 13 additional projected based aircraft is required in the near-term (five years), comprised of five T-hangar spaces and eight conventional hangar spaces. By 2025, another 13 based aircraft are forecast with 10 requiring T-hangar spaces and three needing conventional hangar space. In the development alternatives, concepts for additional T-hangar and conventional hangar development areas are provided. The proposed hangar development identified in the previous master plan and current ALP will also be reevaluated.

Table 3H – Additional Hangar Space Requirements

Year	T-hangar unit space	Conventional hangar space	Additional Based Aircraft
Baseline	Waiting List of 29 (6 of 29 in shades)		
2020	+5	+8	+13
2025	+10	+3	+13
TOTAL	**15**	**11**	**26**

[2] Includes precipitation type identification and thunderstorm detection.

B. TERMINAL

The FBO (Francis Aviation) currently provides a facility that serves as the GA airport terminal building for pilots and passengers. A variety of services and facilities are available, as described in Chapter One, Inventory. While a terminal building can range in size depending on airport activity and the types of users, the FBO's current building provides adequate space and expansion potential to continue serving airport users through the planning period. The FBO building's location with nearby fueling, aircraft parking and storage, auto parking, and roadway access provide users with the support needed at the Jetport within the planning period. For conference room needs, the Airport Administration/Hazmat Building and War Eagles Museum have meeting space. For long-term planning purposes, the County should consider reserving area for a public GA terminal.

C. AVIATION SERVICES

The Jetport's one full-service FBO, located at the west end of the corporate building area, provides a variety of services. While all landside facilities are located on the south side of the airfield, ultimate development of the Jetport may include new development areas on the north side of the airfield. Construction of a crosswind runway and associated taxiway system to the north could attract aviation services and other landside facilities. This would drive the need for a second FBO to serve the new development area on the Jetport.

D. FUEL

The Jetport's fueling operation is adequate to meet current fueling needs, but the County recognizes the need for various improvements including a fuel containment system. Other planning considerations in the long-term development of the Jetport include: protection for possible secondary fuel farm and dispensing facilities on the north side and the provision of safe and easy ingress and egress for the fuel delivery truck, fuel tenders, and aircraft to and from the self-service area. Fuel facilities and surrounding activity should be clear of protected surfaces such as runway and taxiway object free areas (OFAs).

E. AIRPORT MAINTENANCE BUILDING

In the 2008 study, Doña Ana County included plans for a maintenance building to store equipment and supplies. The building remains an important need and should be incorporated into the current plans for landside facilities. Further, a dedicated maintenance building would open space in other various locations where the County currently has storage. A centralized location for maintenance equipment and supplies would improve efficiency in airport maintenance.

F. AIR CARGO NEEDS

Some of the needs for the air cargo scenario have been addressed in Airside Requirements. The air cargo study has additional recommendations for other facility and service support at the Jetport:

- U.S. Customs support (hours, staffing). For Foxconn, inbound materials may be cleared at LAX, but U.S. Customs at the Jetport may be needed depending on how the freight forwarders are set up.
- Aircraft Rescue and Firefighting (ARFF). Support can be part-time/on-call
- Santa Teresa Port of Entry – adequate hours, staffing. (Foxconn noted that they pay U.S. CBP to stay open for their shipments after normal operating hours (6AM-12AM, 7 days/week.)
- Adequate roadways – Airport Road has limited capacity given the demand for trucks. NM 136 (Pete Domenici Highway) & Artcraft Road are congested during peak hours
- Future Part 139 Certification.

The air cargo study points out that the Jetport remains a potential alternative for a portion of the El Paso air cargo market if support facilities and services are available. The Jetport's location is convenient for air cargo originating from or destined for businesses in the western half of the El Paso metropolitan area (including Santa Teresa) and parts of Juarez. Further, since the average wait times at El Paso points of entry (POEs) are far higher than the Santa Teresa POE, some maquiladora traffic may be using the Santa Teresa POE to reach El Paso International Airport-- driving past the Jetport.

G. WASH RACK

The Jetport does not have a facility to support aircraft wash down. A few of the survey respondents identified a need for a wash rack. Further, a suggestion was made to locate a wash rack near the aircraft shades. A wash rack would need a catch basin and proper diversion into a storm water treatment system.

H. OTHER FACILITIES

Several facilities presented in Chapter One, Inventory, are adequate through the planning period but expansion and/or other improvements beyond 2025 may be needed. These facilities include:

- Airport Administration/Hazmat Building
- CBP Building
- War Eagles Air Museum
- National Oceanic and Atmospheric Administration (NOAA)/National Weather Service (NWS)

The need for an ATCT was discussed in the last master plan. However, FAA cost-cutting measures have resulted in several towers closing. These closures include those with annual operations much higher than the Jetport's traffic. Consequently, an ATCT is not a viable option for the Jetport during the planning period, but might be considered in the alternatives for long-term development.

I. VEHICLE ACCESS AND PARKING

Although some airport access road improvements have been completed since the 2008 plan, additional improvements are needed to better the serve airport users. Recently, funding was programmed for portions of the access roadways in poor condition. Also, aesthetic improvements to the Jetport's entrance have been proposed. Recent user survey respondents identified the need to improve the Jetport's image to attract more business.

The landside facilities have several areas used for auto parking—adjacent to the FBO, Airport Administration Building/Hazmat Building, War Eagles Museum, and some of the leaseholds. Expansion of parking should be coincident with future development.

J. SECURITY AND FENCING

Expansion of landside facilities on the south side of the runway as well as the development of any new facilities on the north side will require modifications in fencing and gates. User survey respondents identified one of the restricted access gates as inoperative and in need of repair.

Future airport tenants and operators (e.g. air cargo, additional business jets) may have specific security needs. Additional lighting on aircraft apron areas and auto parking areas as well as other recommendations associated with the TSA's Security Assessment tool discussed here should be incorporated with expansion planning and development at the Jetport.

The TSA published guidance on GA airport security in 2004. While not regulatory, the recommendations provide airport sponsors with helpful suggestions to enhance the security of their airports. **Table 3I** summarizes the results of the GA Airport Security Assessment for the Jetport. This assessment is derived from a point ranking system for various airport characteristics that could affect a facility's potential security concerns. Results in Table 3I are the same as those in the 2008 plan.

Table 3I – GA Airport Security Assessment for the Jetport

	Public Use Airport (Existing Conditions)	**Public Use Airport (Ultimate Conditions)**
LOCATION		
Within 30 nm of mass population areas	5	5
Within 30 nm of a sensitive site	4	4
BASED AIRCRAFT		
Greater than 101 based aircraft	3	3
Based Aircraft over 12,500 lbs.	3	3
RUNWAYS		
Runway length greater than 5,001 feet	5	5
Asphalt or Concrete Runway	1	1
OPERATIONS		
Over 50,000 annual aircraft operations	-	4
Part 135 operations	-	3
Flight Training	3	3
Rental Aircraft	4	4
Maintenance, Repair, and Overhaul facilities conducting long-term storage of aircraft over 12,500 lbs.	-	4
Total	28	39

As shown, the points total 28 for existing conditions and 39 for future. Future conditions are based on possible changes in operations--forecast growth in annual aircraft operations, Part 135 operations, and possible maintenance, repair and overhaul facilities conducting long-term storage of aircraft over 12,500 lbs. The results for existing and future conditions fall into the "25 to 44 points" which refers sponsor to the following recommendations for security improvements:

- Access Controls
- Lighting System
- Personnel Identification (ID) System
- Vehicle ID System
- Challenging Procedures
- Law Enforcement Officer (LEO) Support
- Security Committee
- Transient Pilot Sign-In/Out Procedures
- Signs
- Documented Security Procedures
- Positive Passenger/Cargo/Baggage ID
- All Aircraft Secured
- Community Watch Program
- Contact List

K. UTILITIES

The Jetport is served with water, wastewater, electricity, natural gas, and telephone utilities. In 2009 a Joint Power's Agreement between Doña Ana County and the City of Sunland Park formed the Camino Real Regional Utility Authority (CRRUA), which has a duration of 20 years. CRRUA provides water and wastewater services to the Jetport. CRRUA also has planning and zoning responsibilities, but the planning and zoning authority specifically excludes the Jetport.

Water. The Jetport is in the CRRUA Santa Teresa Industrial Park (STIP) Service Area. Water resources include Well 6A, with associated storage tank and booster station, and a portion of the former Doña Ana County Utilities Water System Service Area, including Well 5 and associated storage tank and booster station. When the STIP Arsenic Treatment Facility began operating in 2013, infrastructure was installed so that Well 5 could also supply the STIP Service Area, via the new 2-million gallon (mg) tank. The Well 5 Booster Station does not serve the Santa Teresa Industrial Park Service Area; it currently serves the Logistics Industrial Park, the UPRR Intermodal Facility, and the West Mesa WWTP on Pete Domenici Highway.

The service area consists of the following infrastructure:

- STIP Arsenic Treatment Facility – Treatment capacity 3.6 million gallons per day (mgd)
- Production Wells – Well 5 and Well 6A, total reported production capacity of 1,300 gallons per minute (gpm) (1.87 mgd), Well 14 (future)
- Storage Tanks – Well 5 0.27 mg tank with a portion reserved for fire storage, STIP Arsenic Treatment Facility 2.0 mg tank, and Well 6A 1.0 mg tank with over half reserved for fire storage; total storage capacity of 3.27 mg
- Booster Pump Stations – Well 5 Booster Pump Station, Well 6A Booster Pump Station, and Santa Teresa Industrial Park Pump Station (transfer pump station)
- Capital Improvement Projects –Well 14

Water produced from Well 5 and Well 6A is treated at the STIP Arsenic Treatment Facility and stored in the 2.0 mg and 0.27 mg tanks located adjacent to the Arsenic Treatment Facility. Water produced from future Well 14 will also be treated at the Arsenic Treatment Facility and will provide a redundant well for the system. The Well 5 Booster Station pumps treated water into a 16-inch main on Industrial Drive and provides water to the Logistics Industrial Park, the UPRR Intermodal Facility, and the West Mesa WWTP on Pete Domenici Highway. The Santa Teresa Industrial Park Booster Pump Station transfers finished water from the 2.0 mg tank to the 1.0 mg storage tank located next to Well 6A.

The Well 6A Booster Station discharges into a 10-inch main on Airport Road and serves the Santa Teresa Industrial Park and Jetport. The distribution systems served by the Well 5 and Well 6A Booster Stations are not interconnected.

The STIP and Border Service Areas are supplied by booster stations, described below.

- STIP Well 5 Booster Station – This booster station is located west of the Arsenic Treatment Facility on Industrial Drive. The Well 5 Booster Station is supplied by the existing 0.27 mg and 2.0 mg tanks and pumps into a 16-inch main in Industrial Drive. The booster station was constructed in 2000 and is equipped with three pumps to meet domestic demand: a 50 gpm jockey pump; a 200 gpm pump, and a 500 gpm pump for a total domestic pumping capacity of 750 gpm. The domestic pumps are designed to maintain 75 pounds per square inch (psi) in the system. The pump station is also equipped with two fire pumps with a total capacity of 2,250 gpm. If demand exceeds 750 gpm, the fire pumps are signaled to operate and take over providing water to the system.
- STIP Well 6A Booster Station – CRRUA constructed a new booster station and fire pumps to serve the Santa Teresa Industrial Park and Jetport in 2014. The new booster station has a domestic pumping capacity of 750 gpm and is equipped with a low flow (50 gpm) jockey pump and three 375 gpm service pumps (two primary and one back-up). The fire pumping capacity is 3,000 gpm and is provided by 1,000 gpm fire pumps. System pressure at the booster station is approximately 80 psi and the fire pumps operate when the pressure in the system drops below 60 psi.

The source of the preceding information is the CRRUA Water Infrastructure Plan Update, September 2014.

Wastewater. CRRUA also provides sanitary wastewater services. Currently, wastewater from an estimated five hangars is removed via separate lift stations that deliver wastewater to a septic tank and drainage field, which is located near the southern airport boundary near the industrial park. Individual septic systems serve other hangars and buildings.

The City of Sunland Park provides wastewater collection and treatment for the adjacent STIP. Collection mains vary from 8 to 16 inches. The wastewater goes to a 500,000-gallon per day (gpd) extended aeration treatment plant from which treated effluent is pumped to a 1.5 mgd plant in Sunland Park for further treatment and subsequent release into the Rio Grande.

City of Sunland Park utility engineers report sufficient capacity exists within the sewage collection system of the adjacent Santa Teresa Logistics Park to allow connection with the Jetport. However, a sewer connection requires obtaining an easement and designing/constructing a sewer main and associated appurtenances (manholes, pumps, etc.). In addition, City of Sunland Park connection fees would likely apply.

Electricity. El Paso Electric Company, regulated by the New Mexico Public Utility Commission, serves the Jetport from the Santa Teresa Substation. The substation is equipped to handle a 28-megawatt load, and the peak load to date is 8 megawatts. The substation design allows the addition of a second transformer that will increase the available capacity to 60 megawatts.

Natural Gas. New Mexico Gas Company (NMGCO) provides natural gas service. NMGCO's gas supply connects with several interstate pipelines and to some of the largest natural gas reserves in the United States. Natural gas quality is high, averaging 96% methane.

On the west side of the existing Jetport access road is a NMGCO gas main that can provide service to the Jetport. The main runs north past the industrial park, turns west and then runs along the south side of the Jetport. The gas main terminates at a meter located at the end of the access road. It is a 4-inch diameter polyethylene line with a maximum pressure of 45 pounds per square inch gauge (psig). A smaller service line (2-inch diameter) extends north from the meter to the Francis Aviation facility. For future expansion, additional service lines can easily be connected to the 4-inch gas main.

The 17-mile, 12-inch steel Chamberino pipeline, which runs adjacent to the Jetport along the Union Pacific railroad tracks, was completed in 1998. This pipeline, as well as an El Paso Natural Gas (EPNG) line running from El Paso, feeds the NMGCO service to the Jetport. NMGCO estimates that only 5% of the overall capacity of the Chamberino pipeline is now used for natural gas delivery.

Telecommunications. Qwest provides telecommunication and high-speed Internet services to Santa Teresa and the Jetport. Qwest has a digital switching office near the Jetport with capacity to add 3,000 additional lines. Qwest has anticipated major growth, since current use is 40 to 50 lines.

L. DRAINAGE

Storm water at the Jetport generally flows outward to the northeast and to the southeast. The property is very flat, with an approximate slope of 0.2%. Appropriate pavement slopes, concrete V-gutters, and a system of swales direct storm water around building and pavement areas and through drainage structures (primarily concrete culverts) under pavement areas that discharge to two storm water detention swales on the east and north side of the runway. The swales detain storm water, allowing it to infiltrate into the ground or be released at a controlled rate. If a storm event exceeds the swales' capacities (greater than a 10-year event), water overflows to arroyos that begin at the northeast edge of the property.

Detention basins are an effective method of storm water control at the Jetport. Most or all of the storm water infiltrates to the ground or evaporates during dry seasons. During intense storms or wetter seasons, water infiltrates, evaporates and/or is discharged to arroyos. Topography and elevation above to the valley floor indicate that infiltration from the detention basins will not reach the water table.

This method of storm water management, routing runoff to existing and proposed detention facilities, will likely be continued with Jetport expansion. The 2006 Storm Water Pollution Prevention Plan (SWPPP) specifies that all new structures and paved areas will be constructed with adjacent detention swales to collect and control run-off.

Doña Ana County Ordinance 248-2010 outlines the requirements for storm water management and airport leases specify storm water must be managed on the lease site.

All drainage structures affecting offsite drainage must be approved by the Doña Ana County Flood Commission (DACFC). Erosion protection must be provided to affected areas if storm water discharges from the Jetport increase the erosion potential in the detention swales or the arroyos.

IV. SUMMARY

The existing facilities at the Jetport can accommodate a significant level of activity at the Jetport based on improvements completed in recent years. The proposed new and expanded facilities will address the new FAA design standards, the growing aviation demand, the changes in the aircraft fleet mix, and the County's vision for the Jetport.

Reconstruction and strengthening of Runway 10-28 will be a high priority airside project. A new crosswind runway will remain an important airfield need to increase the safety of aircraft operations during the Jetport's strong crosswind conditions. The potential to extend the crosswind runway to 12,000 feet to serve the ultimate air cargo scenario will require ongoing airspace and land use protection. Additional development of taxiways and taxilanes will continue to serve landside expansion. Pavement maintenance will be an ongoing and critical element in preserving the County's airfield investment. Improved instrument approach capability will be essential in attracting new business-related activity and addressing the GA community's needs.

Development of new T-hangars and conventional hangars is essential to address the needs of the GA community—evident with the long waiting list and the recent growth in demand. Support facility and service improvements, such as utility infrastructure and security, will require completion coincident with other airport development. Landside facility needs anticipated beyond the 10-year planning period should be considered with land reserved for such improvements, similar to long-term airside requirements.

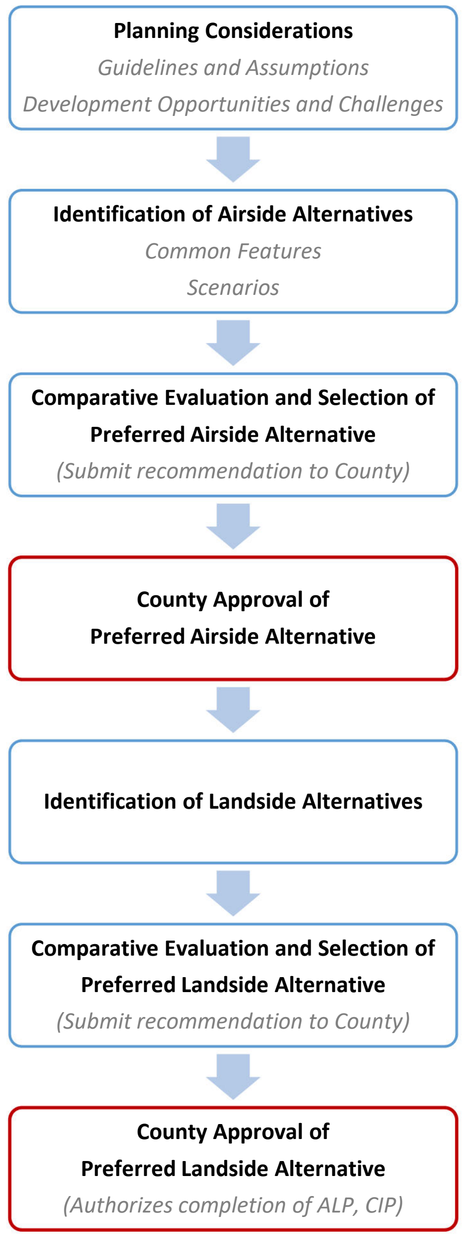
In the next chapter, the near-term to long-term facility needs are presented on various development alternatives for the Planning Advisory Committee, Airport Advisory Board, County, and the public to review and comment. Ongoing coordination with the FAA and NMDOT Aviation is important in prioritizing needs for ultimate funding purposes and to ensure that appropriate environmental reviews are initiated in a timely and effective manner.

Chapter Four
DEVELOPMENT ALTERNATIVES

Development alternatives for the Doña Ana County International Jetport (Jetport) are presented and comparatively evaluated in this chapter. This element is of critical importance in the County's decision-making as it presents alternative ways to develop the Jetport. The development alternatives offer a broad spectrum of ideas to meet the airport improvement needs for the 10-year planning period, but also consider potential needs in the more distant future. Taking into consideration the findings from this and prior chapters, the County selected a preferred development plan that it believed was in the best interest of the Jetport, its users, and the surrounding region. Although the existing FAA-approved Airport Layout Plan (ALP) derived from the 2008 master plan has been guiding improvements at the Jetport, this planning update offered the County an opportunity to revisit their development plans with new information and a fresh look. As part of the process, this allowed the County to uphold and/or modify any components of their earlier plans depending on the updated needs.

I. PROCESS

There were several steps in the alternatives element for the master planning study. The following flow chart summarizes these steps.



The alternatives element began with an outline of planning considerations deemed influential in defining various development concepts and the ultimate implementation of proposed improvements. Included were guidelines and assumptions to establish parameters for the process and recognize site development opportunities and challenges. Next, the identification of various airside development alternatives was completed including an outline of common features among the build alternatives. The airside alternatives were based on scenarios driven by the Chapter Two forecasts and air cargo study findings. Then, a comparative evaluation of the various airside alternatives was completed, which concluded with the selection of a preferred airside alternative. This preferred airside alternative was chosen by the Planning Advisory Committee (PAC) and subsequently submitted to the County Commission for approval. Community outreach was an important component of this evaluation process so a public information workshop was conducted to invite the community's input before the County reviewed and approved the preferred airside development alternative.

The County's decision on airside development was necessary before property could be identified for landside development alternatives to support new buildings, support facilities, and access roadways. Much like the airside process, the PAC completed a comparative evaluation of landside concepts and chose a preferred landside alternative. Once the landside recommendation to the County was approved, the development alternatives element of the study was complete. The final master planning element, a plan for implementing the preferred airside and landside alternatives, is documented in the next chapter. The implementation plans include the Airport Capital Improvement Plan (ACIP) and the ALP update.

II. PLANNING CONSIDERATIONS

GUIDELINES AND ASSUMPTIONS

The following guidelines and assumptions provided a framework for defining alternative ways to develop the Jetport's airside (e.g. runways, taxiways) and landside (e.g. building areas, support facilities). Some of the physical site considerations mentioned in this list are called out on **Exhibit 4A**:

- A "no action/no build alternative" is presented for comparison purposes, as required by the FAA and appropriate environmental analyses. All proposed development on the "build alternatives" follows current FAA design standards and/or proposes a request for modification to standards subject to FAA approval.
- Airside development alternatives are presented and evaluated first since the selected airfield configuration will dictate what property is available for landside development. Further, the anticipated fleet mix to be accommodated on the primary and crosswind runway may drive the location of future landside facilities. Landside development alternatives are presented and evaluated following the selection of a preferred airside development alternative.
- Undeveloped/vacant property is included in the various development alternatives to accommodate future improvements needed to meet demand.

- Runway 10-28 cannot be extended due to site constraints that cannot be eliminated in a financially feasible manner. Therefore, Runway 10-28's current length of 9,550 is the maximum length used in all development alternatives. Also, the concept of shifting the runway to the north to allow a longer runway was eliminated since the current length is sufficient for the anticipated demand, a significant investment has already been made in that runway, and a crosswind runway is a higher priority.
- A secondary/crosswind runway is needed to improve crosswind coverage since Runway 10-28 coverage is inadequate (less than 95% coverage). Airspace protection requirements and traffic pattern overflight are inherent with an additional runway. Many of the alternative crosswind alignments are shown near the escarpment to keep the runway close to Runway 10-28 and existing landside facilities and services, which minimizes taxi time. However, an analysis of turbulence associated with the escarpment adjacent to a runway end has not been conducted; this should remain a consideration in the ultimate siting of a runway end. The escarpment is associated with the mesa top on the east side of the Jetport.
- A Runway Visibility Zone (RVZ) may require protection from landside development when a secondary runway is introduced to the airfield configuration—the protection area depends on the location of the second runway in relation to the existing runway. The RVZ provides pilots with a clear line-of-sight for multi-runway airfield operations, which is especially important at airports without an airport traffic control tower (ATCT) like the Jetport.
- An instrument approach procedure with less than ¾-mile visibility minimums was eliminated from R10-28 proposed improvements since the large size of the Runway Protection Zone (RPZ) (1,000-foot inner width, 1,750-foot outer width, and 2,500-foot length) would overlay roads on both ends. According to FAA guidance, this would require displacing or relocating thresholds, consequently impacting runway length.
- Alternatives include a non-precision approach with 1-mile visibility minimums and an instrument approach with 3/4-mile approach visibility minimums, which could be a "localizer performance with vertical guidance" (LPV) procedure, which are WAAS-enabled. These WAAS-enabled LPV procedures do not require ground-based transmitters, which eliminates the need to site ground based navigation equipment and maintain associated critical areas.

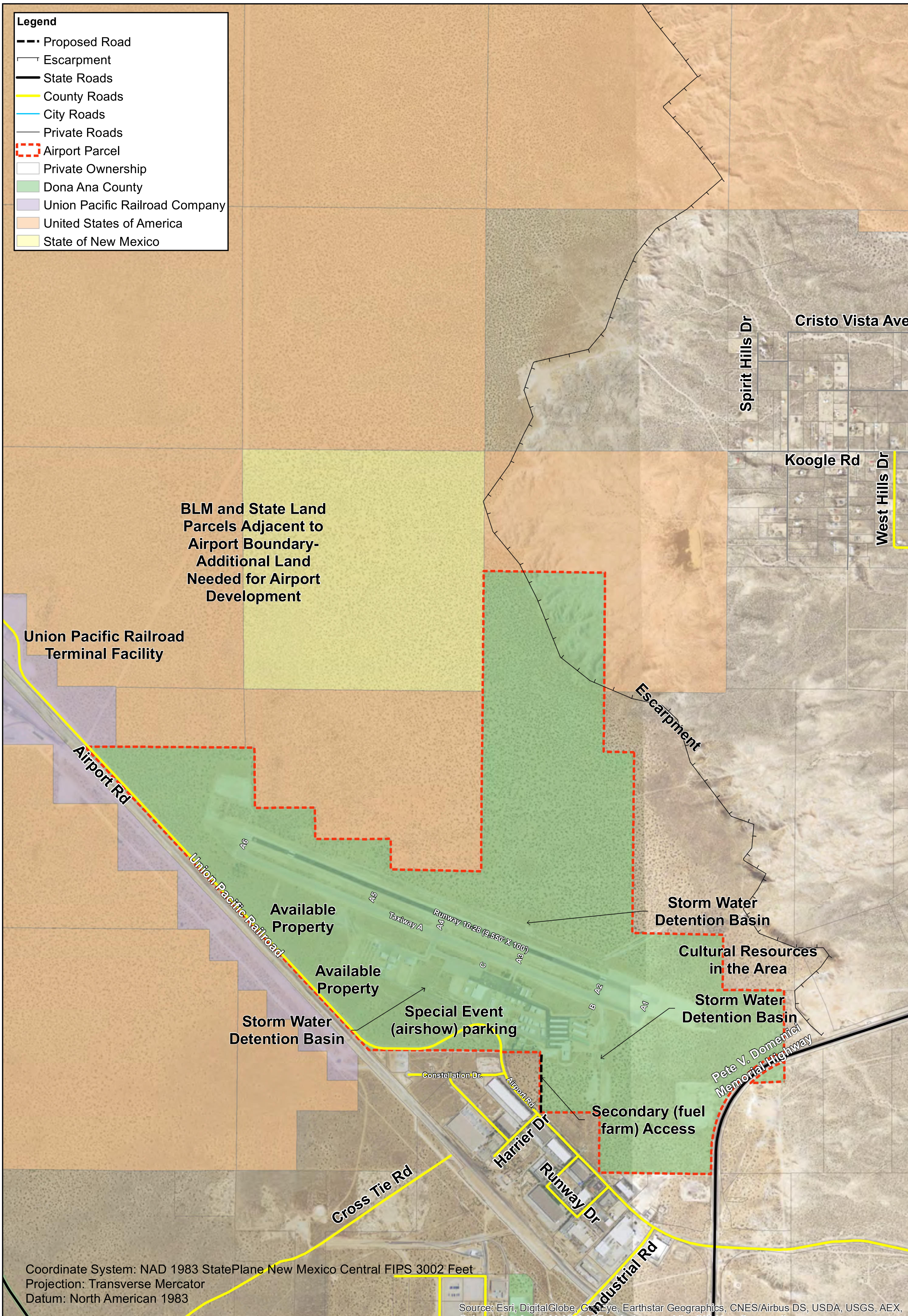


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Exhibit 4A
Site Considerations

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Author: gmaynard

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- All proposed improvements would be implemented on a demand-driven basis. Aviation demand forecasts in Chapter Two support up to Airport Reference Code (ARC) C-II facility improvements while the air cargo study in the appendices identifies strong potential demand for ARC C-III air cargo activity. Development alternatives consider needs within the planning period as well as potential needs in the distant future.
- All proposed development may be subject to future environmental analyses, as appropriate.
- Utility infrastructure and auto access improvements would be needed to support proposed development.
- All alternatives assume existing facilities would be maintained, as appropriate, unless otherwise identified.
- Preliminary planning-level cost estimates (in 2016 dollars) of the alternatives were prepared to aid comparative evaluation.
- Land use designations on the landside alternative exhibits identify placement of Small GA, Corporate GA, Air Cargo, Terminal, Support, and other relevant uses. Separating land use areas, when feasible, allows the County to focus only on the needs of each specific type of user regarding taxiways, security, vehicle access, utilities, and other services and facilities.

III. IDENTIFICATION OF AIRSIDE ALTERNATIVES

A. COMMON FEATURES

There are common features in all airside build alternatives that are necessary basic improvements, but the approach to meet these needs may vary. These common features include:

- Secondary/crosswind runway: Inadequate wind coverage on Runway 10-28 supports the need for a crosswind runway, which is the #1 priority identified by airport users. Various locations and alignments with varying wind coverage are presented.
- Pavement Strengthening: Runway 10-28 pavement strengthening is required beyond the current 20,000 lbs. Single Wheel Load (SWL). Strengthening varies depending on design aircraft. *Note: There are significant FAA design changes at specific pavement strength design and thickness requirement thresholds of 60,000 lbs. and 100,000 lbs. (aircraft weight).*

- Taxiway system: A parallel taxiway system and associated connecting taxiways to serve landside development are inherent in all crosswind runway concepts, but are not shown for simplicity. Direct access from the aircraft parking apron to the runway will be eliminated on Connector Taxiway A3 to reduce the potential for runway incursions and to comply with current FAA design standards. Detailed taxiway improvements to support the preferred alternative will be included on the ALP.
- Runway Protection Zone (RPZ): Land use action is needed to respond to FAA's Interim Land Use guidance for RPZs, which indicates the highway and railroad at the northwest end of Runway 10-28 are incompatible land uses. Options to address the RPZ land use issue include a request to the FAA for a modification of standards, or a displaced threshold to pull the RPZ inside the airport property line and off the road and railroad.
- Land acquisition: All or a portion of any proposed crosswind runway would extend beyond current airport property boundaries and will require land acquisition. The acreage required varies depending on alignment and location. Additional property, beyond the future airside and landside development areas, may be needed to accommodate the acquisition of aliquot parts. Often, acquisition of government property (e.g. Bureau of Land Management) requires that aliquot parts be acquired. Aliquot parts refer to the subdivision of a land section resulting in rectangular parcels, such as a quarter section, one-fourth of a quarter section, half of a quarter section, etc.

B. AIRSIDE DEVELOPMENT ALTERNATIVES

One "No Action" (no build) alternative and three build alternatives are presented for the Jetport. Each of the three build alternatives are defined by a specific scenario including a designated ARC. Within each alternative, a variation of runway alignments is included; these variations are depicted in exhibits. The build alternatives provide options for airfield development. A "preferred airside alternative" may be a blend of two or more alternatives. The following summarizes the airside alternatives:

- Alternative 1 – No Action
- Alternative 2

  - o Runway 10-28 is designated ARC C-III to serve design aircraft B737-400 freighter at less than 150,000 lbs. The runway has instrument approach capability with 3/4-mile visibility minimums.
  - o A new crosswind runway is designated ARC B-II and has an ultimate length of 5,700 feet, alternative runway alignments, and instrument approach with one-mile visibility minimums. The various crosswind runway alignments include:
    - ▪ Crosswind Runway 3-21 (Alternative 2.1)
    - ▪ Crosswind Runway 4-22 (Alternative 2.2)
    - ▪ Crosswind Runway 5-23 (Alternative 2.3)
- Alternative 3
  - o Runway 10-28 is designated ARC C-III to serve corporate jets and air cargo aircraft under 100,000 lbs. and has instrument approach capability with 3/4-mile visibility minimums.
  - o A new crosswind runway is designated ARC C-IV and has an ultimate length of 12,000 feet to serve larger air cargo aircraft needs (similar to El Paso International and the previous plan for the Jetport). The runway has instrument approach capability with 3/4-mile visibility minimums. Various crosswind runway alignments include:
    - ▪ Crosswind Runway 1-19 (Alternative 3.1)
    - ▪ Crosswind Runway 3-21 (Alternative 3.2)
    - ▪ Crosswind Runway 5-23 (Alternative 3.3)
- Alternative 4
  - o Runway 10-28 is designated ARC C-II to serve corporate jets and air cargo aircraft under 60,000 lbs. It maintains instrument approach capability with one-mile visibility minimums.
  - o A new crosswind runway designated ARC C-II with an ultimate length of 6,400 feet and instrument approach with one-mile visibility minimums. Various crosswind runway alignments include:
    - ▪ Crosswind Runway 1-19 (Alternative 4.1)
    - ▪ Crosswind Runway 3-21 (Alternative 4.2)
    - ▪ Crosswind Runway 5-23 (Alternative 4.3)

A more detailed discussion of the airside alternatives follows.

1. AIRSIDE ALTERNATIVE 1 – NO ACTION (NO BUILD)

The No Action Alternative assumes that no additional improvements are made to the Jetport, but existing facilities are maintained, as needed. The No Action Alternative is presented for comparison to the build alternatives and is of continued importance in future environmental evaluations of proposed development. Depicted in **Exhibit 4B**, the No Action Alternative shows existing facilities. While inconsistent with the County's goals for the Jetport and the master planning effort, the No Action serves its purpose in the comparative evaluation process.

2. AIRSIDE ALTERNATIVE 2 – RUNWAY 10-28 UPGRADED TO C-III, AIR CARGO (B737), AND B-II CROSSWIND

In Alternative 2, Runway 10-28 is proposed to serve ARC C-III aircraft with the Boeing 737-400 freighter as the design aircraft. The runway would be maintained at its current length, which can accommodate the B737. However, a request to the FAA for a "modification of standards" is required on the west end where Runway 10's RPZ overlays the road and railroad – considered an incompatible land use per FAA's Interim Land Use guidance published in 2012. If the request is not approved, Runway 10 requires a 600-foot displaced threshold to shift the RPZ to the east and off the road. The portion of the RPZ in question totals 1.84 acres. The RPZ land use guidance is also important to consider in locating future roadways at the Jetport.

Runway 10-28's width is maintained at 100 feet in Alternative 2, but 25-foot wide paved shoulders are added. Pavement strength to serve the design aircraft is less than 150,000 lbs.; preliminary calculations estimate takeoff weight of the B737 freighter is 135,000 lbs. While Airplane Design Group III typically requires a 150-foot wide runway, the FAA permits 100 feet for aircraft with a maximum certificated takeoff weight of 150,000 lbs. or less and approach visibility minimums of not less than 3/4 mile.

The instrument approach visibility minimums would be reduced from one-mile to 3/4-mile to accommodate the ongoing request of airport users. While the region is known for its good flying weather, there are occasions when conditions of poor visibility are disruptive to aircraft operations at the Jetport.

The Alternative 2 scenario defines the Boeing 737-400 freighter as the design aircraft based on the air cargo study (see appendices). The air cargo study discusses several factors stimulating growth in the Santa Teresa area and driving the market for air cargo activity at the

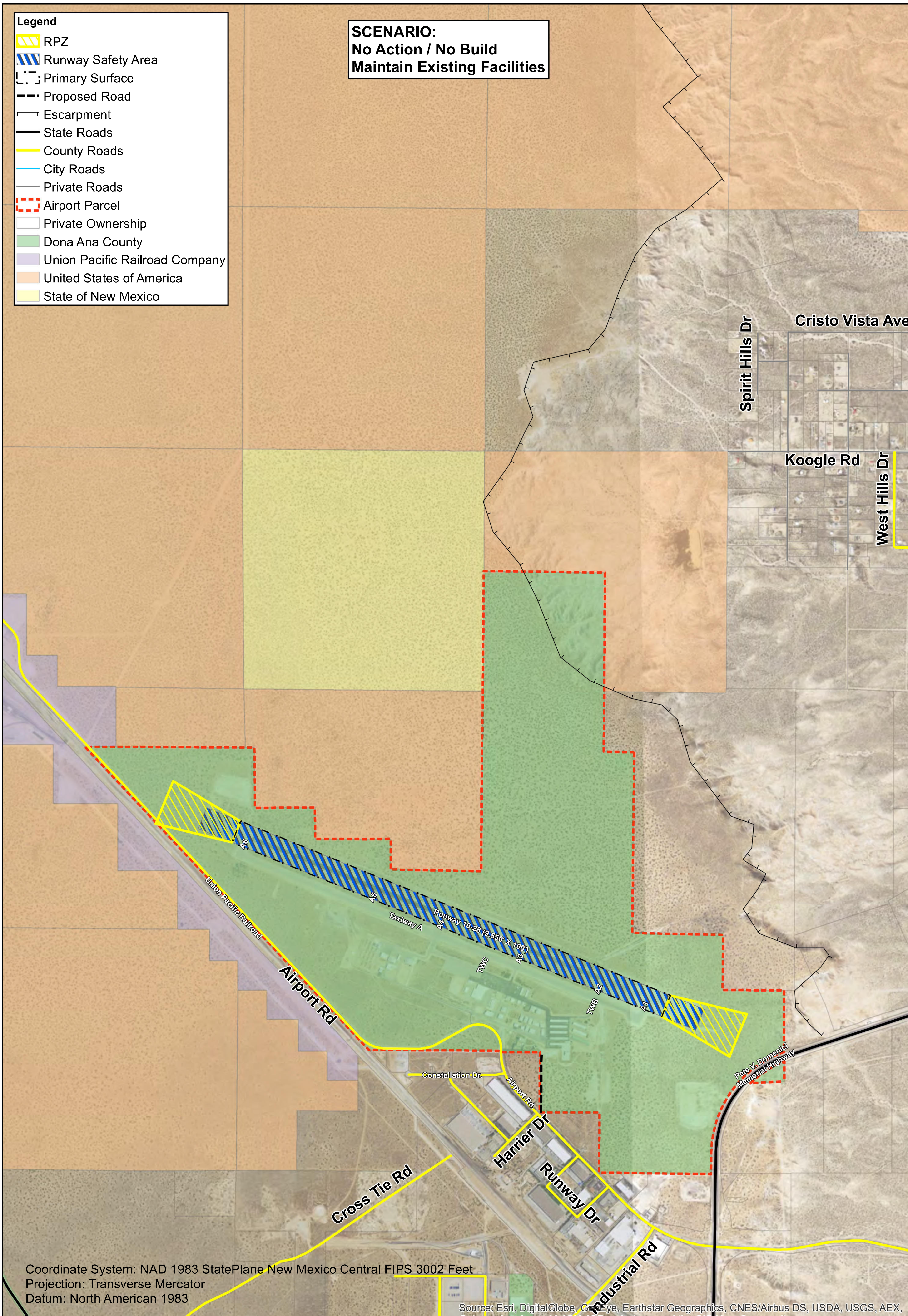

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Exhibit 4B
No Action

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Author: gmaynard

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Jetport. The $400 million Union Pacific Railroad terminal facility recently completed adjacent to the Jetport is one factor since serves as a major transshipment hub for container shipments. Although rail freight is typically unrelated and not transferrable to air cargo shipments, the new rail facility is spurring overall growth in the area. Further, future growth is expected to occur in and around the Santa Teresa/Sunland Park area since available land for development within the El Paso city limits is diminishing.

The Santa Teresa Port of Entry (POE), which is a less congested alternative for border traffic, also makes a strong case for future growth in the Santa Teresa area. The air cargo report notes that future development plans in the area call for industrial, residential, commercial, and solar-energy land uses. As the area grows, the air cargo market potential for the Jetport will increase as well. In addition to this “big picture” market assessment for area growth and air cargo potential is the actual demand that is evident today. Foxconn, one of the largest maquilas in the region, assembles electronics for major technology firms. Frequent and substantial shipments of raw materials are being trucked from LAX to the Foxconn plant in Juarez, Mexico; Foxconn could reap time and cost savings by using air transport instead of truck transport. Foxconn has offered to write a letter of support for air cargo-related development at the Jetport and would outline the benefits air cargo capability would provide to the company. The air cargo report states that raw materials bound for the Foxconn plant are currently “…flown into LAX from China, offloaded for customs clearance, and then trucked the 800-plus miles to the San Jerónimo, Mexico plant via Interstate 10. Raw materials include physical computer components such as chips, hard drives, processors, graphic cards, motherboards, memory, fans, and frames.” All production at Foxconn’s current Juárez location will eventually be moved to the San Jerónimo location along the border south of Santa Teresa, and that facility will be expanded to accommodate the relocation and future growth. Foxconn points out that centralizing production will help exploit economies of scale for logistics, employee transport, and dining services.

On the other hand, while Foxconn activity indicates demand for B737-400 air cargo service, El Paso International Airport (ELP) has a well-established, state-of-the-art air cargo facility with excess capacity and expansion capability to accommodate any air cargo needs in the region. Despite the convenience of the Jetport to Foxconn and other area businesses, the argument can be made that ELP’s $60 million facility offers everything necessary today. In contrast, the Jetport requires specific improvements before serving the B737-400.

Still, air cargo serves the high value, time-sensitive transport needs of industry so location convenience to serve a high volume of activity at a faster rate may outweigh the benefits of ELP for a company like Foxconn. Consequently, air cargo demand in the El Paso area may be served well by both ELP and the Jetport, not to mention other airports in the region. In fact, the air cargo study points out several examples around the country of two-airport air cargo markets in metropolitan areas including Detroit, Columbus, Sacramento, and Seattle.

Air cargo activity by aircraft smaller than the B737 can be accommodated now at the Jetport. JH Rose Logistics stated in an interview documented in the air cargo study that there is strong demand for regional air cargo service today between the Jetport and two Mexico destinations -- Chihuahua and Hermosillo. In addition, the firm identified potential demand between the Jetport and Torreón, Coahuila. JH Rose Logistics is a third-party logistics firm located in the Santa Teresa Industrial Park with a 70,000-square foot warehouse and distribution center. Representatives of the firm pointed out that they were involved in the former Nordstar air cargo services operated in the mid-2000s at Santa Teresa and have knowledge about the regional air cargo service market based on an air cargo study they conducted. The potential for regional air cargo service identified by JH Rose Logistics has also been noted by other area businesses. While the type of aircraft is much less demanding operationally than the B737, anticipation of this activity was considered in the airside alternatives and the selection of a preferred alternative.

Alternative 2 also proposes to construct an ultimate crosswind runway to ARC B-II design standards. This translates to a 75-foot wide runway at 5,700 feet in length. However, it might be more financially feasible to construct the crosswind in two phases with the first/interim length constructed to 4,100 feet, which would serve the ARC B-I family of aircraft.

The approximate cost for Alternative 2 is $18.37 million, including $13.83 million for the proposed Runway 10-28 improvements and $4.54 million for the new crosswind runway.

A crosswind runway is a high priority need at the Jetport to enhance the safety of aircraft operations during crosswind conditions. Alternative 2 includes three different crosswind runway alignments, called Alternatives 2.1, 2.2, and 2.3. Introduced for discussion purposes in Alternative 2.1 are two options for the crosswind runway location.

Alternative 2.1 – Crosswind Runway 3-21 Alignment: **Exhibit 4C** illustrates this northeast-southwest alignment at its 5,700-foot length. The interim 4,100-foot length is depicted in a different color within the footprint of the 5,700-foot runway to show a possible first phase of development. The crosswind runway is placed to ensure its runway safety

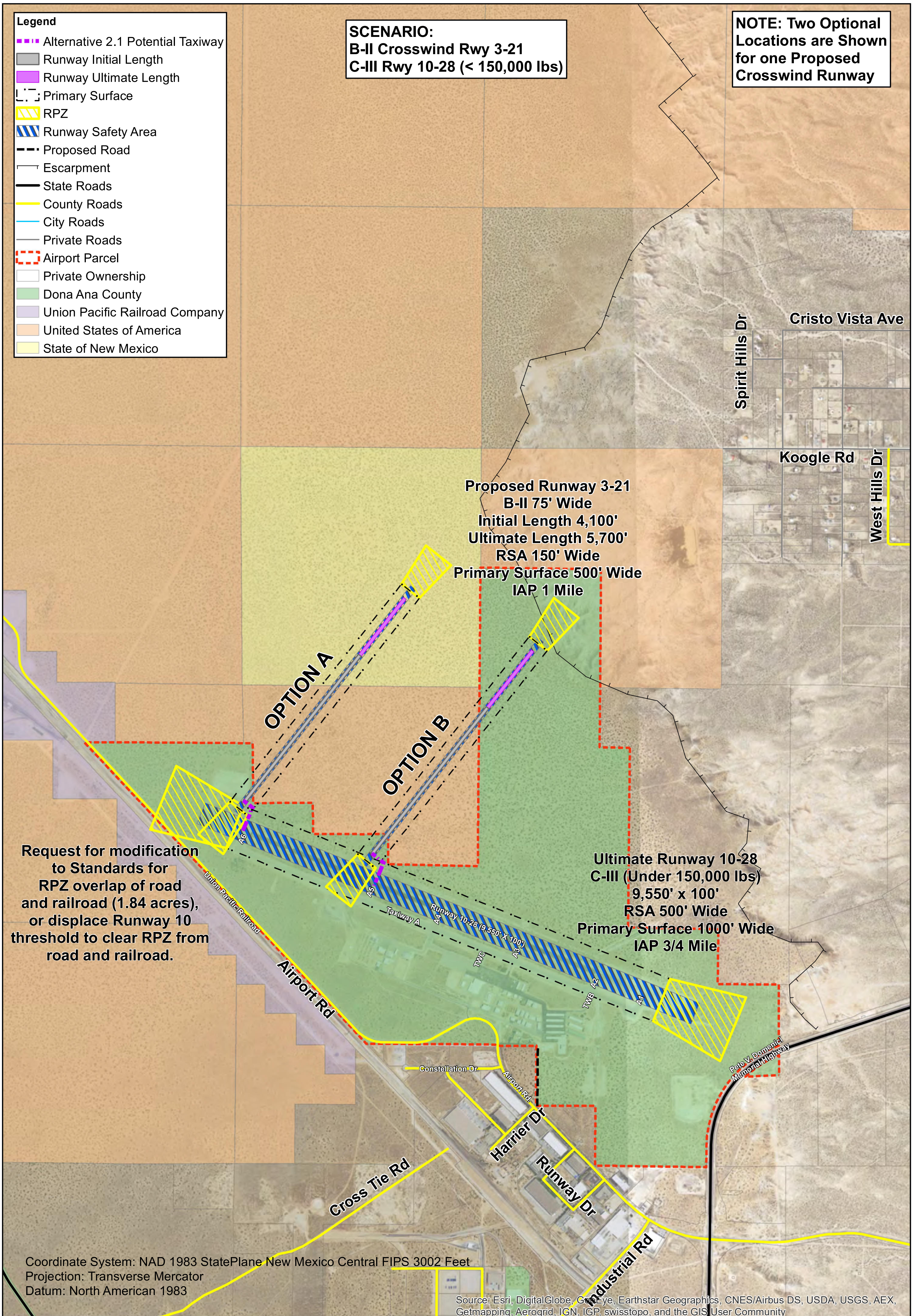

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Exhibit 4C
Alternative 2.1

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area (RSA) at the south end is clear of Runway 10-28's RSA (no overlap), and to avoid the escarpment at the north end. These constraints limit the crosswind runway's length to its proposed 5,700 feet. There is overlap in the primary surface (protected airspace around each runway), but this is typical and taxiing aircraft would hold clear of active runways. As noted in Chapter Three, the Runway 3-21 alignment provides better wind coverage than Runway 10-28, and combined, these two runways provide 99.16% wind coverage for the B-II aircraft fleet (13 knots).

- **Option A** location: The runway is placed at the far west end of the airfield to open a large contiguous parcel for landside development. This option has the longest taxi time for the small GA users at the east end of the building area. Part of the runway footprint (103 acres) extends beyond the airport property line onto land that is half owned by the federal Bureau of Land Management (BLM) and half owned by the New Mexico State Land Office (SLO).
- **Option B** location: The south runway end is closer to the FBO than in Option A. The runway is placed to clear the escarpment and the runway safety area for Runway 10-28. This location reduces taxi time for the small GA aircraft compared to Option A. More than half of the proposed runway lies on BLM land with the remainder contained within the airport property boundary. An estimated 57 acres of BLM land is impacted by the proposed crosswind runway. No SLO land is required under this option.

Alternative 2.2 – Crosswind Runway 4-22 Alignment: This alternative, shown in **Exhibit 4D**, is like Alternative 2.1, but illustrates the slight shift in alignment by 10 degrees, which improves the wind coverage for this individual runway. For this Runway 4-22 alignment, the interim 4,100-foot and ultimate 5,700-foot lengths are shown, and the runway safety area (RSA) for each runway remains clear of the other. The location depicted for Runway 4-22 remains clear of the escarpment and Runway 10-28, but a shift east or west would impact these clearances. Off-airport property impacted by the proposed crosswind runway footprint is approximately 29 acres with an estimated 80 percent on private property and 20 percent on federal land. However, most the crosswind runway is on existing airport property.

Alternative 2.3 – Crosswind Runway 5-23 Alignment: **Exhibit 4E** illustrates a Runway 5-23 alignment representing a 20-degree rotation from Alternative 2.1 and a 10-degree rotation from Alternative 2.2. As shown, this rotates the crosswind runway slightly clockwise. The wind analysis indicates that Runway 5-23 offers slightly better coverage than Runway 3-21, but slightly less coverage than Runway 4-22. The property available for development between Runway 10-28 and proposed Runway 5-23 is less compared to the previous alignments. Development on the north side of Runway 5-23 is possible, although more distant and isolated from the other landside facilities.

3. Airside Alternative 3 – Runway 10-28 upgrade to C-III for Corporate GA (aircraft less than 100,000 lbs.), and C-IV Crosswind Runway (for major air cargo activity)

In Alternative 3, existing Runway 10-28 is upgraded to C-III like Alternative 2, but Alternative 3 assumes that the most demanding family of aircraft using the runway would be corporate jets and air cargo aircraft less than 100,000 lbs. This contrasts with the B737 scenario of Alternative 2, but reduces the cost of Runway 10-28 improvements if the PAC and County believe the Foxconn air cargo scenario is not feasible within the planning period. As discussed earlier in the study, forecasts of aviation demand support C-II aircraft operations for the 10-year planning period. However, there are some limited operations by Airplane Design Group (ADG) III today. Future growth in corporate GA activity and the anticipated ad hoc air cargo activity would benefit from the C-III designation and proposed pavement strengthening. Also, this alternative assumes that the proposed secondary runway at its ultimate length for major air cargo activity would be in the distant future. An initial runway length of 5,700 feet would be constructed to meet the near-term B-II needs for crosswind coverage. In the meantime, existing Runway 10-28 would be improved to serve air cargo and heavy corporate business jet demand. Ultimately, the crosswind runway would be designated as a C-IV runway with an ultimate length of 12,000 feet to serve larger air cargo aircraft needs –the same length that El Paso International presently has for air cargo aircraft. The previous plan for the Jetport also depicted a 12,000-foot crosswind to protect for long-term air cargo traffic. The runway would ultimately have a precision instrument approach with 3/4-mile visibility minimums.

Although the air cargo study recommends the B737 as the design aircraft to accommodate the market demand associated with Foxconn and related border business, the study points out that wide body aircraft with greater cargo capacity and longer haul capability are also commonly used. Consequently, Alternative 3’s scenario assumes that Runway 10-28’s inability to be extended could limit the long-term potential for more air cargo at the Jetport by aircraft that require more than 9,550 of length offered at the Jetport today.

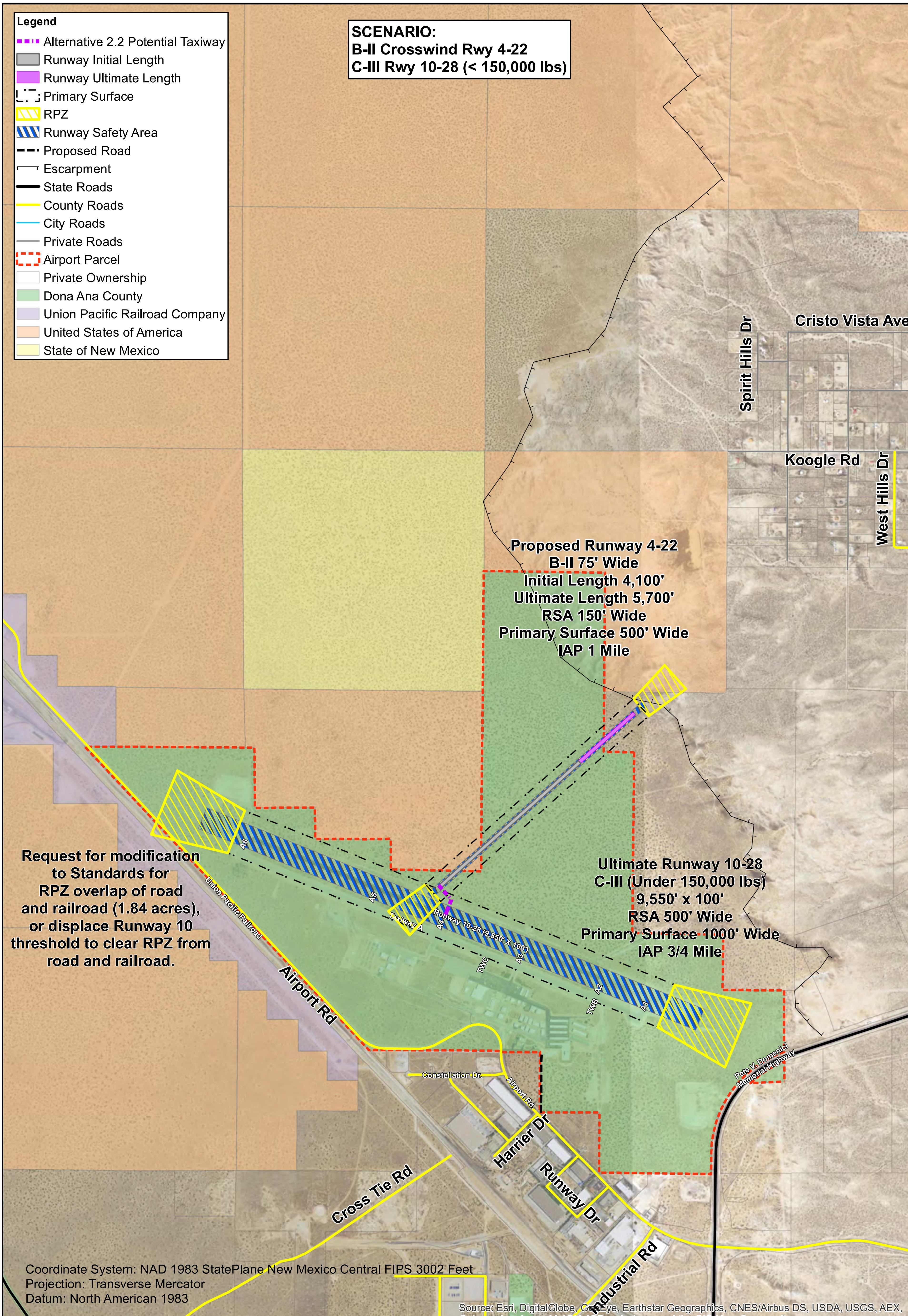

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Exhibit 4D
Alternative 2.2

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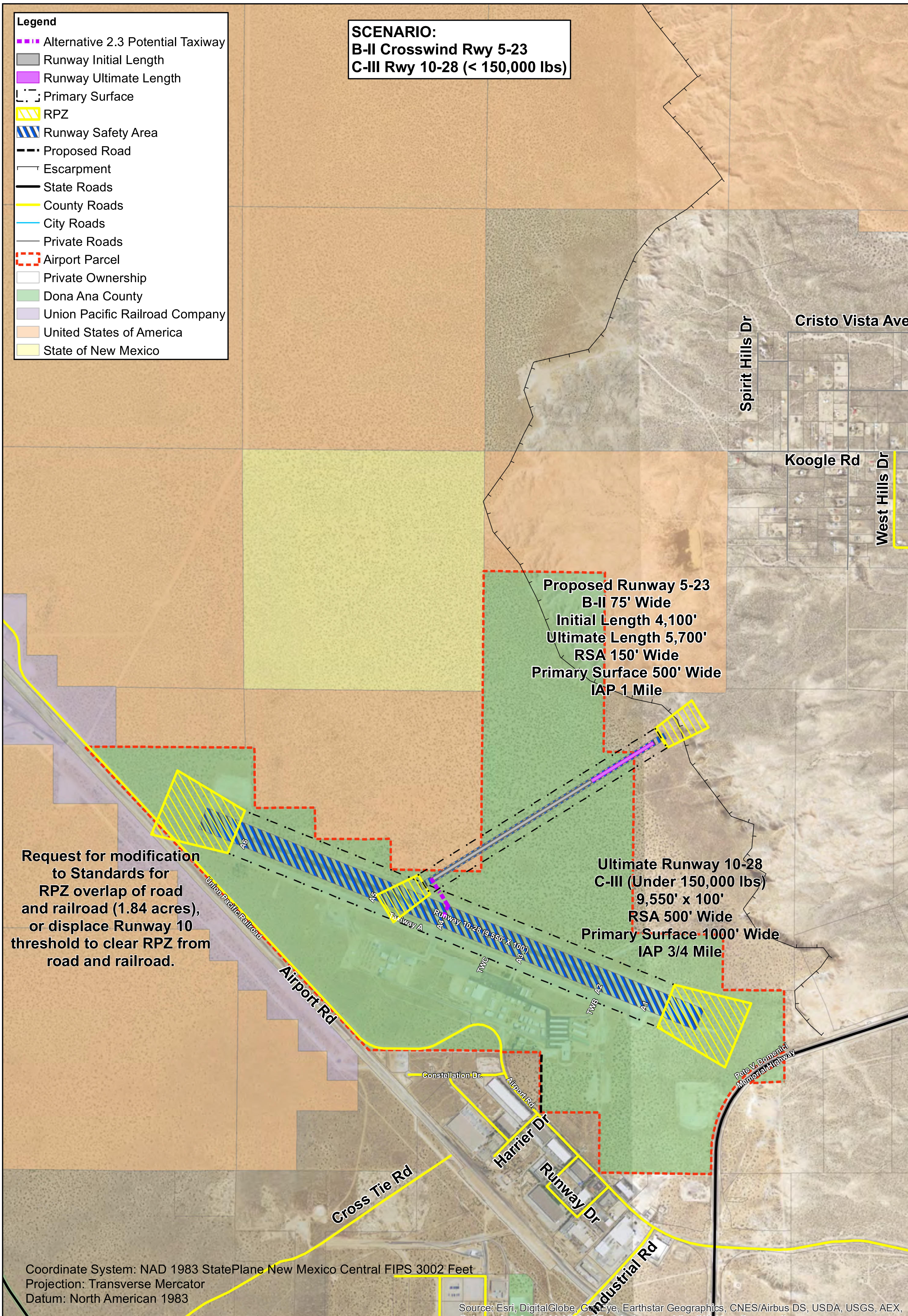

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Doña Ana County
International Jetport
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Exhibit 4E
Alternative 2.3

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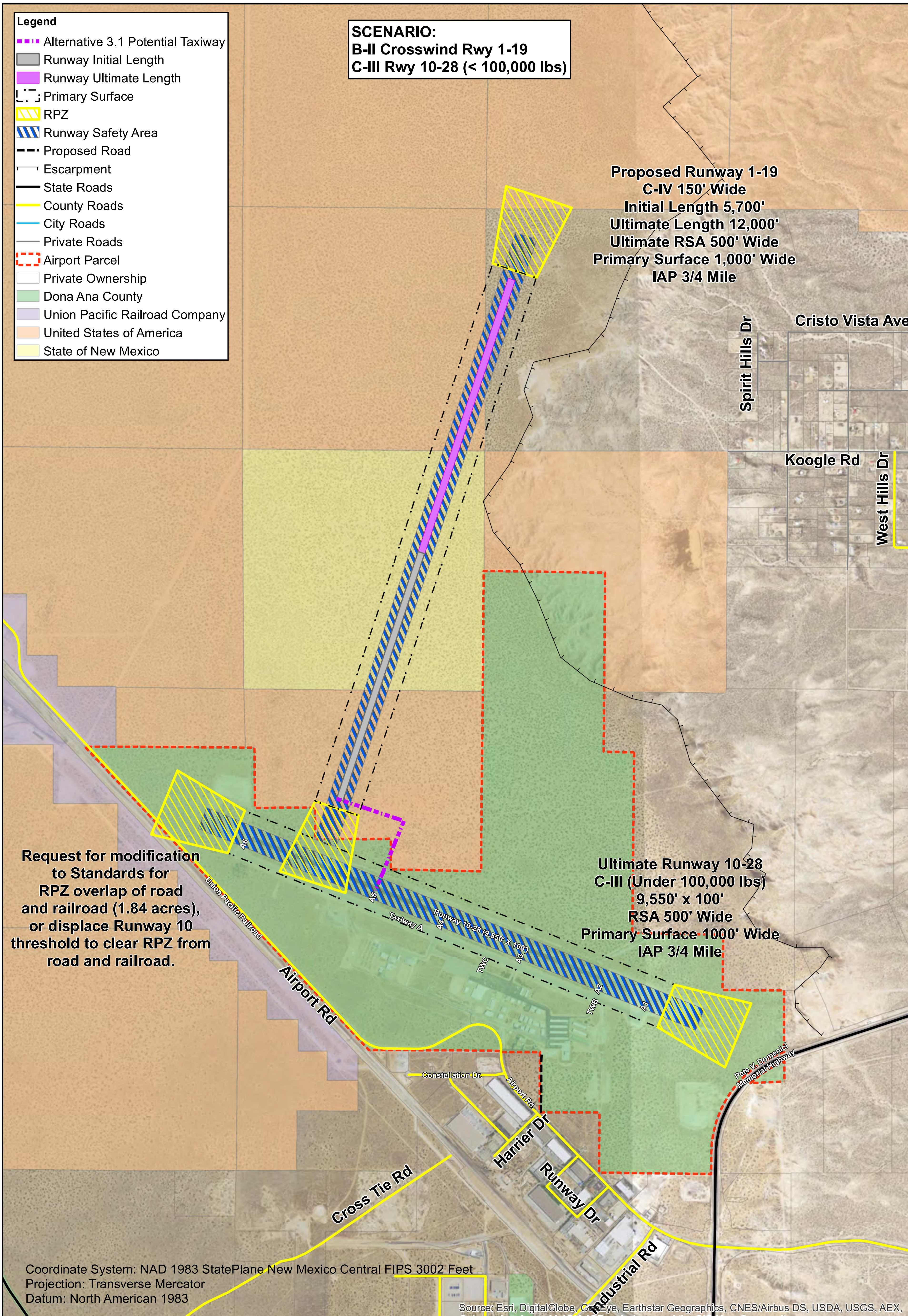

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Exhibit 4F
Alternative 3.1

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September 2016

The approximate cost for Alternative 3's proposed Runway 10-28 improvements is estimated at $11.7 million. The proposed C-IV crosswind runway development is estimated at $29.73 million.

Alternative 3.1 – Crosswind Runway 1-19 Alignment: This alternative is depicted in **Exhibit 4F,** which shows Runway 1-19 with an initial length of 5,700 feet to serve the needs of the smaller GA aircraft until demand supports the need for the ultimate 12,000-foot air cargo runway. While this concept seemed viable in the past, pilot input and more reliable wind data clearly indicate that a Runway 1-19 alignment provides poor wind coverage. According to the wind analyses, Runway 1-19 at 13 knots provides 92.1% coverage. Combined with Runway 10-28, total coverage reaches 96.56%, which is less than the other crosswind runway alignments considered (i.e. 3-21, 4-22, and 5-23). Nevertheless, the Runway 1-19 alignment takes advantage of the large area of undeveloped north-south property that remains clear of the escarpment, but allows the south end of the runway to be near the FBO and other existing landside facilities. Property acquisition would be required for the proposed 12,000-foot. A minimum of 464 acres is needed to accommodate the runway footprint, without consideration of landside development or a need to acquire federal land in aliquot parcels. This land acquisition consists of an estimated 20% private property, 40% federal and 40% state.

Alternative 3.2 – Crosswind Runway 3-21 Alignment: **Exhibit 4G** illustrates the Runway 3-21 optional alignment for the long-term 12,000-foot runway. This combination of length and alignment dictates that the south end of the proposed runway be located west of existing Runway 10-28, but it remains near Runway 10. Like Alternative 3.1, this alternative requires an estimated 464 acres to accommodate the footprint of the runway, which overlays federal, state and private property. In contrast to the Runway 1-19 alignment, Runway 3-21 offers better wind coverage at 96.69% for individual coverage, and over 99% when combined with Runway 10-28. The tradeoff for better wind coverage with the 3-21 alignment is the increased taxi time from existing facilities at the Jetport.

Alternative 3.3 – Crosswind Runway 5-23 Alignment: A Runway 5-23 alignment in this alternative requires a substantial swing of the south runway end to the west. As shown in **Exhibit 4H**, this significantly increases the taxi time -- the farthest taxi distance among the alternatives. The escarpment limits the options for locating a

12,000-foot long runway on this alignment. Further, Runway 5-23 offers less combined wind coverage with Runway 10-28 than the Runway 3-21 alignment--98.7% versus 99.16%. Locating a secondary runway so far from the existing airfield and facilities also presents other challenges for emergency access and support services. For this configuration, some facilities and services might require duplication, or relocation to a more central area to serve both runways. Alternative 3.3 also has a greater off-airport property footprint that totals 489 acres, with an estimated 50% on federal land, 40% on private, and 10% on state land.

4. AIRSIDE ALTERNATIVE 4 – C-II CROSSWIND AND C-II RUNWAY 10-28

Alternative 4 proposes to maintain ARC C-II standards on both the existing and the proposed crosswind runways. The C-II designation serves existing and forecast aviation demand and the critical corporate jet family of aircraft. Ad hoc air cargo demand could also be accommodated in aircraft smaller than the B737. Runway 10-28 would be strengthened from its current 20,000 lbs. to 60,000 lbs. This scenario assumes that Foxconn would continue using ground transport from LAX or pursue other transport options.

Runway 10-28's existing instrument approach with one-mile visibility minimums would be maintained. This approach requires a smaller primary surface width of 500 feet and a smaller RPZ in comparison to the alternatives with 3/4-mile visibility minimums. The RPZ on each runway end would have an inner width of 500 feet, a length of 1,700 feet, and an outer width of 1,010 feet.

Consequently, a smaller segment of the RPZ would overlay the road and railroad at the west end—an area limited to 0.44 acres. This improves the County's FAA-approval chances for a modification of standards.

The C-II crosswind runway dimensions are 6,400 feet long by 100 feet wide. Although not depicted on the Alternative 4 exhibits, the runway could be initially constructed to an interim length of 4,100 or 5,700 feet if phasing is more financially feasible. The proposed instrument approach visibility minimums would be one mile, so the primary surface would be 500 feet wide.

The cost for Alternative 4 is estimated at $14.72 million. This includes $8.53 million for Runway 10-28 pavement reconstruction and strengthening as well as markings, lighting, and NAVAIDS. The proposed C-II crosswind runway is estimated at $6.19 million including the cost of the land acquisition process for the federally-owned and state-owned property.

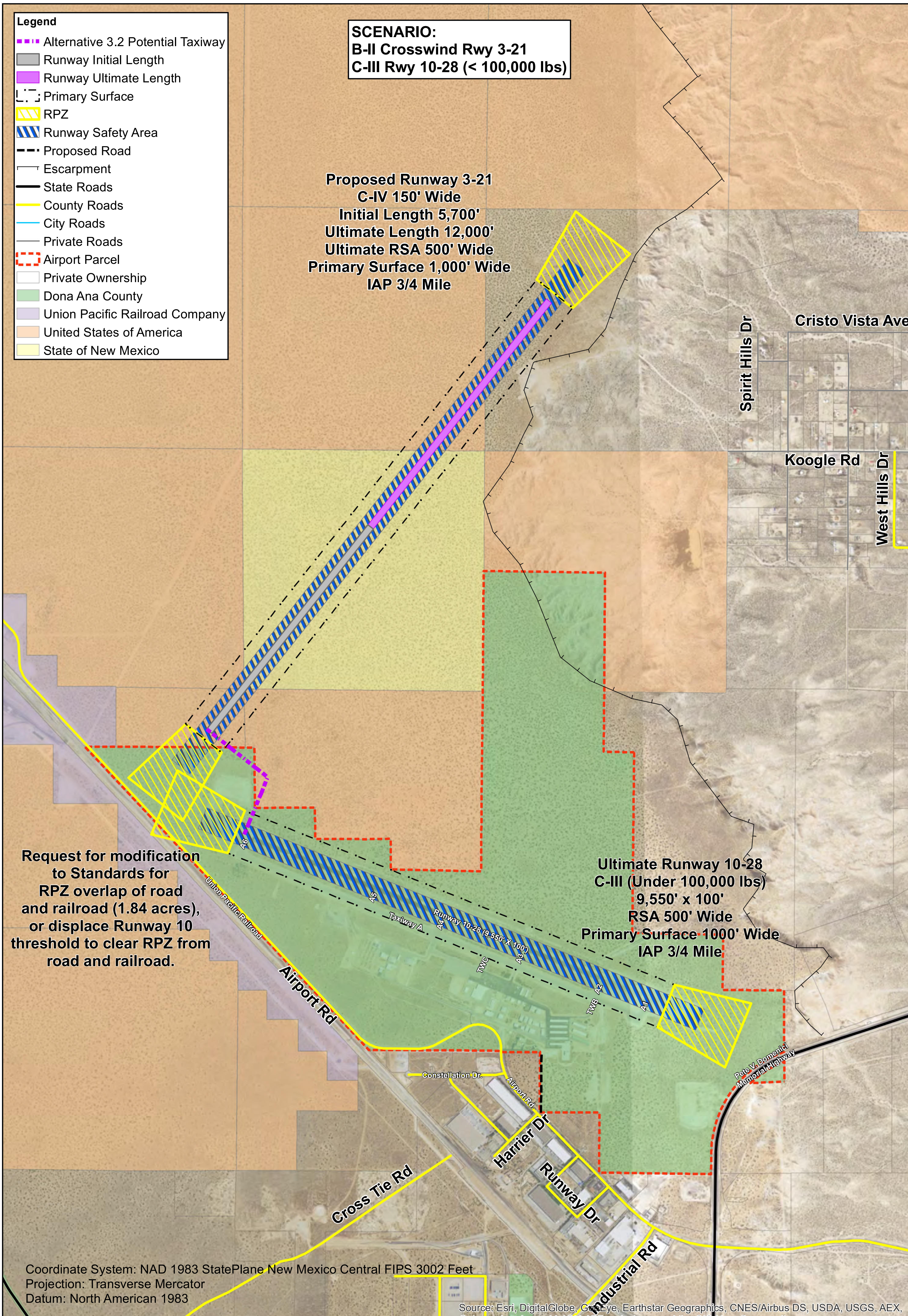

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Exhibit 4G
Alternative 3.2

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Author: gmaynard

September 2016

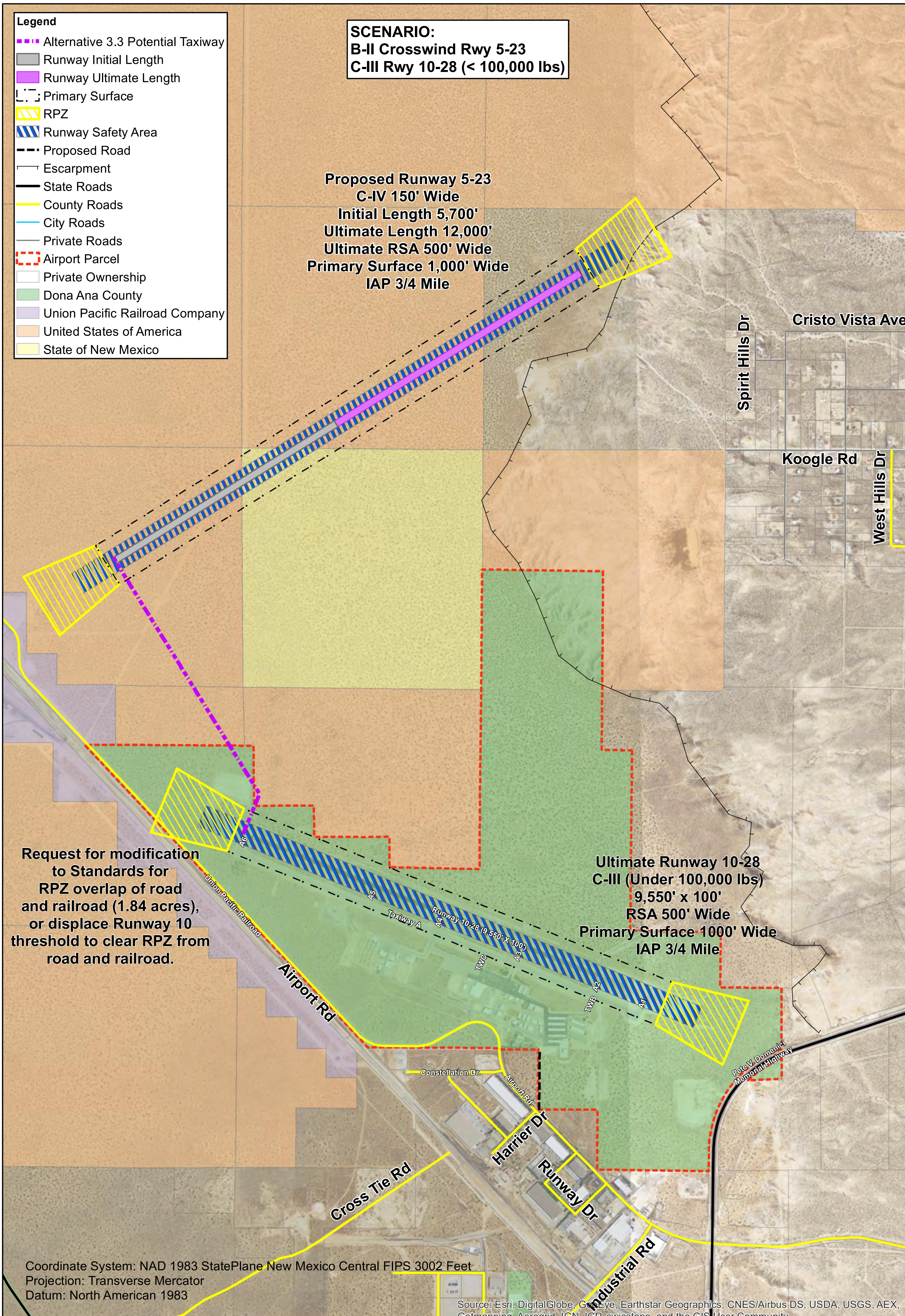

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Exhibit 4H

Alternative 3.3

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Author: gmaynard

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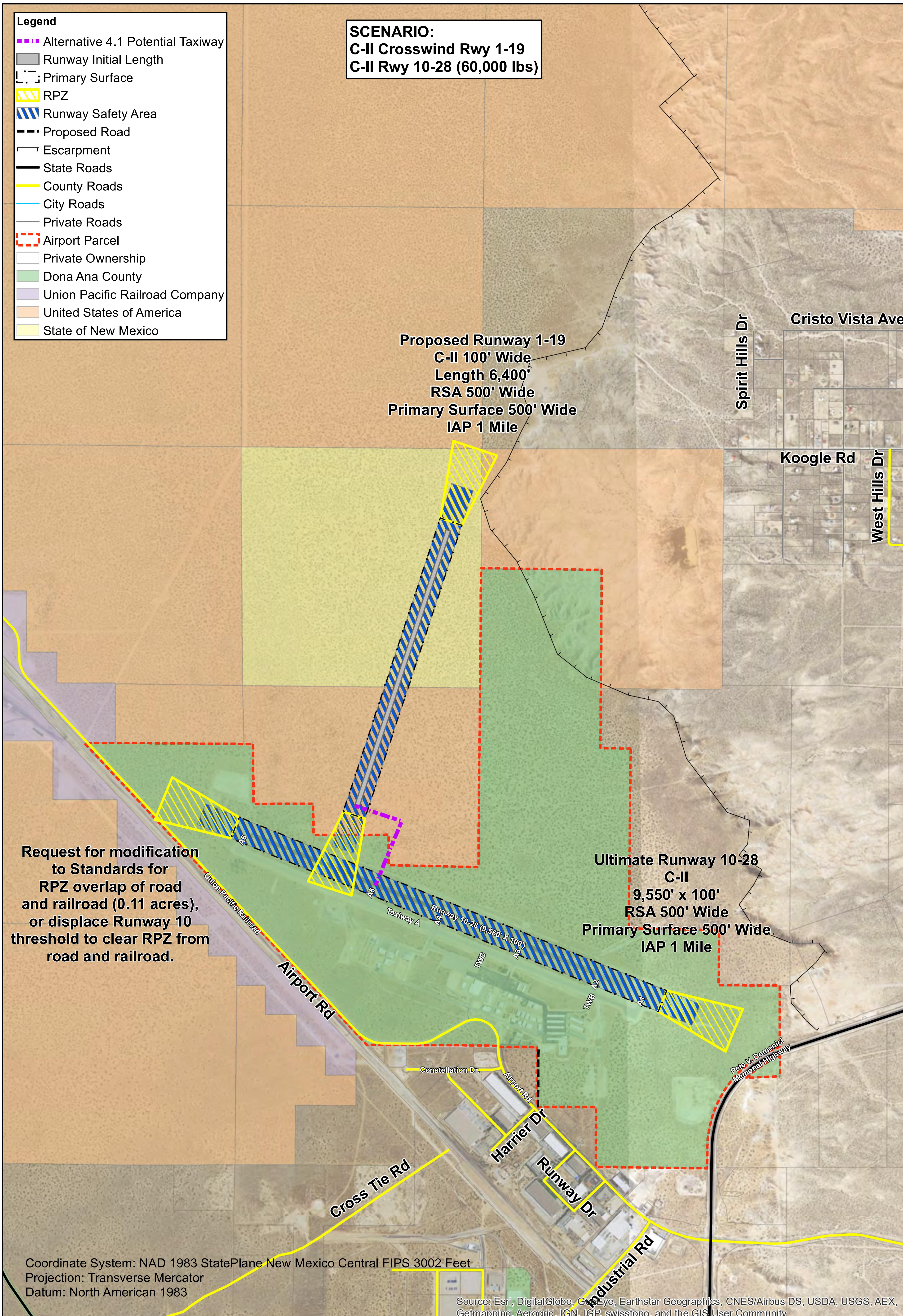

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Doña Ana County
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Exhibit 4I
Alternative 4.1

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Author: gmaynard

September 2016

Property impacted by the proposed crosswind footprint for each of the crosswind alignments in Alternative 4 ranges from 158 to 187 acres.

Alternative 4.1 – Crosswind Runway 1-19 Alignment: **Exhibit 4I** illustrates the proposed Runway 1-19 alignment. Runway 1-19 is placed approximately 2,000 feet from the west end of Runway 10-28 with a connecting taxiway between the two runway systems similar to other alternatives. The runway system footprint for this C-II Runway1-19 alignment lies outside the existing airport property except for the south RPZ where it overlays Runway 10-28. An estimated 187 acres of federal and state property is impacted—approximately 45% federal and 55% state. As noted in Alternative 3.1, which also includes a Runway 3-21 alignment, the wind coverage is inadequate, but the runway can be moved closer to the existing landside facilities than some other alignments. Further, the 1-19 alignment location is closer to the Jetport's large undeveloped property that runs north-south, which could include future landside facilities better aligned for a flight line area.

Alternative 4.2 – Crosswind Runway 3-21 Alignment: With the Runway 3-21 alignment, the south end of the runway would be located adjacent to the west end of Runway 10-28. **Exhibit 4J** illustrates the alignment. While the wind coverage improves over the Runway 1-19 alignment, the runway is farther from existing facilities and the Jetport's existing undeveloped property that runs north-south. The runway location is driven by the escarpment to the north. Off-airport property impacted by the Runway 3-21 footprint is an estimated 187 acres like Alternative 4.1, with approximately one-fourth of that federally-owned and three-fourths state-owned land.

Alternative 4.3 – Crosswind Runway 5-23 Alignment: **Exhibit 4K** illustrates the proposed Runway 5-23 alignment. The 6400-foot runway fits within the escarpment and the approach end of Runway 10. An estimated 158 acres would need acquisition, of which half is federal land and half is state land. This alignment provides slightly better wind coverage than Runway 3-21, but when combined with Runway 10-28, the coverage is slightly less than the combined coverage that Runway 3-21 has with Runway 10-28.

IV. COMPARATIVE EVALUATION OF AIRSIDE ALTERNATIVES

A working paper addressing the airside alternatives was submitted to the PAC for review, and then a comparative evaluation of the various airside alternatives was conducted with the PAC during a work session held on September 28, 2016. Key features of each alternative that were discussed include the following:

- ARC, such as B-II, C-II, C-III, and C-IV
- Pavement strength – 60,000 lbs. (60K) and up
- Instrument approach visibility minimums – 1-mile or ¾-mile
- Primary surface width – 500 or 1,000 feet
- RPZ dimensions – inner width, length, and outer width of the trapezoidal shape
- RPZ Land Use – incompatible land use for Runway 10-28
- Crosswind runway alignment – 1-19, 3-21, 4-22, or 5-23
- Off-airport property impact - ranging from 29 to 489 acres
- Wind coverage – varies from the lowest coverage for Runway 10-28 to the highest for Crosswind Runway 5-23
- Cost Estimate – preliminary planning-level estimates for Runway 10-28 improvements and crosswind runway development

Apart from cost, these features were covered in Chapter Three, Requirements, to prepare the PAC for the evaluation of the alternatives.

At the September 28 meeting, the PAC evaluated the various airside alternatives using criteria such as functionality, flexibility, expandability, timely phasing, property requirements, financial feasibility, and user and community acceptance. While some evaluation factors were quantitatively measured, others were subjective and required discussion among the PAC members before they selected a preferred alternative to recommend to the County.

A. WIND COVERAGE

Exhibit 4L provides a visual comparison of the various runway alignments. As shown, the existing Runway 10-28 wind coverage is less than 90%, which is not surprising to the pilots who have claimed the wind coverage is inadequate. The closer to 100%, the better the coverage is for airport operations. FAA supports the planning and development of a crosswind runway when the wind coverage of existing runway(s)is less than 95%. Five crosswind runway

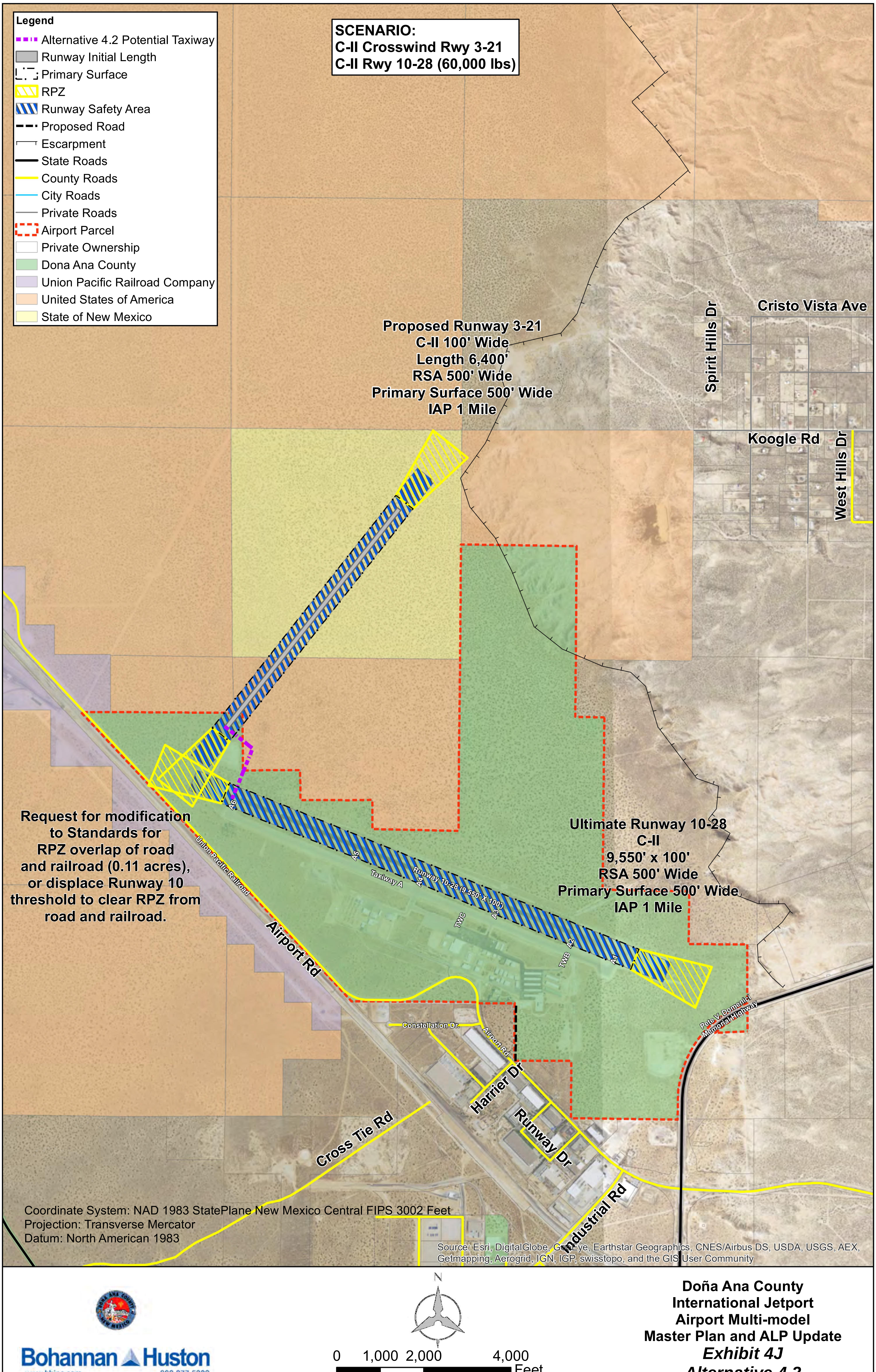

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Exhibit 4J

Alternative 4.2

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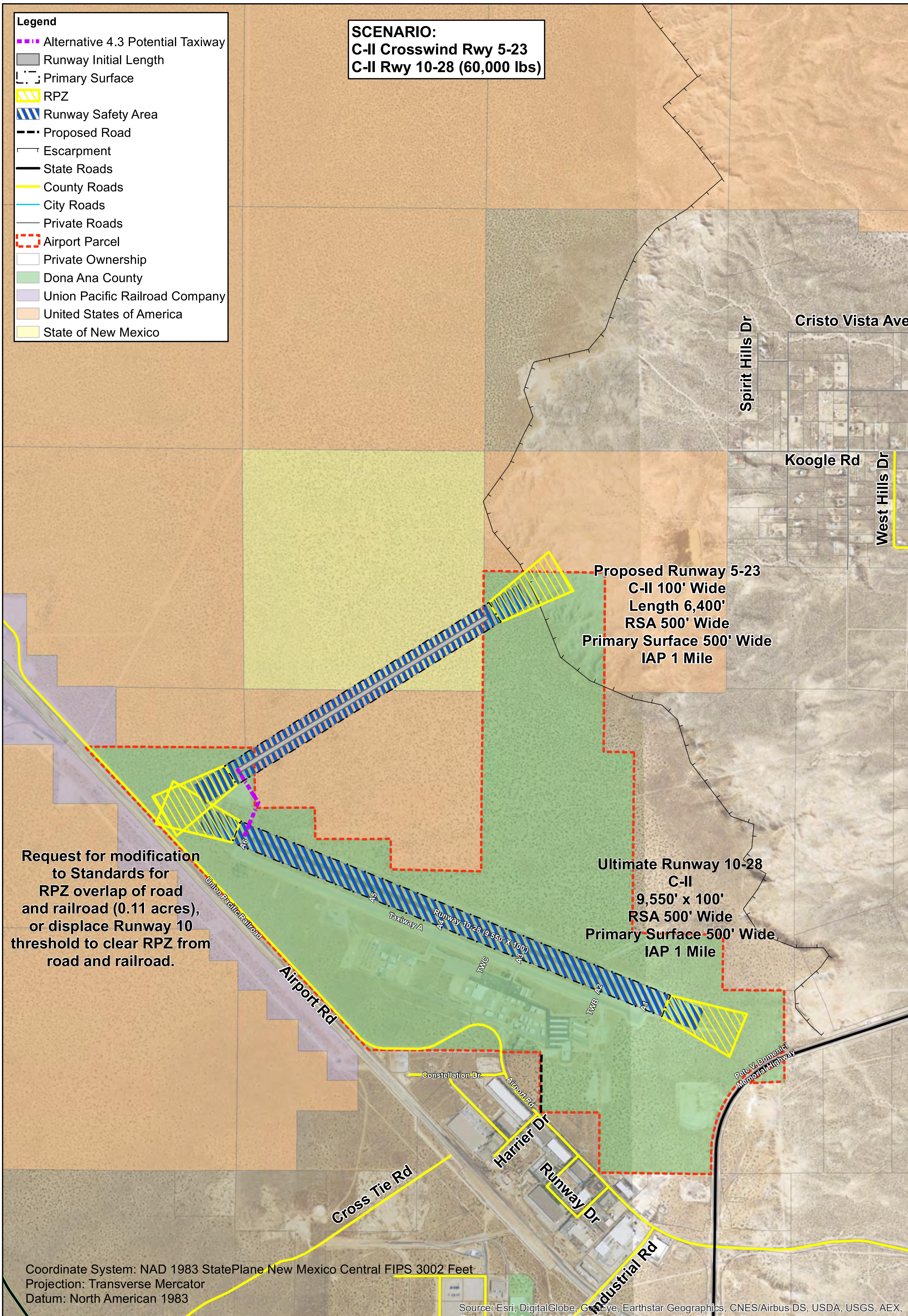

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Exhibit 4K
Alternative 4.3

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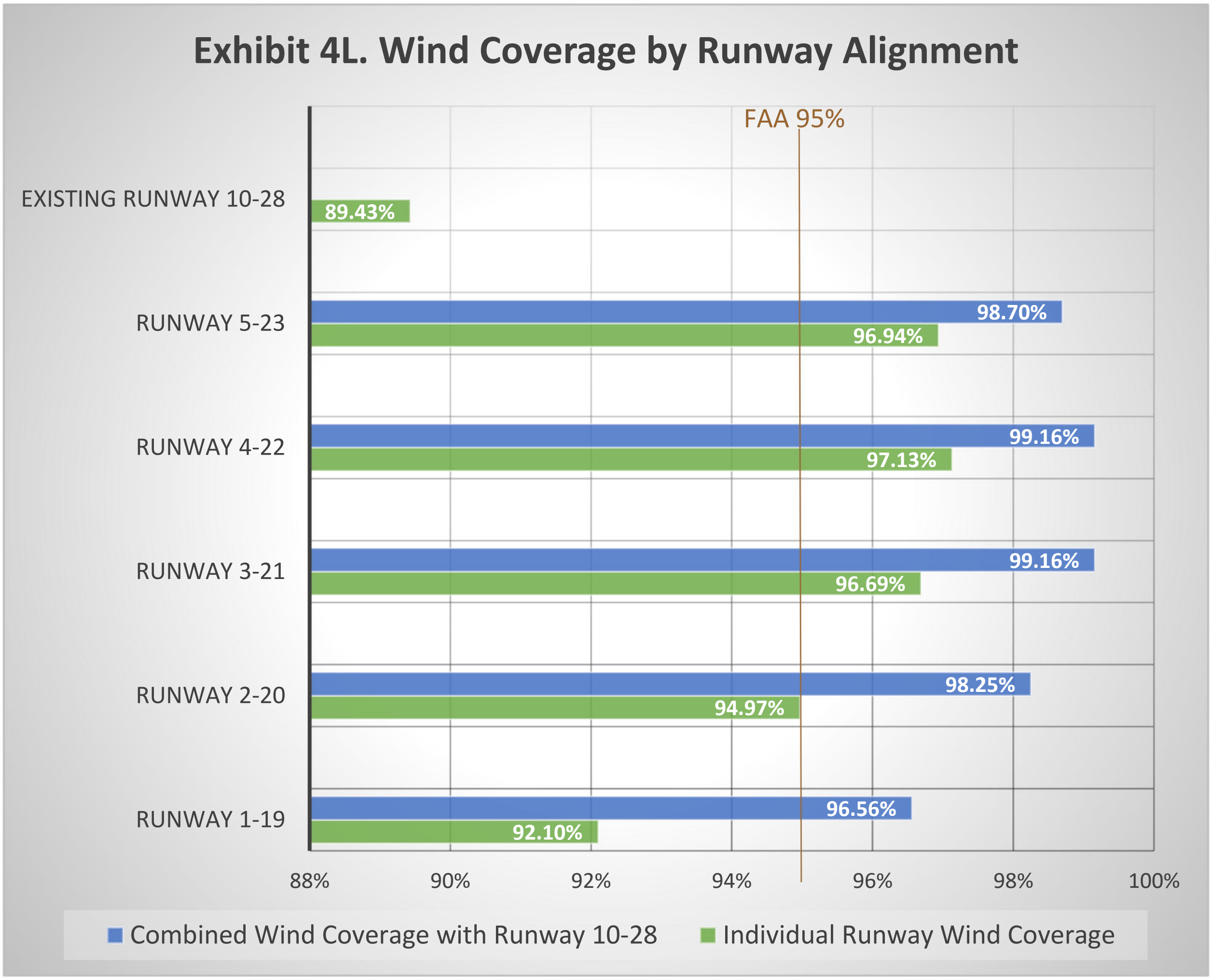
Author: gmaynard

September 2016

alignments were included in the wind analyses to determine which runway alignment provides the best wind coverage. The green bar on the exhibit represents the wind coverage for each individual runway and the blue bar represents the total combined wind coverage of Runway 10-28 and each proposed crosswind alignment.

Runway 1-19 coverage compares poorly to the other proposed runway alignments, but is included because 1-19 is the proposed crosswind runway alignment on the Jetport's most recent ALP drawing. While Runway 1-19 is a better alignment within the physical constraints of the airport environment, pilots have indicated that more reliable wind data was needed to show the Runway 1-19 alignment was inadequate. The recently-collected Afton weather station wind data clearly supports the pilots' assertion. The Afton weather station is located 18 miles north-northwest of the Jetport and belongs to the Doña Ana County Flood Commission.

As noted earlier, the Afton data is limited to two years and not the 10 years recommended by the FAA. In the absence of local wind data during the previous planning study, consulting data from the El Paso and Las Cruces weather stations was the best option. Clearly, the 10 years of El Paso data in the last plan does not offer the same reliability of wind conditions that the Afton station's two years of data does since the proximity of Afton to the Jetport and the area topography is more representative of the Jetport than ELP. The County plans to continue its wind data collection efforts from the Afton station to validate the need for the proper crosswind runway alignment. In addition, a new certified AWOS III was recently installed, which is an FAA-approved weather observing system. The new AWOS data will be collected over time for future review and comparison to the Afton station data.



Source: Doña Ana County Flood Commission Afton Station Wind Data, June 18, 2014- May 31, 2016

B. ASSOCIATED COST

Planning-level cost estimates were prepared for each of the build alternatives. These are rough order-of-magnitude costs and not construction estimates due to the lack of information about existing conditions and design information. In addition, costs of taxiways, which could differ substantially among the alternatives are excluded. In addition to the challenges of funding construction, building a new runway would take years for planning, environmental evaluation, land acquisition, and design.

The No Action Alternative has the least associated cost as it represents a scenario where no new development takes place and existing facilities are maintained. Therefore, the cost comparison focuses on the build alternatives.

To recap, pavement strengthening on Runway 10-28 is needed in the near-term, but the amount of strengthening was part of the alternatives analysis. A minimum pavement strength of 60,000 lbs., estimated to cost $8.53 million, is needed to accommodate the 10-year planning period for corporate GA. However, this excludes the air cargo study findings for potential near-term B737 freighter activity, which requires an estimated 135,000 lbs. pavement strength estimated to cost $13.83 million--$5.3 million more than the minimum 60,000 lbs. strength. The previous plan recommended a pavement strength of 95,000 lbs. on Runway 10-28 to serve the growing jet traffic. Although the traffic needing the 95,000 lbs. makes up less than 500 operations annually in the 10-year forecast, this activity is anticipated to continue increasing in the long-term. Runway 10-28 pavement strengthening to 95,000 lbs. is estimated at $11.7 million--$2.1 million less than the B737 pavement strength requirement of 135,000 lbs.

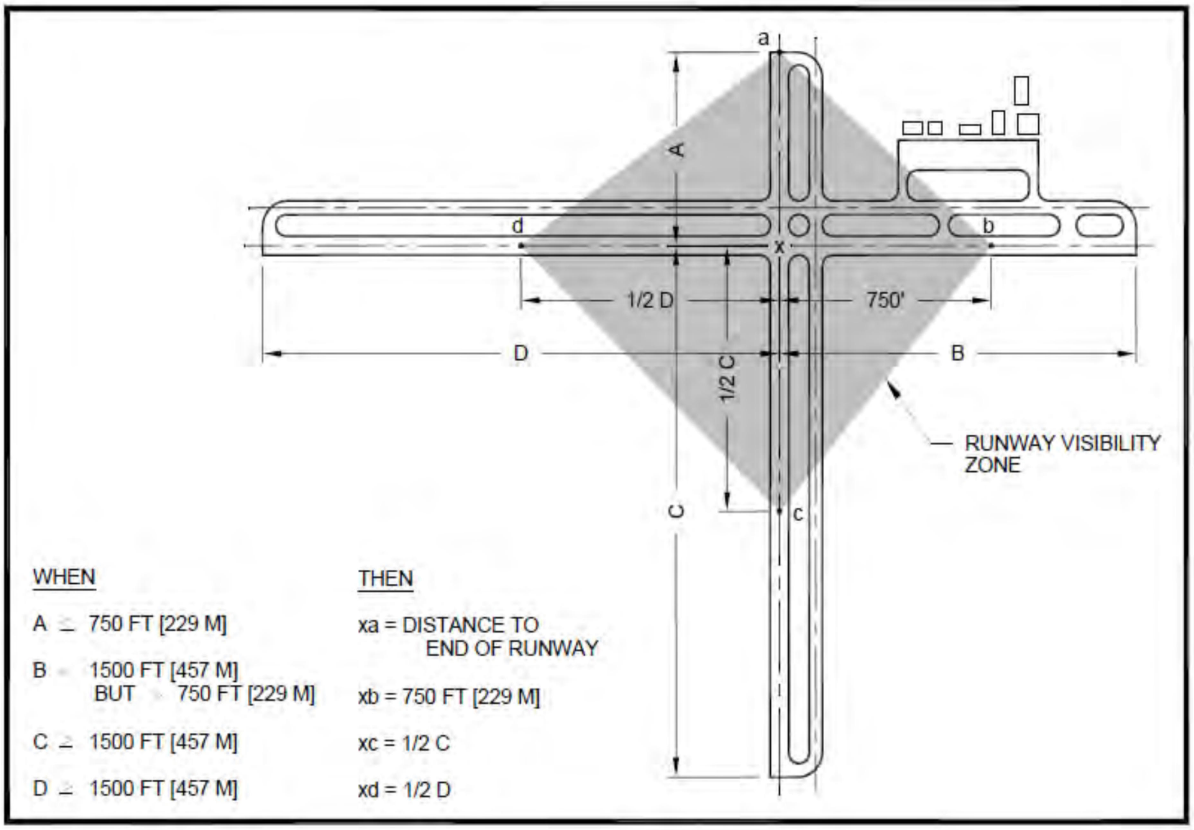
The costliest alternative to address a heavy air cargo scenario is the long-term construction of a 12,000-foot runway at $29.73 million. However, the current length of Runway 10-28 can accommodate a significant amount of air cargo that can be supported by area business with the cost limited to strengthening.

For the minimum B-II crosswind runway at a length of 5,700 feet, regardless of alignment, the cost is estimated at $4.54 million. To increase that length to 6,400 feet (700 additional feet) for C-II activity in crosswind conditions, the cost increases by $1.65 million to a total of $6.19 million.

C. CONSIDERATION OF FUTURE LANDSIDE DEVELOPMENT

With each airfield configuration, protection of line-of-sight between runways is important to meet FAA design standards and enhance the safety of airfield operations. This is more important since the Jetport does not have a control tower. The FAA defines this protected area between runways as the runway visibility zone (RVZ). **Exhibit 4M** is an excerpt from FAA's Airport Design guidance on the RVZ.

Exhibit 4M. FAA Runway Visibility Zone Guidance



The RVZ helps define the building restriction line for landside development. Based on the L- or V-shaped airfield configuration options for the Jetport, the RVZ carves out a triangular shape of property to be protected from development near the southern half of the new runway and existing Runway 10. The more distant the runway ends are from each other, the smaller the RVZ impact area. The RVZ must remain clear as its purpose is to ensure pilots on different runways have adequate line of sight to avoid a possible accident.

V. PREFERRED AIRSIDE ALTERNATIVE

The preferred airside alternative selected by the PAC at the September 28, 2016 meeting is most closely represented by Alternative 3.2, but with modifications. **Exhibit 4N** presents the "preferred airside alternative" that was submitted to and approved by the County. Highlights of the proposed development follow.

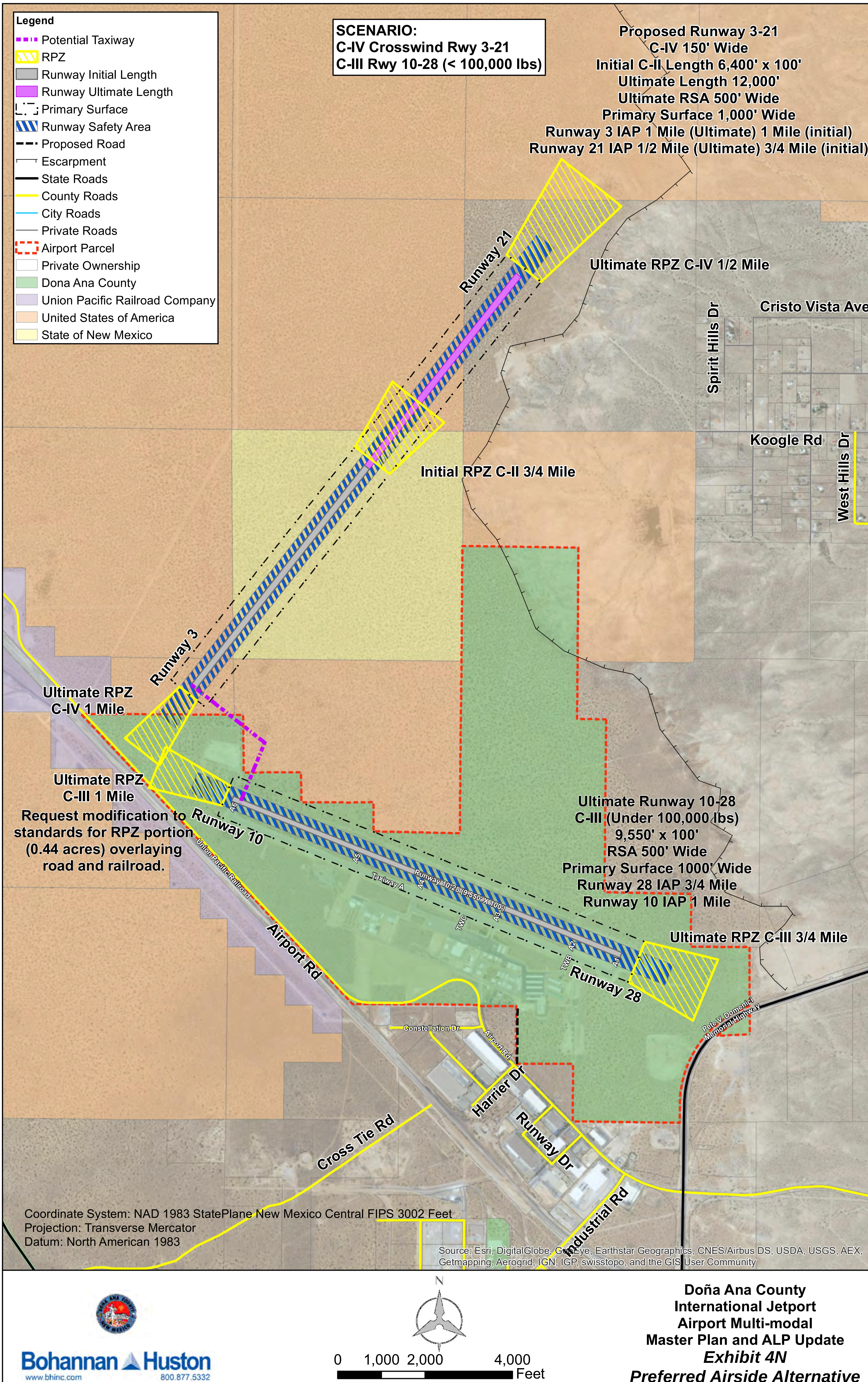


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Exhibit 4N
Preferred Airside Alternative

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Author: gmaynard

March 2017

- Proposed Crosswind Runway:
    - Alignment is 3-21 for wind coverage (96.69% at 13 knots). Although Runway 4-22 has better coverage at 97.13% (0.44% more), the 3-21 and 4-22 alignments have the same combined coverage with Runway 10-28, which is 99.16%. Further, the Runway 3-21 alignment provides a south runway end location that is closer to the existing runway for more timely access, and it aligns better with the escarpment constraints at the northeast end.
    - Ultimate dimensions of the crosswind runway are 12,000 feet by 150 feet wide to protect the possible long-term development of heavy air cargo aircraft activity. The initial crosswind runway to serve the immediate crosswind needs is 6,400 feet by 100 feet for ARC C-II.
    - An Instrument Approach Procedure (IAP) to Runway 3 (south end) with ¾-mile visibility minimums is part of the initial development. The PAC wants to protect for an ultimate precision IAP to Runway 21 with lower minimums of ½-mile. RPZ dimensions on the south end will be 1,000 feet inner width, 1,510 feet outer width, and 1,700 feet length (49 acres). RPZ dimensions on the north end will be 1,000 feet inner width, 1,750 feet outer width, and 2,500 feet length (79 acres).
    - Required land acquisition includes Bureau of Land Management (BLM) land, State Land Office (SLO) land, and private property. Total land acquisition would be for the runway, associated taxiway system, landside/support development (addressed later in this chapter), and any additional land to maintain aliquot parts, if required.
- Existing Runway 10-28
    - No runway extension or additional land acquisition is needed for this runway.
    - Pavement strengthening to 95,000 lbs. from existing 20,000 lbs. is included to serve future growth in business jets. An overlay to increase pavement strength to 135,000 pounds could be completed in the future if B737 air cargo demand materializes. The operational fleet mix supports pavement strength to 60,000 lbs. now. The anticipation of one and possibly two larger business jets (maximum takeoff weight over 75,000 lbs.) based at the Jetport soon supports the need for greater pavement strength in addition to the anticipated growth in

transient activity by larger jets that have been limited by the current pavement strength.

- An IAP for Runway 28 is proposed with ¾-mile visibility minimums. The IAP on Runway 10 remains as is with 1-mile visibility minimums so the corner portion of the RPZ overlaying the road and railroad is limited to 0.44 acres. A request for modification of standards for this small 0.44-acre impact area has since been submitted and approved by the FAA. RPZ dimensions on the west end will be 500 feet inner width, 1,010 feet outer width, and 1,700 feet length (29 acres). RPZ dimensions on the east end will be 1,000 feet inner width, 1,510 feet outer width, and 1,700 feet length (79 acres). Also, Runway 28 has a non-standard right-hand traffic pattern while Runway 10 maintains a standard left pattern keeping traffic away from the road and Union Pacific facility.

The preferred airside alternative was shared with the public at the Public Information Workshop that immediately followed the PAC meeting. The Pubic Information Workshop was held in an open house format to allow attendees the opportunity to view the various development alternatives on easels, review draft materials, and ask questions. Public comment sheets were also made available through the airport manager and at the public information workshop for any feedback from the community. No significant comments were received.

VI. IDENTIFICATION OF LANDSIDE ALTERNATIVES

Following the PAC's recommendation of a preferred airside alternative, the Public Information Workshop, and additional review by the County and the Airport Advisory Board (AAB), the preferred airside alternative was approved on November 22, 2016. After that approval, the identification of various landside development alternatives began.

The long-term airfield configuration of the preferred airside alternative provided a framework for developing landside alternatives.

A recap of the 2008 Master Plan's alternatives provides some background on the landside development since the last study. The landside alternatives task in the 2008 report began with the identification of three alternatives—Alternatives A, B, and C. In discussion with the County, a fourth alternative was created, Alternative D, by taking the County's most favorable elements from the original three alternatives. As a result, the County identified Alternative D as the preferred alternative and incorporated the proposed development into their Airport Layout Plan (ALP). The ALP was reviewed and approved by the FAA. Eight years later, the County continues to use the ALP as a guide for ongoing development with minor updates incorporated and presented to the FAA, as needed. The County, AAB, and the PAC remain supportive of the previous plan's landside development on the south side of the runway, but all recognize the need to revisit its validity in today's aviation and economic environment. For this reason, the current study includes a landside alternative like the County's preferred development plan from the 2008 study for review and comparative evaluation.

Land use areas in the earlier study are like those identified in this study. Designating land use areas instead of detailed facility layouts allows the comparative evaluation of location by function. Detailed facility layouts for needs within the next 10 or so years are shown on the ALP update (presented in the next chapter) and are based on the preferred landside alternative. The ALP shows more distant future development as land use areas. It is likely the master plan and ALP will be updated before demand drives the need for detail within the designated long-term land use areas. Also, a new large tenant may require the flexibility in proposing their own layout.

Land use areas include Small GA, Corporate GA, Air Cargo, Terminal, Aviation-compatible Commercial, and Other development. "Other" encompasses various uses such as Aircraft Rescue and Fire Fighting (ARFF), Airport Maintenance, Administration, Helicopter use, and Special Use/Large Tenant(s).

The following points provide additional background for the landside development alternatives.

- Undeveloped property on the south side of Runway 10-28 and adjacent to existing facilities offers expansion opportunities to meet the 10-year forecast demand. Development on the north side of Runway 10-28 or alongside the proposed new crosswind runway could serve long-term growth needs and/or provide opportunities for large special use tenants. Clearly, development on the south side is more cost effective since road access and utility infrastructure is more readily available than areas farther north and west.
- Future development on vacant property other than that located on the south side may require land acquisition and more environmental review efforts, but early pursuit of these tasks will help protect the County's vision for and investment in the Jetport.

- Despite the airfield configuration's intersecting runway approach and departure paths, the finalized location of the new runway is sufficiently removed from Runway 10-28 to eliminate a Runway Visibility Zone (RVZ) line traversing the undeveloped property north of Runway 10-28.

A discussion of common features among the landside alternatives is presented next, followed by a discussion and illustration of the landside alternatives identified for comparative evaluation.

A. COMMON FEATURES

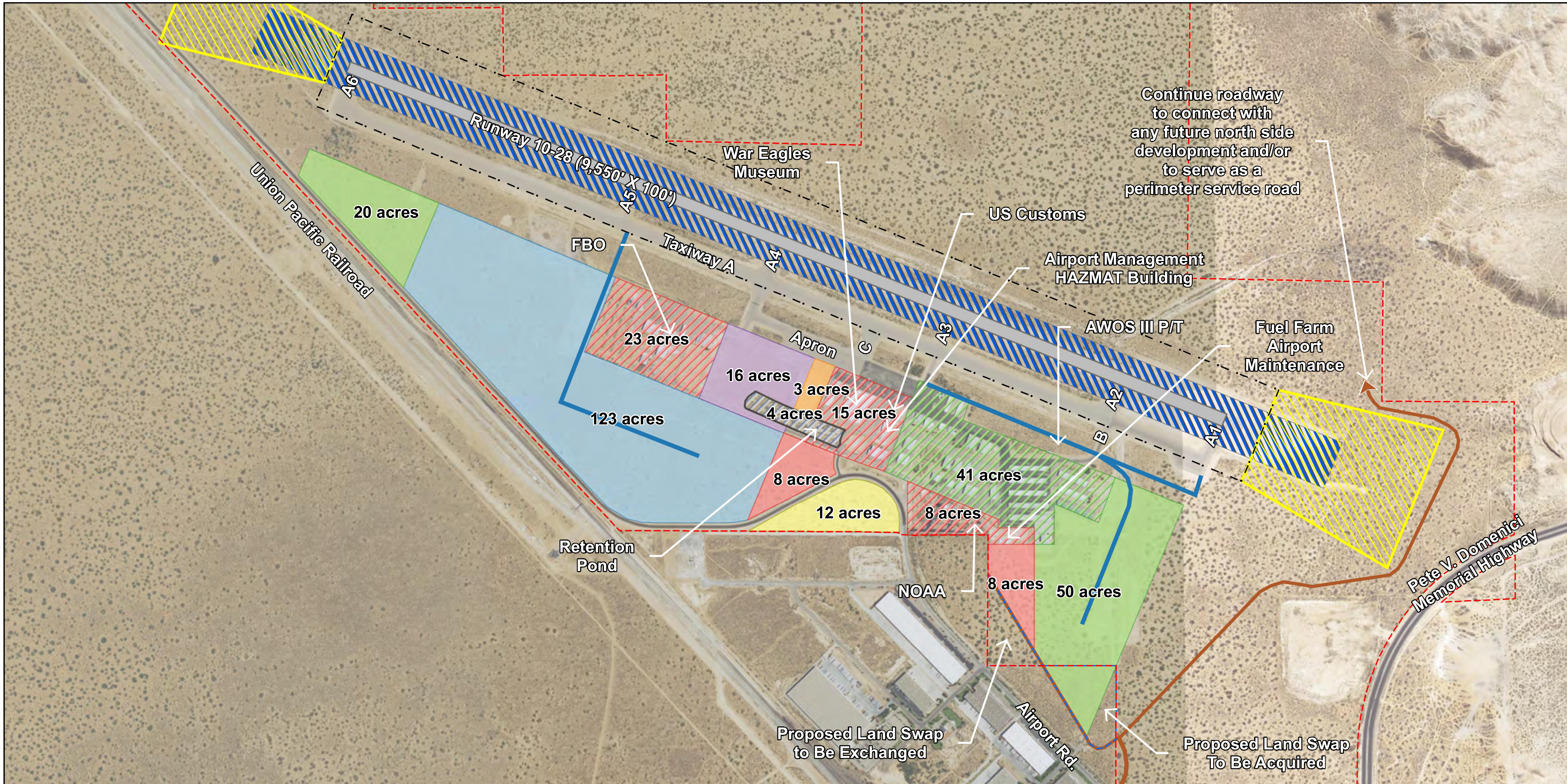
Common features among the landside development alternatives include:

- Existing landside facilities on the south side remain
- No proposed landside development extends beyond runway ends, which enhances safety.
- Proposed land uses are Small GA (green), Corporate GA (blue), Air Cargo (purple), Terminal (orange), and Other (red). These land uses vary by size, shape and location in the alternatives.
- All proposed land use areas provide excess capacity for long-term development beyond forecast needs.
- An existing storm water retention basin running parallel to Airport Road from the War Eagles Air Museum driveway to the west is depicted and will continue to be expanded to serve continuing development in the area. (Note: The County requires 100% storm water retention on site by ordinance. A master drainage study is planned in the near-term to address needs as development continues.)

B. LANDSIDE DEVELOPMENT ALTERNATIVES

Descriptions of the landside development alternatives follow. Separate alternatives were developed for the area south of Runway 10-28, where there are existing buildings, and for the area north of Runway 10-28. The north side alternatives present ideas for the ultimate buildout of the Jetport in the long-term future.

In the exhibits illustrating the alternatives, areas covered by solid land use colors are proposed for future development while colored striped areas identify the land uses of existing development areas.



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Legend

Road Future	Small GA Existing	Small GA Future
Taxiway Future	Other Existing	Other Future
RPZ	Cargo Future	Terminal Future
Primary Surface	Commercial Future	Retention Pond
Runway	Corporate GA Future	Existing Airport Property
Runway Safety Area		Future Airport Property

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Doña Ana County International Jetport Airport Multi-model Master Plan and ALP Update

Exhibit 4O
Alternative South 1

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Author: gmaynard

February 2017

To estimate the number of aircraft that might be accommodated in the Small GA and Corporate GA areas, a ratio of aircraft per acre was used. For Small GA, an acre accommodates an estimated five aircraft with hangar/storage and ample space for taxilanes/taxiways, access, parking, drainage and utility infrastructure. Further, this ratio incorporates a buffer for inefficient parcel sizes and/or layouts. Comparing Corporate GA areas to Small GA areas, the average aircraft is larger and not housed in space-efficient (nested) T-hangars. Conventional hangars are used and some hangars include ancillary areas such as offices, restrooms, and rooms for maintenance equipment/supplies. The ratio used to estimate aircraft capacity in Corporate GA areas is two aircraft per acre, which accounts for aprons, taxilanes/taxiways, access, vehicle parking, drainage, utility infrastructure, lease lot setbacks, and inefficient parcel sizes and/or layouts.

1. LANDSIDE ALTERNATIVE SOUTH 1

This alternative closely resembles the preferred landside development selected by the County in the 2008 master plan and subsequently incorporated into the ALP.

As shown in **Exhibit 4O**, Small GA (green) is located at the far east end adjacent to the existing T-hangar development (striped green). This area has an estimated 50 acres for expansion which is substantially more than necessary to accommodate the projected based aircraft in 2025. Therefore, the 50-acre Small GA parcel could serve demand into the distant future with space for up to 250 aircraft. In the 10-year planning period, less than 10 percent of this parcel is needed. A second parcel for Small GA is designated at the far west end of the building area to offer the smaller private tenants closer access to the proposed crosswind runway. This 20-acre Small GA parcel could accommodate up to 100 aircraft.

A large Corporate GA land use area is identified next to the existing corporate hangars and the FBO. This area, consisting of 123 acres, could accommodate an estimated 62 aircraft. The vacant area (~40 acres) used for air show and other event parking would continue to serve this purpose until it is needed for Corporate GA expansion.

An Air Cargo area surrounding the heavy apron is designated near Taxiway A4. Consisting of 16 acres, this space is more than adequate to meet the anticipated air cargo needs during the planning period with excess capacity for growth well beyond 2025. According to the Air Cargo Study report, less than three acres is required to meet the warehouse/cargo building, apron, and truck and auto parking space needs over the next 10 to 20 years.

Central to Runway 10-28, between the War Eagles Air Museum and the proposed air cargo area, is the three-acre Terminal land use. This location accommodates a GA terminal with ample parking and vehicle access.

The Other land use area designation is for various functions. For Alternative South 1, the eight-acre area adjacent to the future Terminal serves future airport support/administration facility needs with access and parking. The second eight-acre area near the fuel farm is proposed for airport maintenance and fuel farm improvements.

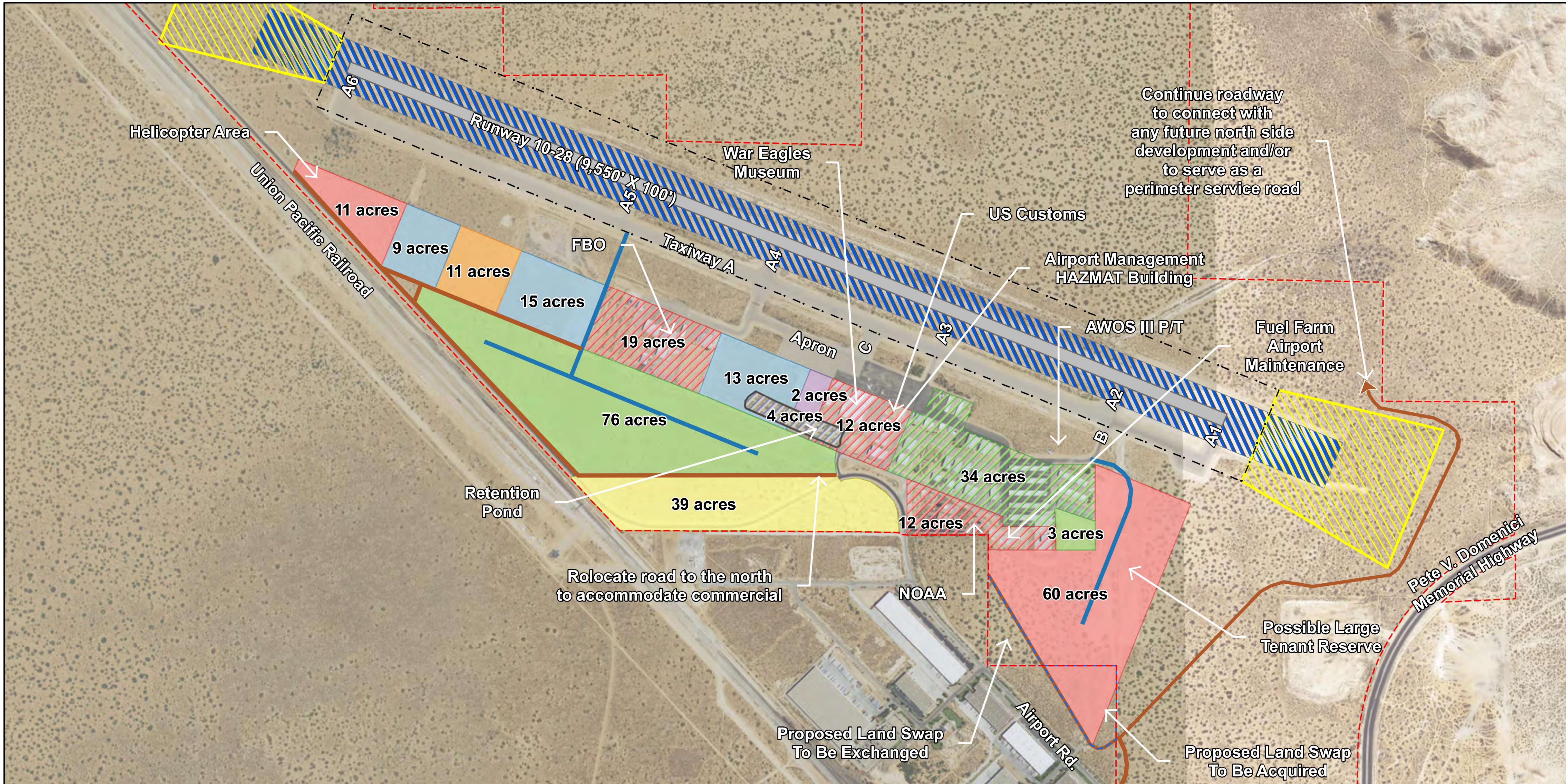
A Commercial land use parcel, totaling 12 acres, is identified along the southern airport property boundary. This area, which does not have airfield access, has a suitable location for revenue-producing opportunities such as a hotel, restaurant, or service station.

Although additional land acquisition is not necessary for the development proposed in Alternative South 1, this concept does assume that the proposed land swap at the southeast end of the airport property will proceed. The County has been pursuing this land swap to simplify the existing "sawtooth" property line and provide land configurations on both sides of the property line that are easier to develop. According to a recent update, real estate appraisals are underway. As shown on Exhibit 4O, the land swap includes the release of a triangular parcel owned by the County (south of the fuel farm) for the acquisition of a triangular parcel to the east.

2. LANDSIDE ALTERNATIVE SOUTH 2

Like the previous alternative, Alternative South 2 proposes the continued development of facilities on the south side of Runway 10-28. In contrast, it shifts the location of the Terminal land use area west to provide closer access to the proposed crosswind runway and to be located among future Corporate GA and Small GA development areas (**Exhibit 4P**).

Proposed Corporate GA development is less than that shown in Alternative South 1, and is placed in three separate locations. One Corporate GA area is east of the FBO, adjacent to Taxiway A4 and the Air Cargo development area, and the other two areas are located on either side of the Terminal development area, which is west of the existing FBO. Corporate GA areas total 37 acres, which support an estimated 18 aircraft—adequate for the 10-year planning period, but limiting for long-term growth. Small GA is proposed south of the Terminal and Corporate GA development areas with an estimated 76 acres to accommodate 380 aircraft. No further T-hangar development is proposed at the far east end. Instead, the 60-acre undeveloped area at the east end would be reserved for a possible large tenant; this location is somewhat isolated from other landside activity while still providing easy access to



Legend

- Road Future
- Taxiway Future
- RPZ
- Primary Surface
- Runway
- Runway Safety Area
- Small GA Existing
- Other Existing
- Cargo Future
- Commercial Future
- Corporate GA Future
- Small GA Future
- Other Future
- Terminal Future
- Retention Pond
- Existing Airport Property
- Future Airport Property

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Exhibit 4P
Alternative South 2

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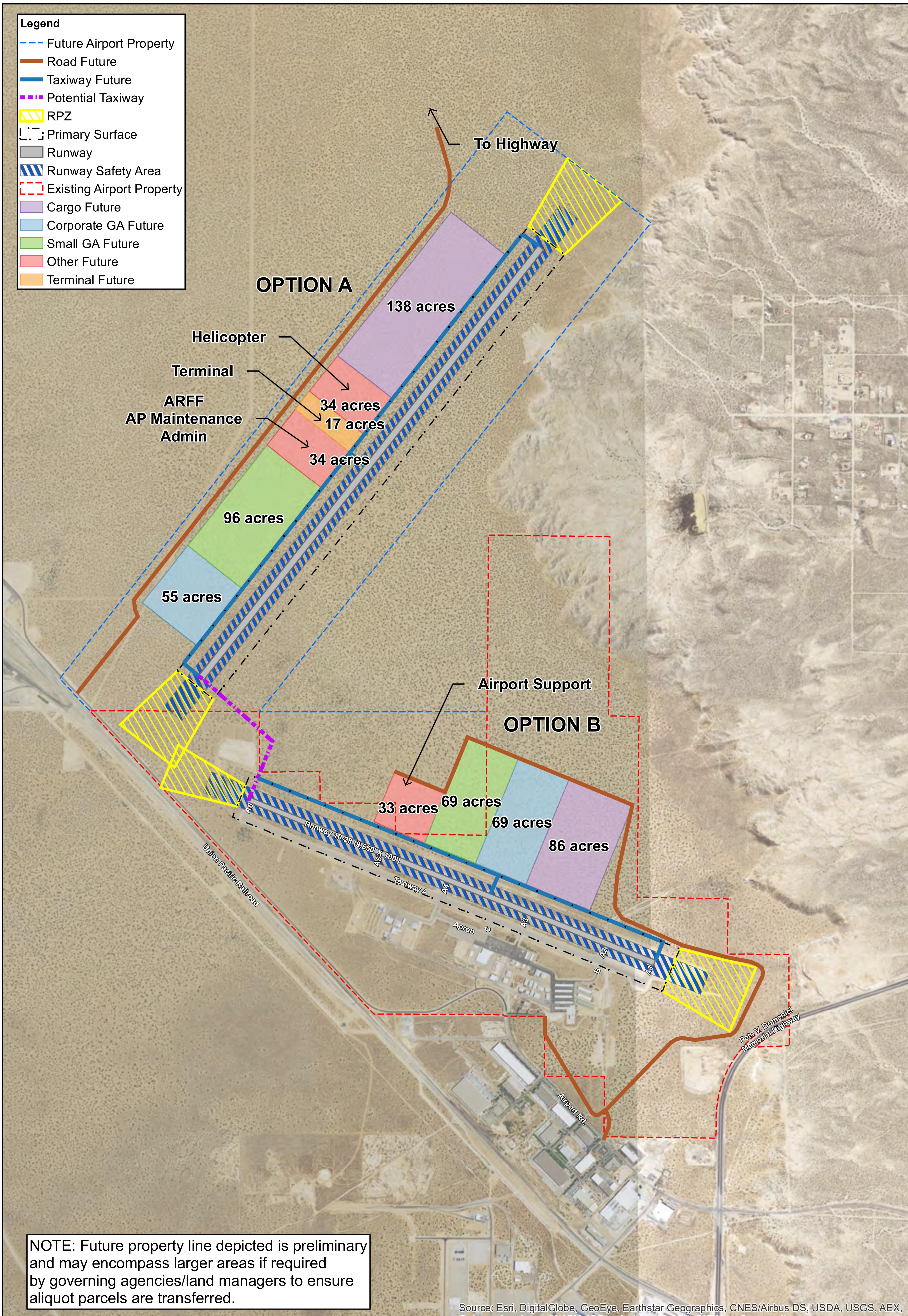
Author: gmaynard

February 2017



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Doña Ana County International Jetport Airport Multi-model Master Plan and ALP Update

Exhibit 4Q

Alternative North 1

the airfield. Existing road access and utility infrastructure facilitates development for a large tenant compared to a location north of the existing runway or near the future crosswind runway.

The 20-acre Other land use at the far west end is a dedicated helicopter area to offer separation from the fixed wing aircraft.

The Air Cargo land use includes an estimated two acres west of existing development (e.g. War Eagles Air Museum) and just east of proposed Corporate GA. Its location provides access to the heavy apron and offers some flexibility and tradeoff with the adjacent Corporate GA property needs since the size is minimally adequate for the need projected in the next 10 years.

Alternative South 2 offers 39 acres of Commercial land use, much larger than the 12 acres designated in Alternative South 1. The airport entrance road is realigned, shifting it north to enlarge the Commercial parcel and increase revenue-producing opportunities. A portion of the parcel is presently on the south side of the access road so it does not have airfield access, but the remainder of the parcel requires the road realignment to offer one large contiguous parcel separate from hangars, taxilanes, and other aviation-related development.

No land acquisition is proposed for the south side development in Alternative South 2. As with Alternative South 1, this alternative assumes completion of the proposed land swap to eliminate the sawtooth-shaped southern airport property boundary.

3. LANDSIDE ALTERNATIVE NORTH 1

Exhibit 4Q illustrates Alternative North 1, which proposes long-term development on the north side of Runway 10-28 and/or the west side of the future crosswind runway. To distinguish between the two areas, the development proposed west of the new runway is identified as Option A and the development on the north side of Runway 10-28 is called out as Option B. While the County would likely pursue development in one of these two areas to provide supporting infrastructure cost effectively, long-term development in both areas is not precluded. This should be considered with specific needs such as an aircraft rescue and firefighting (ARFF) station, particularly since a centralized facility in the Option B area could eliminate the need for two separate ARFF facilities if the route between the ARFF and each runway is short enough for firefighters to meet regulatory response times. The same holds true if long-term traffic increases substantially and dictates the need for an air traffic control tower (ATCT)—its placement in the Option B location.

In addition to the land acquisition for the future crosswind, property west of the new runway would be needed if the County elects to develop adjacent to the new runway, as in Option A. The future roadway shown from the north is an additional airport access road serving the new development alongside the new runway. Option A shows a total estimated 374 acres for development area west of the new runway. A substantial 138-acre Air Cargo area is at the north end with easy access off-airport to the highway.

Adjacent to the Air Cargo is a large 34-acre Other land use area dedicated for helicopter operations—its placement by the terminal and separate from the fixed wing GA aircraft to the south is by design and enhances safety during aircraft movement. The distance between existing landside facilities and the proposed north side facilities requires consideration of a second Terminal area—shown between the helicopter area and a second Other land use parcel dedicated to support facilities (ARFF, airport maintenance, airport administration, and FBO). While airport administration could remain on the south side, as the north side develops, a second ARFF facility might be needed to comply with timely response requirements on the airfield if initial ARFF facilities remain on the south side of Runway 10-28. In addition, airport maintenance equipment and an FBO near the new runway may be needed to conveniently and adequately serve the new runway and its traffic. One centralized ARFF facility is possible if placed east of the new runway and north of Runway 10-28 to comply with response time requirements.

Moving south from the airport support facilities in Option A is the Small GA land use area with an estimated 96 acres, which could serve 480 aircraft. Corporate GA is depicted at the far south end of the new runway to provide more centralized access to the two-runway airfield. With 55 acres, an estimated 110 aircraft could be accommodated within this Corporate GA area. This translates to an aircraft fleet mix of 81% Small GA and 19% Corporate GA in Option A.

While utility infrastructure is in place on the south side of Runway 10-28, new utility infrastructure is needed to support any proposed development in Option A or Option B areas.

Development shown in Option B requires a parallel taxiway on the north side of Runway 10-28 to serve the areas designated for Corporate GA, Small GA, Air Cargo, and Other (support). Each 69 acres in size, Corporate GA and Small GA areas could accommodate significant demand exceeding capacity on the south side into the distant future. The Corporate GA area could accommodate an estimated 138 aircraft while Small GA could serve approximately 345 aircraft.

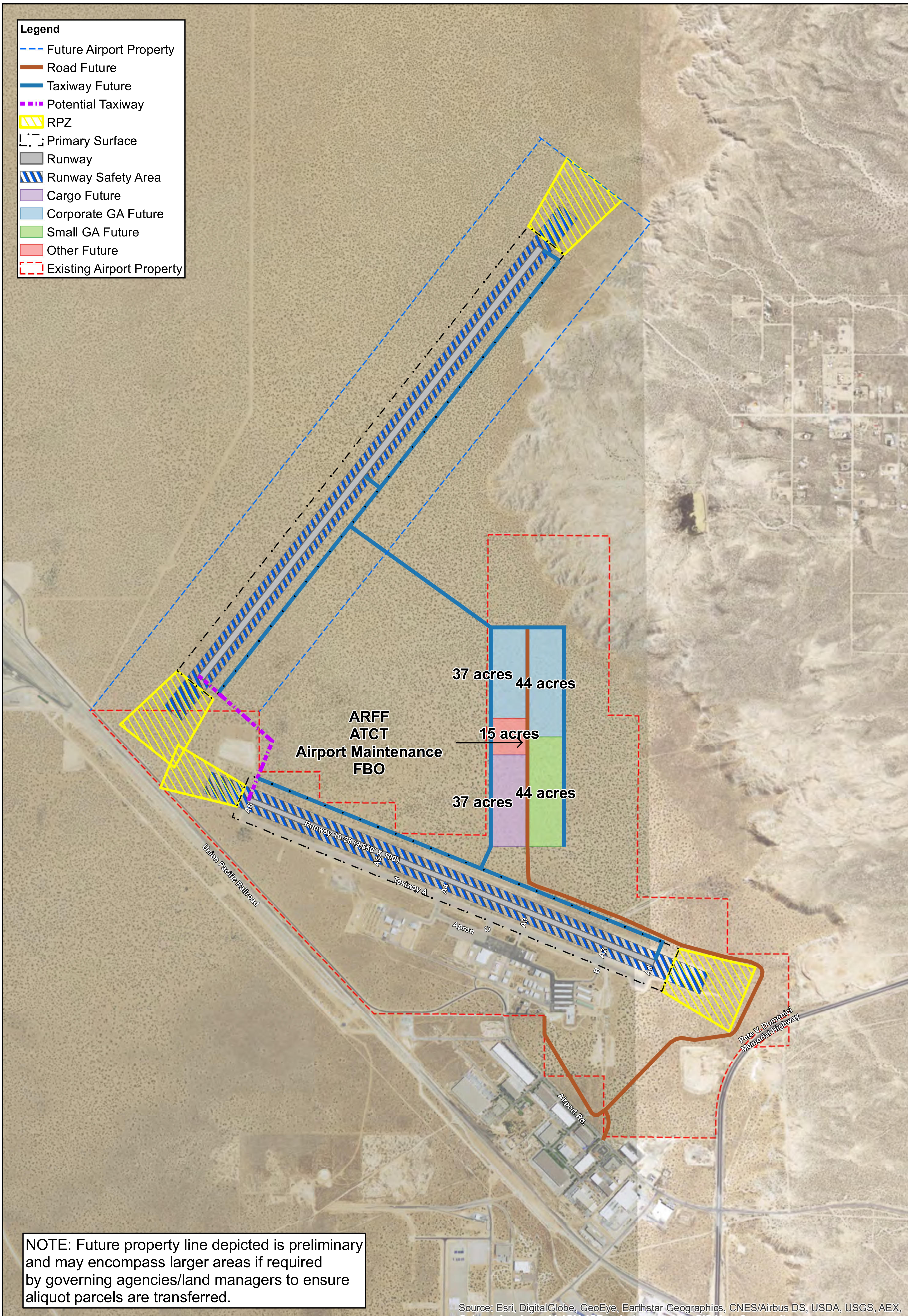

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Exhibit 4R
Alternative North 2

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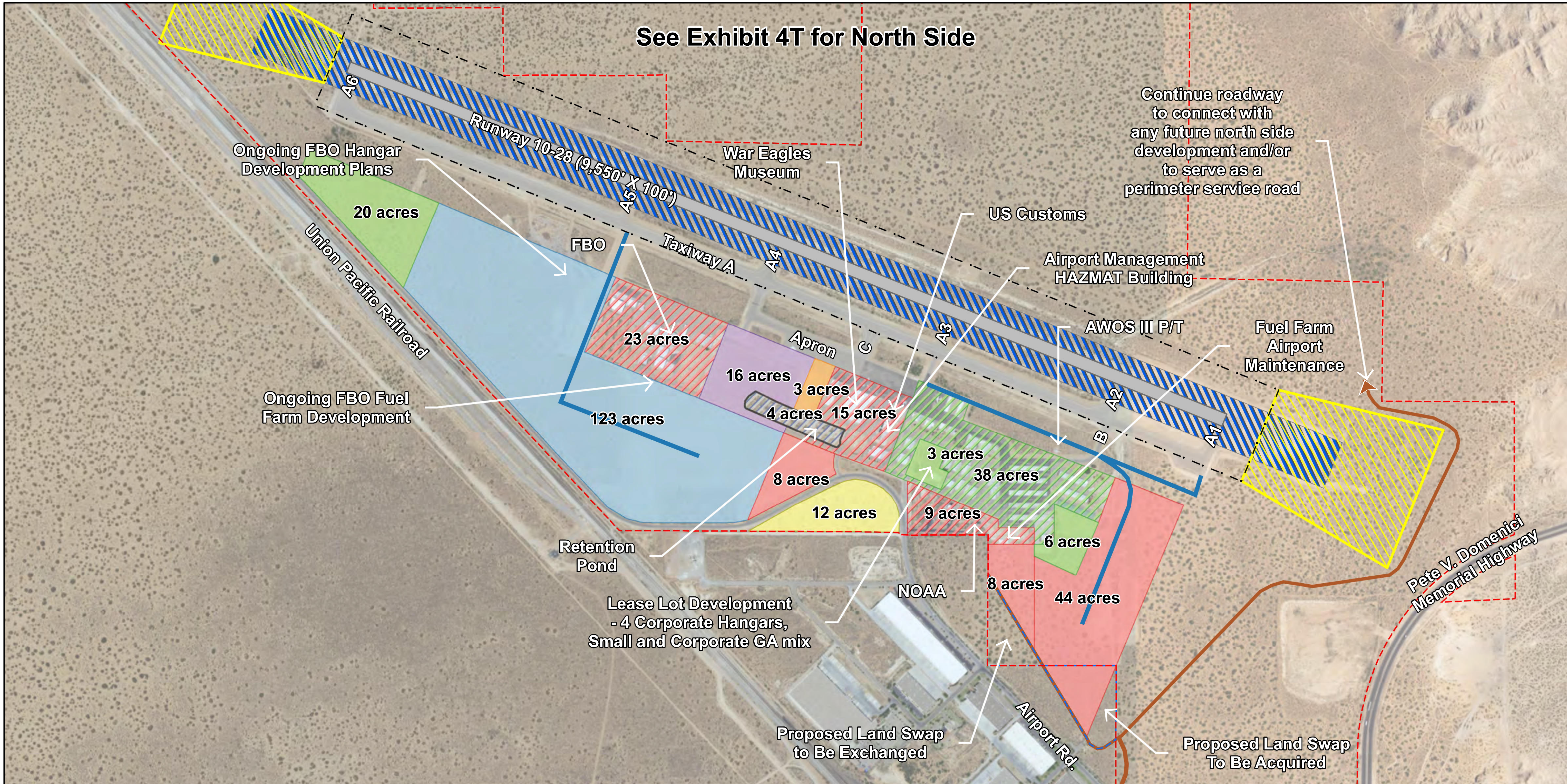
Author: gmaynard

February 2017



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Legend

Road Future	Small GA Existing	Small GA Future
Taxiway Future	Other Existing	Other Future
RPZ	Cargo Future	Terminal Future
Primary Surface	Commercial Future	Retention Pond
Runway	Corporate GA Future	Existing Airport Property
Runway Safety Area		Future Airport Property

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Doña Ana County International Jetport Airport Multi-model Master Plan and ALP Update

Exhibit 4S
Preferred Landside Alternative South

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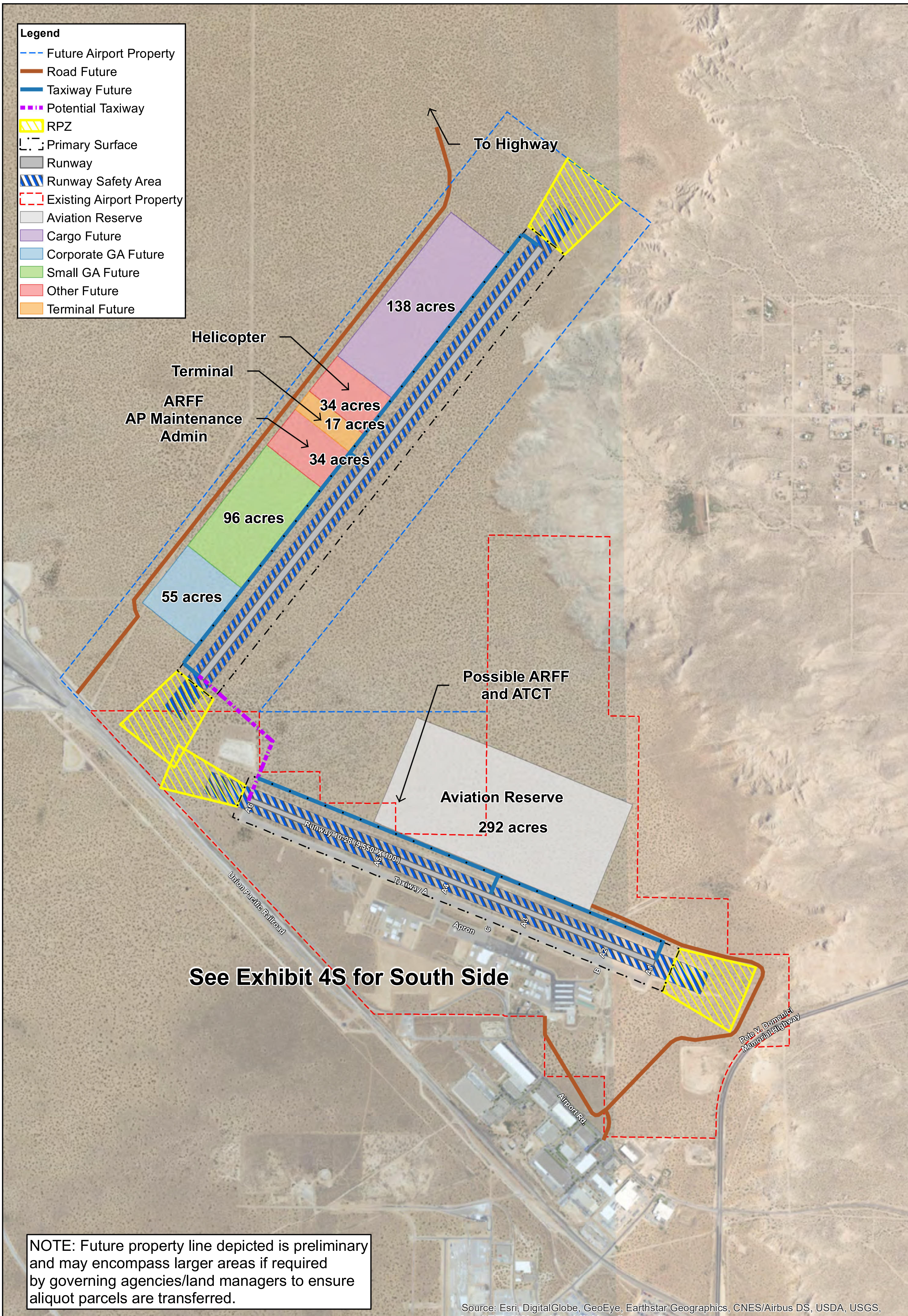
Author: gmaynard

May 2017



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1 in = 2,000 ft

Doña Ana County International Jetport Airport Multi-model Master Plan and ALP Update

Exhibit 4T
Preferred Landside Alternative North

The Option B Air Cargo area, an estimated 86 acres, is placed at the east end offering an easy ingress/egress. The layout of the Option B development area is parallel to Runway 10-28 offering opportunities for aircraft apron area near the runway for easy access.

4. LANDSIDE ALTERNATIVE NORTH 2

The goal of Alternative North 2 is to keep landside development contained within the existing airport property north of Runway 10-28, which was acquired years ago for a future crosswind runway. Still, a connecting taxiway from the new landside facilities to the new runway would be necessary, which crosses State-owned land. Land for the taxiway and its object free area would need to be acquired or leased long-term. In addition, the land between the two runways and southwest of the connecting taxiway would be difficult to access, unless by an expensive road passing under the taxiway's safety area. This concept does not offer "flight line" development areas adjacent to a specific runway, but rather locates them between the runways

As shown on **Exhibit 4R**, Alternative North 2 includes Corporate GA land use areas at the north end providing convenient taxiway access to the new runway and slightly farther access to Runway 10-28. An estimated 81 acres would serve at about 40 aircraft in the Corporate GA areas. Small GA in the southeastern section of the new development has longer taxiway distances to the runways than Corporate GA. The Small GA area offers approximately 44 acres to accommodate 220 aircraft.

Air Cargo, placed in the southwest area, has convenient access to Runway 10-28; air cargo-related ground vehicles also have a shorter ingress/egress compared to the northern Corporate GA tenants. A centralized Other land use area with an estimated 15 acres is included in Alternative South 2 to offer airport support development—FBO, ARFF, Airport Maintenance, and potentially an ATCT.

VII. COMPARATIVE EVALUATION

The landside alternatives were thoughtfully reviewed, considering needs from near-term to distant future. The objective is to comparatively evaluate the various options and define the most favorable layout—likely derived from a composite of various alternatives as well as any spin-off ideas. The result was the PAC's recommendation for a preferred landside development alternative for County approval. The preferred landside alternative should satisfy aviation demand within the planning window and anticipate possible needs in the long-term so decisions made today do not limit or prohibit such development in the distant future.

VIII. PREFERRED LANDSIDE ALTERNATIVE

On February 9, 2017, the AAB hosted PAC members for a supplemental meeting to review and discuss the landside alternatives. Materials provided before the meeting included a narrative description of the landside alternatives for the PAC's review to prepare for discussion. Following a comparative evaluation of the south side alternatives and the north side alternatives, the PAC identified a preferred development concept, which closely resembles the combination of Alternatives South 1 and North 1, Option A, with modifications. Highlights of the preferred landside alternative are presented here and illustrated on **Exhibit 4S and 4T**.

- The preferred south side development includes designated land use areas for development of Small GA, Corporate GA, Terminal, Air Cargo, Large/Special Use Tenant, Other/Support, and Commercial.
    - Future development of Small GA is planned at the east end adjacent to the existing T-hangars as well as the far west end where there is better access to the future crosswind (Runway 3-21). The east area accommodates additional T-hangars for approximately 30 more aircraft. The Small GA area at the west end is an estimated 20 acres to serve approximately 100 more aircraft. Further, the existing hangar development area east of Taxiway A3 contains vacant lease lots where the construction of four additional corporate hangars is already planned; these hangars may serve a mix of Small GA and Corporate GA aircraft. While many current tenants are located where there is a mix of small and large aircraft, future development areas propose separation of Small GA and Corporate GA, when feasible. With Small GA, the County can save money and space in those designated areas with the narrow taxiways/taxilanes and taxiway object free areas/safety areas. In contrast, the larger aircraft served in the Corporate GA areas will require wider taxiway/taxilane pavements and object free areas/safety areas.
    - Corporate GA is proposed near the FBO and existing corporate hangars. It consists of lease lots, taxilanes/taxiways, access, parking, drainage and utility infrastructure. The vacant area used for air show and other event parking would

continue to serve this purpose until needed for Corporate GA expansion. This Corporate GA area accommodates an estimated 62 aircraft in corporate hangars. A portion of this area is already proposed for near-term hangar development west of the FBO (Francis Aviation).

  - Terminal area development is identified west of the War Eagles Museum adjacent to the heavy apron. A terminal building is planned to provide airport users with a lobby, pilot lounge/flight planning room, restrooms, offices, a conference room, rental car counter space, and a restaurant. Auto access and parking is included in this land use area.
  - Air Cargo development is planned just west of the Terminal land use area and around the heavy apron. This area provides four times the projected capacity needed for air cargo activity during the planning period. In the long term, growth may ultimately dictate that air cargo development move to the north side when the need for an extension to Runway 3-21 is also anticipated.
  - An area designated as Large/Special Use Tenant(s) is identified at the east end of the building area next to the Small GA development. Reserving an area separate from other landside activities may attract one or more tenants with special access and security needs, which may also be a revenue-producing development opportunity for the County.
  - The Other land use designation includes future airport support/administration facility needs with access and parking near the Terminal area. On a second parcel, airport maintenance and fuel farm improvements are proposed near the fuel farm.
  - Commercial land use development is proposed on a parcel along the southern airport property boundary. The County proposes to reserve this area for revenue-producing opportunities as it is separated from aviation facilities and does not have airfield access. A hotel, restaurant and service station are examples of possible development on the Commercial area.
- On the north side, Small GA, Corporate GA, Air Cargo, Terminal and Other development (e.g. Airport Maintenance, Administration, Helicopters) are proposed for development after the south side reaches capacity. Despite the distant future development timeframe anticipated on the north side, early plan development helps ensure that environmental evaluations, land acquisition, surface transportation

planning, and utility infrastructure planning are initiated in a timely and coordinated manner. The PAC selected Alternative North 1, Option A, as the preferred landside alternative, which proposes development west of the new crosswind (Runway 3-21) including a future roadway from the north. The Option B area is designated Aviation Reserve with possible development of a centralized ARFF and ATCT when the type and volume of traffic justifies the need.

Details of the preferred development identified for both airside and landside are presented in Chapter Five, Implementation, which includes the ACIP and ALP.

Chapter Five
IMPLEMENTATION

The Implementation Chapter describes how to bring into reality the conceptual development shown in the Doña Ana County International Jetport preferred airside and landside alternatives. The Airport Capital Improvement Plan (ACIP) defines individual projects prioritized by need and anticipated year to be completed, and it lists their estimated costs. Further, the proposed improvements in the ACIP are depicted on the Airport Layout Plan (ALP) set of drawings. The ALP is reviewed and approved by the County and then submitted to the Federal Aviation Administration (FAA) for review and approval, after which it becomes the guide for future development at the Jetport.

I. AIRPORT CAPITAL IMPROVEMENT PLAN

The ACIP's listing of project costs and priorities helps the preparation of funding requests and the budgeting of funding needs. The ACIP is updated annually by the airport sponsor (airport owner) and submitted to the NMDOT Aviation Division (NMAD) and the FAA. A large portion of the capital funding is anticipated from the FAA Airport Improvement Program (AIP), which is currently at 90% of eligible project costs under current (2017) congressional authorization. The remaining 10% is usually split 50/50 between the state and the county. Additionally, the state of New Mexico is providing significant financial assistance through state legislative appropriations.

This section outlines the Jetport's ACIP projects in priority ranking for the period of the master planning study (through 2025). Projects beyond 2025 are not yet part of the ACIP, but are included for planning purposes.

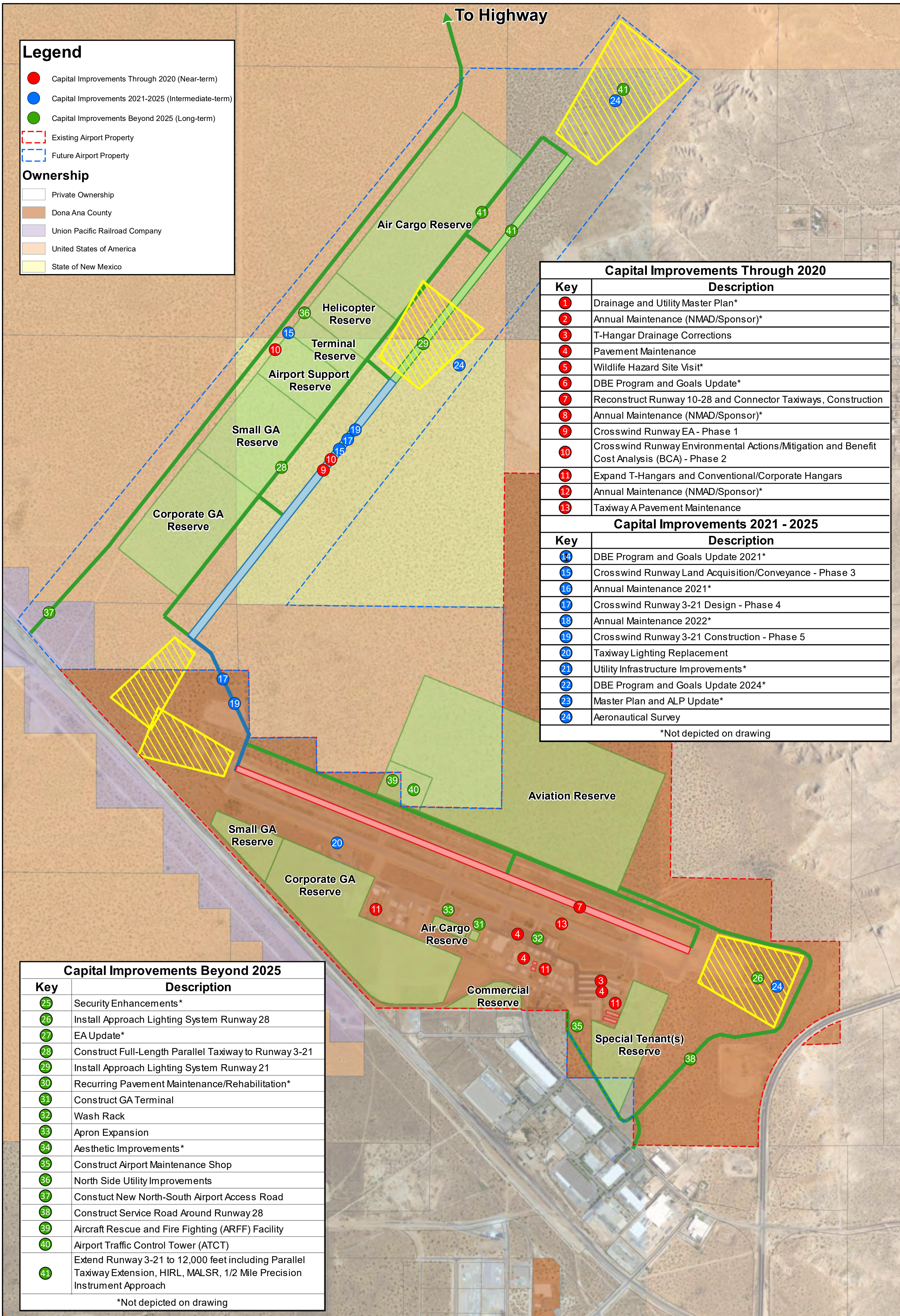
For the projects through 2025, planning/conceptual level cost estimates are included. Final costs will differ due to variables that are hard to predict now, such as detailed project design, site conditions, construction costs, timing, and inflation. All costs estimates provided are in 2017 dollars.

While the projects through 2025 are listed by year, the timing of these projects may vary if aviation demand accelerates beyond or falls behind the forecasts. Funding availability may also impact the timing of projects. While funding is not presently committed to these projects, the earliest projects are the County's highest priorities for the Jetport and are included in the ACIP submitted to the FAA and State. The estimated costs in the ACIP are used by the state and FAA for planning and programming purposes. In the tables listing ACIP projects, funding is divided among three sources: Federal, State, and Local. The Federal and State columns show the proportions of project costs that are eligible for current Federal and State grant programs, which are described in more detail later in the chapter. While the projects are eligible for Federal and State grants, the commitment of grant funding to the projects is not guaranteed.

Exhibit 5A presents the phased improvements—all projects are listed in tables, but physical improvements are also shown on the drawing. Red depicts near-term projects through 2020, while blue identifies improvements planned for 2021 through 2025. Projects anticipated beyond 2025 are depicted in green.

A. NEAR-TERM THROUGH 2020

This section summarizes the near-term projects that are the Jetport's highest priorities at this time. **Table 5A**, which lists the projects by year, is followed by narrative descriptions of the projects. Cost estimates for the near-term projects total $10,080,300 and exclude new corporate hangar construction, which will likely be funded by private entities.



Capital Improvements Through 2020

Key	Description
1	Drainage and Utility Master Plan*
2	Annual Maintenance (NMAD/Sponsor)*
3	T-Hangar Drainage Corrections
4	Pavement Maintenance
5	Wildlife Hazard Site Visit*
6	DBE Program and Goals Update*
7	Reconstruct Runway 10-28 and Connector Taxiways, Construction
8	Annual Maintenance (NMAD/Sponsor)*
9	Crosswind Runway EA - Phase 1
10	Crosswind Runway Environmental Actions/Mitigation and Benefit Cost Analysis (BCA) - Phase 2
11	Expand T-Hangars and Conventional/Corporate Hangars
12	Annual Maintenance (NMAD/Sponsor)*
13	Taxiway A Pavement Maintenance

Capital Improvements 2021 - 2025

Key	Description
14	DBE Program and Goals Update 2021*
15	Crosswind Runway Land Acquisition/Conveyance - Phase 3
16	Annual Maintenance 2021*
17	Crosswind Runway 3-21 Design - Phase 4
18	Annual Maintenance 2022*
19	Crosswind Runway 3-21 Construction - Phase 5
20	Taxiway Lighting Replacement
21	Utility Infrastructure Improvements*
22	DBE Program and Goals Update 2024*
23	Master Plan and ALP Update*
24	Aeronautical Survey

*Not depicted on drawing

Capital Improvements Beyond 2025

Key	Description
25	Security Enhancements*
26	Install Approach Lighting System Runway 28
27	EA Update*
28	Construct Full-Length Parallel Taxiway to Runway 3-21
29	Install Approach Lighting System Runway 21
30	Recurring Pavement Maintenance/Rehabilitation*
31	Construct GA Terminal
32	Wash Rack
33	Apron Expansion
34	Aesthetic Improvements*
35	Construct Airport Maintenance Shop
36	North Side Utility Improvements
37	Constuct New North-South Airport Access Road
38	Construct Service Road Around Runway 28
39	Aircraft Rescue and Fire Fighting (ARFF) Facility
40	Airport Traffic Control Tower (ATCT)
41	Extend Runway 3-21 to 12,000 feet including Parallel Taxiway Extension, HIRL, MALSR, 1/2 Mile Precision Instrument Approach

*Not depicted on drawing

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Exhibit 5A
Phased Development

Table 5A. Near-term CIP Projects						
#	FY	Description	Federal	State	Local	Total Cost
1	2018	Drainage and Utility Master Plan	$ -	$ 27,000	$ 3,000	$ 30,000
2	2018	Annual Maintenance (NMAD/Sponsor)	$ -	$ 10,000	$ 1,100	$ 11,100
3	2018	T-Hangar Drainage corrections	$ 31,500	$ 1,750	$ 1,750	$ 35,000
4	2018	Pavement Maintenance	$ 90,000	$ 5,000	$ 5,000	$ 100,000
5	2018	Wildlife Hazard Site Visit	$ 9,000	$ 500	$ 500	$ 10,000
6	2018	DBE Program and Goals Update	$ 10,800	$ 600	$ 600	$ 12,000
7	2019	Reconstruct Runway 10-28 and Connector Taxiways, Construction	$ 8,109,000	$ 450,500	$ 450,500	$ 9,010,000
8	2019	Annual Maintenance (NMAD/Sponsor)	$ -	$ 10,000	$ 1,100	$ 11,100
9	2019	Crosswind Runway EA - Phase 1	$ 225,000	$ 12,500	$ 12,500	$ 250,000
10	2020	Crosswind Runway Environmental Actions/Mitigation and Benefit Cost Analysis (BCA) - Phase 2	$ 315,000	$ 17,500	$ 17,500	$ 350,000
11	2020	Expand T-hangars and Conventional/Corporate Hangars (East)				By others
12	2020	Annual Maintenance (NMAD/Sponsor)	$ -	$ 10,000	$ 1,100	$ 11,100
13	2020	Taxiway A Pavement Maintenance and T-hangar Taxilanes	$ 225,000	$ 12,500	$ 12,500	$ 250,000
		Near-term (thru 2020) Total	$ 9,015,300	$ 557,850	$ 507,150	$ 10,080,300

Note: Cost estimates are in 2017 dollars.

1. **Drainage and Utility Master Plan**: This project will address the drainage and utility infrastructure needs of the Jetport. The study will inventory the existing drainage system and identify drainage maintenance, upgrading and development requirements. The County requires that all drainage be contained on site (100% retention). The County does not have a current utility map for the Jetport, so this project will help document the existing utility infrastructure and propose improvements to support future development.
2. **Annual Maintenance 2018**. Annually the NMAD issues a grant to help pay for consumable airport maintenance items such as light bulbs, wind cones, etc. and for the National Airspace Data Interchange Network (NADIN) subscription.
3. **T-hangar Drainage Corrections**. This project is to examine and address surface drainage ponding in the T-Hangar area.
4. **Pavement Maintenance 2018**. This project involves crack filling, a sealer-rejuvenator and remarking of the various pavements to extend the life of the pavement, which includes the corporate box hangar taxiways at the east end.

5. **Wildlife Hazard Site Visit.** This abbreviated analysis of wildlife hazards will be conducted by a Qualified Airport Wildlife Biologist who will gather information regarding wildlife hazard history, conduct field observations with respect to habitat attractants and airport operational procedures and communication, and prepare a final report with recommendations. The Site Visit will be a quick evaluation of potential hazards with immediate mitigation measures. The FAA will review the Site Visit report and determine if a full Wildlife Hazard Assessment (WHA) is required.
6. **DBE Program and Goals Update 2018.** The Doña Ana County International Jetport has established a Disadvantaged Business Enterprise (DBE) program in accordance with USDOT 49 CFR Part 26 since it receives Federal financial assistance. Every three years the Jetport's DBE Program and Goals are updated.
7. **Reconstruct Runway 10-28 and Connector Taxiways – Construction Phase**. Runway 10-28 pavement has been deteriorating for several years. Further, the pavement strength is estimated at 20,000 lbs. Single Wheel Loading (SWL), which is inadequate for existing and forecast aircraft activity. This project will strengthen the pavement to 95,000 lbs. dual wheel gear configuration, which is adequate for heavy corporate jets—a National Business Aviation Association (NBAA) recommendation outlined in the previous master plan to support growing corporate activity. This strength could also serve some prospective short-haul ad-hoc cargo flights. However, if the potential Foxconn air cargo activity discussed in the air cargo study is realized in the future, additional pavement strengthening may be required to support frequent B737 use. Airfield connector taxiways are included in this project, which are planned to be updated/corrected to the FAA's taxiway geometry criteria outlined in Airport Design, FAA AC 150/5300-13A, and strengthened to the runway wheel loading. However, connector Taxiway A3 requires relocation to eliminate direct runway access from the apron, also required by FAA guidance. Taxiway A3 from Runway 10-28 to parallel Taxiway A will be relocated to the east an estimated 350 feet. Runway 10-28 reconstruction will be designed for ARC C-II. Ultimately, it is planned for an upgrade to C-III.
8. **Annual Maintenance 2019**. This project helps with routine/recurring maintenance at the Jetport as described in the Annual Maintenance 2018 project.
9. **Crosswind Runway Environmental Assessment (EA) – Phase 1**. An EA is required prior to any Federal action on the proposed crosswind runway. Land acquisition is required for the crosswind runway and includes government lands managed by the Bureau of Land

Management (BLM) and State Land Office (SLO), as well as private land. FAA is required to approve the conveyance and accept the EA prior to the BLM and SLO doing the same. Further, the BLM requires a reimbursable account be set up for expenses associated with the conveyance process. The estimated cost of the EA and reimbursable expenses are included in this project. Coordination with SLO for transfer or long-term lease is also required. This is the first of five phases that comprise the proposed crosswind Runway 3-21 development.

10. **Crosswind Runway Environmental Actions/Mitigation and Benefit Cost Analysis (BCA) – Phase 2**. This project includes the potential archaeological/cultural resource mitigation actions that may be necessary in the proposed development area for the initial 6,400-foot long crosswind runway. The runway development area includes safety areas, connecting taxiway, turnaround areas, and other anticipated areas of disturbance from construction impacts. This project also includes the preparation of the Benefit Cost Analysis (BCA) which will be required to obtain discretionary funding for a project that costs over $10 million. FAA guidance outlines typical BCA tasks: identifying the base case (no investment scenario); identifying, quantifying, and evaluating benefits and costs of alternatives relative to base case; measuring impact of alternatives on airport usage; comparing benefits and costs of alternatives; evaluating variability of benefit-cost estimates; and making a recommendation of the best course of action.
11. **Expand T-hangars and Conventional/Corporate Hangars**. During the 10-year master planning period, an estimated 15 aircraft will require T-hangar space and 11 will require corporate hangar space. Hangars for more than 26 aircraft may be built, since the airport manager has a waiting list for hangar space now. This hangar development project is included in the ACIP, but private funding is anticipated.
12. **Annual Maintenance 2020**. This project helps with routine/recurring maintenance at the Jetport as described earlier in the Annual Maintenance 2018 project.
13. **Taxiway A Pavement Maintenance**. This project involves crack filling, applying a sealer-rejuvenator and remarking various taxiways to extend the life of the pavement.

B. INTERMEDIATE TERM 2021 THROUGH 2025

The anticipated completion of the projects in **Table 5B** falls within the 2021 to 2025 timeframe. However, aviation demand and/or funding availability may impact the timing and sequence of these projects. The total estimated cost of the Intermediate Term projects is $5,311,200.

Table 5B. Intermediate-term CIP Projects					
#	Description	Federal	State	Local	Total Cost
14	DBE Program and Goals Update 2021	$ 10,800	$ 600	$ 600	$ 12,000
15	Crosswind Runway Land Acquisition/Conveyance - Phase 3	$ 90,000	$ 5,000	$ 5,000	$ 100,000
16	Annual Maintenance 2021	$ -	$ 10,000	$ 1,100	$ 11,100
17	Crosswind Runway 3-21 Design - Phase 4	$ 450,000	$ 25,000	$ 25,000	$ 500,000
18	Annual Maintenance 2022	$ -	$ 10,000	$ 1,100	$ 11,100
19	Crosswind Runway 3-21 Construction - Phase 5	$ 3,600,000	$ 200,000	$ 200,000	$ 4,000,000
20	Taxiway A Lighting Replacement	$ 270,000	$ 15,000	$ 15,000	$ 300,000
21	Utility Infrastructure Improvements	$ -	$ -	$ 100,000	$ 100,000
22	DBE Program and Goals Update 2024	$ 10,800	$ 600	$ 600	$ 12,000
23	Master Plan and ALP Update	$ 225,000	$ 12,500	$ 12,500	$ 250,000
24	Aeronautical Survey (AGIS)	$ 13,500	$ 750	$ 750	$ 15,000
	Intermediate Term (2021-2025) Total	$ 4,670,100	$ 279,450	$ 361,650	$ 5,311,200

Note: Cost estimates are in 2017 dollars.

14. **DBE Program and Goals Update 2021**. This is a recurring project every three years to update the Doña Ana County International Jetport's Disadvantaged Business Enterprise (DBE) program in accordance with USDOT 49 CFR Part 26. The update is required since the Jetport receives Federal financial assistance.
15. **Crosswind Runway Land Acquisition/Conveyance – Phase 3**. This project consists of land acquisition needed for the crosswind runway development. While the initial runway length does not require all property, this project proposes to acquire all property necessary for the ultimate buildout of the Jetport as identified on the preferred alternative. This will allow the County, BLM, SLO, and private owner to complete the coordination and transaction requirements well in advance and under one process. Early acquisition offers long-term protection of the Jetport's proposed development plans. While the ultimate facilities and protective surfaces require a specific footprint of property, the land acquisition

may be much larger to transfer aliquot parts, as opposed to metes and bounds, since aliquot parts has been required by the BLM in the past.

16. **Annual Maintenance 2021**. This project helps with routine/recurring maintenance at the Jetport as described in the Annual Maintenance 2018 project.
17. **Crosswind Runway 3-21 Design - Phase 4**. This project consists of designing the initial crosswind runway, 6,400 feet by 100 feet, to serve C-II aircraft with a pavement strength of 60,000 lbs. The design project also includes turnaround taxiways at both ends, a medium intensity runway lighting (MIRL) system, precision approach path indicators (PAPIs), a connector taxiway from Runway 3 to Runway 10, two wind indicators, and perimeter fencing for the property acquired in Phase 3 of the crosswind runway development.
18. **Annual Maintenance 2022**. This project helps with routine/recurring maintenance at the Jetport as described in the Annual Maintenance 2018 project.
19. **Crosswind Runway 3-21 Construction - Phase 5**. This is the construction phase that follows the Runway 3-21 design project described above.
20. **Taxiway A Lighting Replacement**. This project replaces the taxiway lighting system installed in 2002 with LED fixtures and replaces airfield guidance signs with LED fixtures.
21. **Utility Infrastructure Improvements**. This project consists of extensions and improvements to the water, power, and sewer systems at the Jetport to support the continuing landside development. Some individual airside and landside projects will include utility connections and improvements. However, this project will include distribution, capacity and other major system improvements based on the drainage and utility master plan completed in the near-term ACIP.
22. **DBE Program and Goals Update 2024**. This is the recurring update of the Jetport's triannual DBE Program and Goals described in previous projects for 2018 and 2021.
23. **Master Plan and ALP Update.** The Master Plan should be updated regularly—typically every five to eight years, or when changing conditions dictate the need to reevaluate the Jetport's plans. A significant increase in aviation activity, a new critical aircraft that requires an adjustment to airfield geometry, and new tenant(s) with unanticipated facility needs are examples of changes that may require a master plan update.
24. **Aeronautical Survey**. An aeronautical survey is needed to support the Jetport's request for Instrument Approach Procedures (IAP) on Runway 28 and new Runway 3-21. The preferred alternative identifies a future IAP with ¾-mile visibility minimums on Runway 28,

but no change to Runway 10's IAP with one-mile visibility minimums. For the initial construction of Runway 3-21, the County plans for approaches to Runway 3 with visibility minimums not lower than one-mile and to Runway 21 not lower than ¾-mile. Approaches with visibility minimums as low as ½-mile are planned for Runway 21 after the runway reaches its ultimate length in the long-term future.

C. BEYOND 2025

The following projects represent those anticipated after 2025, some of which may not be completed for many years depending on aviation demand and/or funding support. These projects are reflected on the ALP drawings, but no table with cost estimates and funding sources is included for these more distant future projects. Instead, some rough cost estimates are provided for select projects in the descriptions that follow.

25. **Security Enhancements.** Security enhancements will be necessary as airport facilities are expanded. The maintenance and repair of fencing and gates is necessary to minimize the potential for runway incursions. Users have identified the need for additional lighting in hangar areas. Additional fencing and restricted access gates will be needed as additional landside facilities are constructed. These security enhancements are expected to reach $100,000, but they can be implemented in phases to match airport expansion.
26. **Install Approach Lighting System Runway 28**. A Medium Intensity Approach Lighting System (MALS) on Runway 28 is needed for the proposed Localizer Performance with Vertical Guidance (LPV) approach. Corporate and cargo aircraft typically fly by Instrument Flight Rules (IFR), so the new approach will help support these users. Further, the PAC and several airport users requested a better instrument approach at the Jetport. The estimated cost of the MALS is $500,000.
27. **EA Update**. An EA project is included early in the ACIP for the land acquisition effort, but changing conditions and regulations may require an update. If improvements begin more than three years after an EA is prepared, the EA requires review and possibly an amendment/update. This project will evaluate potential environment impacts associated with the continuing development around Runway 3-21 including a parallel taxiway and adjacent landside development such as buildings, taxilanes, access roadways, utilities, etc. The EA Update is estimated to cost $25,000 or more.
28. **Construct Full-length Parallel Taxiway to Runway 3-21**. FAA requires a full-length parallel taxiway for an instrument approach with ¾ mile visibility minimums, which is proposed for Runway 21. A parallel taxiway enhances safety and efficiency because

aircraft do not need to back-taxi on the runway before takeoff or after landing. The full-length parallel taxiway, including MITL (LED), will be 6,400 feet by 50 feet wide with a runway-to-taxiway centerline separation distance of 400 feet to meet the long-term C-IV design criteria. The estimated cost for this project is $2.4 million.

29. **Install Approach Lighting System Runway 21**. A Medium Intensity Approach Lighting System (MALS) on Runway 21 is needed for the proposed Localizer Performance with Vertical Guidance (LPV). Like the MALS proposed on Runway 28 in an earlier project, the estimated cost is $500,000.
30. **Recurring Pavement Maintenance/Rehabilitation.** Pavement maintenance and rehabilitation is necessary on a periodic basis to maximize pavement life and to keep pavements in a safe and serviceable condition. Based on the environmental conditions experienced at the Jetport, a program of sealing/rejuvenating, crack filling, and remarking each airfield pavement (runways, taxiways/taxilanes, and aprons) should take place every eight to ten years.
31. **Construct GA Terminal**. The FBO currently provides GA users with terminal-like facilities and services. However, the County's vision for the Jetport is to ultimately provide the Jetport with a GA terminal west of the War Eagles Museum adjacent to the heavy apron, as identified on the preferred alternative. The terminal will include a lobby, pilot lounge, flight planning area, restrooms, restaurant, retail space, administrative office space and a conference room. The new terminal, and its associated parking area, will be within walking distance to U.S. Customs and the HAZMAT/Admin building where the airport manager is presently located. Once the airport manager's office is relocated to the terminal building, the current office space may be repurposed for the future expansion of emergency services. A new GA Terminal is roughly estimated to cost $1.0 million.
32. **Wash Rack**. This facility improvement was identified during the airport user survey early in the study. The wash rack facilities will accommodate general aviation aircraft. A catch basin, oil/water separator and piping are needed to divert the dirty wash water into a sewer or storm water treatment system. The wash rack size accommodates one aircraft on a pad approximately 50 feet by 50 feet. The proposed wash pad, at an estimated cost of around $100,000, will be located adjacent to the shades near the T-hangars.
33. **Apron Expansion**. The Jetport currently has adequate apron space for aircraft parking needs through the 2025 planning period. As activity grows and new tenants are attracted to the Jetport, additional apron for parking and enhanced circulation will be needed.

Further, additional apron for helicopter parking will help separate helicopters from fixed wing aircraft, enhancing safety and minimizing rotor wash impacts. Apron sizing and phasing will depend on the type and timing of future activity as Jetport growth continues.

34. **Aesthetic Improvements.** As the Jetport grows, aesthetic improvements should be made. Examples include landscaping, signage, and walls to screen equipment and fuel storage.
35. **Construct Airport Maintenance Shop**. This long-term project is for the construction of a 50-by-50-foot maintenance shop on the south side of Runway 10-28 to provide the Jetport with shop space and maintenance equipment storage. The cost is estimated at $500,000.
36. **North Side Utility Improvements**. This project will extend and improve water, power, and sewer systems on the north side of Runway 10-28 to support future development. The project could cost around $1.0 million. However, some utility improvements will be included in individual airside and landside projects in the ACIP.
37. **Construct New North-South Airport Access Road**. Once the existing landside area south of Runway 10-28 reaches capacity, the County plans to develop facilities west of Runway 3-21. This requires a new north-south access road to serve the development area. The south end will connect with existing Airport Road. A second entrance is proposed from the north to offer closer access to the highway, but will require connection off-airport with a future County road. The new access road is roughly estimated at $2.5 million.
38. **Construct Service Road Around Runway 28**. To provide access to the north side of Runway 10-28, a service road will be constructed from the south side. The route is around the Runway 28 RPZ to the midpoint of Runway 10-28. Use of the road will initially be restricted to airport-related service and construction access, and potentially to future ARFF and ATCT employee access. However, the road can be converted in the future to public access when the undeveloped area is used for aviation-related facility expansion. Total cost is estimated at $1.0 million.
39. **Aircraft Rescue and Fire Fighting (ARFF) Facility**. If the Jetport obtains Part 139 certification in the future, an ARFF facility will be needed. Part 139 certification is required for airports providing commercial passenger service--specifically, scheduled passenger service in small aircraft with 10 to 30 seats, and both scheduled and unscheduled passenger service in aircraft with 30 or more seats. The existing HAZMAT building on the south side of Runway 10-28 can be expanded to serve as a multi-purpose emergency

facility with ARFF. However, meeting the emergency response time from the existing building to Runway 3-21 may be a problem, particularly when Runway 3-21 is extended to the north. The required response time from the fire station is 3 minutes to the midpoint of the farthest runway and the initiation of extinguishing agent. For this reason, the preferred alternative reserves a location on the north side of Runway 10-28 that is more central to both runways. The area is presently undeveloped and will require utility and roadway improvements be completed prior to the construction of an ARFF facility there. A new ARFF facility is estimated to cost $2.0 million excluding the response vehicle which could add an additional $500,000 to the ARFF costs. Additionally, the costs for staffing and training need to be considered.

40. **Airport Traffic Control Tower (ATCT).** If aviation activity grows significantly in the future and requires an ATCT, this facility should be centrally located between the runways for optimum line-of-sight around the airfield. The preferred alternative reserves a location for a possible ATCT, which is adjacent to the reserve area for ARFF. Similarly, utility and roadway improvements will be required prior to the construction of an ATCT. The new ATCT would likely cost approximately $2.0 million.
41. **Extend Crosswind Runway 3-21**. This long-term project includes the extension, widening and strengthening of Crosswind Runway 3-21 from its original dimensions of 6,400 feet by 100 feet (for C-II aircraft) with a pavement strength of 60,000 lbs., to its ultimate buildout dimensions of 12,000 feet by 150 feet for C-IV aircraft with an estimated pavement strength of 450,000 lbs. Like other improvements, this is a demand-driven project based on the long-term anticipation of heavy air cargo aircraft using the Jetport. The parallel taxiway would also be extended and widened. A high intensity runway lighting (HIRL) system and a medium intensity approach lighting system with runway alignment (MALSR) are included to support the proposed precision instrument approach (1/2-mile visibility minimums) to extended Runway 21. At a total estimated cost of $30 million, these improvements would likely be phased.

II. FUNDING SOURCES

The Doña Ana County International Jetport ACIP is typically funded by various sources including, but not limited to, Federal, State, and County. This section briefly describes these funding sources.

A. FEDERAL

The Airport Improvement Program (AIP), established under the Airport and Airway Improvement Act of 1982, provides federal grant funding to airports. The AIP is the latest program. Earlier legislation dates to 1946 with the Federal Aid to Airports Program (FAAP) authorized by Congress in 1946, and the Airport and Airway Development Act of 1970.

AIP funding, totaling $3.35 billion annually since 2012, is limited to airports that are included in the National Plan of Integrated Airport Systems (NPIAS). There are 3,340 airports in the current NPIAS of the 5,136 total public use airports in the nation. Consequently, there are 3,340 airports eligible for funding from the total $3.35 billion fund, which means demand for AIP funds exceeds the availability. For New Mexico, AIP funding for projects in 2016 totaled $27.2 million. AIP funding levels for the state, which includes 50 NPIAS airports, offers perspective on the likelihood of funding levels and timing. Of the $27.2 million received, a large percentage went to special projects at the Taos Regional Airport and the Roswell International Air Center. Further, this is higher than New Mexico's typical AIP funding level for the state.

An airport project's funding also depends on other factors related to the AIP breakdown. The FAA apportions the AIP funds into major entitlement categories such as primary (based on enplanements), non-primary and state apportionment funds. Remaining dollars are placed in a discretionary fund, which supports set-aside projects for airport noise and the Military Airport Program first, and then high priority projects. FAA-established national priorities guide the discretionary funding distribution process. The FAA distributes discretionary funds to projects that best carry out the purpose of the AIP, with highest priority given to safety, security, reconstruction, capacity and design standards. This means that discretionary funding levels in various states may fluctuate relative to the state apportionment funds, which are based on an area/population formula. New Mexico airports received a total of $8.7 million in discretionary funding in 2016.

General aviation airports like the Jetport can receive up to $150,000 per year in general aviation "non-primary entitlement" grants under current AIP legislation. With many ACIP projects exceeding $150,000, an airport sponsor may choose to roll over their entitlement for future use—up to four years ($600,000 federal)—so the funds can be used for larger, more costly projects. Unused funds revert to the FAA for funding other airports. Following the distribution of entitlement funds, the FAA may distribute discretionary grants to use the balance of AIP funds. Like the name suggests, these grants are distributed solely at the FAA's discretion. Discretionary grant amounts vary, but are often much larger than entitlements.

Eligible projects may be funded by the FAA at 90 percent under current congressional authorization with a 10 percent local match, which is typically divided evenly between the State and the airport sponsor. As noted earlier, the AIP currently totals $3.35 billion (as authorized by Congress), but this figure has fluctuated in the past. Future levels of AIP funding continue to be dependent on Congressional reauthorization. This study assumes that AIP funding will be maintained at current levels, but this is not guaranteed. The primary source of funding for Jetport improvements has been AIP funding although there have been some special state legislative capital outlay appropriations. The Jetport's FAA-eligible projects are assumed to remain at 90-percent FAA funding. An airport sponsor must have an updated and current ALP that reflects the proposed improvements before FAA funding is requested. Funding is only available for projects that have been identified on an FAA-approved ALP and justified to the FAA's satisfaction. Justification is often presented in the airport master plan prepared with the ALP. If airport improvements that were not addressed during the master planning process, become needed, an ALP update is necessary before the new improvements are eligible for AIP funding.

B. STATE

The NMDOT Aviation Division (NMAD) has established a fund from which dollars are distributed to New Mexico airports. Most of the fund is used to help match Federal grants. For example, when the FAA funds a project at 90 percent, a 10 percent local match is required; the NMAD funds half of that match so the airport sponsor is only responsible for five percent. After Federal grant matches are covered, the NMAD can fund other airport projects that are either ineligible or without a high priority ranking to receive Federal funds. Revenues for the state aviation fund are derived from various sources such as aircraft registration fees and a portion of fuel taxes.

C. LOCAL/OTHER

As the airport owner/sponsor, Doña Ana County is responsible for matching Federal and State grants received for Jetport improvements. However, third-party financing can provide additional funding support, particularly if the project consists of corporate hangars—most often a private development at the Jetport. These private investors, as part of their ground lease, agree to construct facilities if the lease provides adequate time to amortize their investment. Further, the hangars will ultimately revert to the Jetport—typically after 20 years or more. Funding for air cargo facilities would also likely be supported by third-party/private investment. For the projects that are not typically eligible for FAA or State funding, a ground lease for development is a beneficial arrangement for both the sponsor and investor/tenant.

Excluding Federal and State grant dollars received, the Jetport is currently taking in $302,000 in annual revenue while outgoing funds for expenses are reaching approximately $265,000. This results in a positive net cash flow of nearly $37,000. These figures are based on a report provided by the County's 2017 budget for the Jetport.

1. REVENUES

Table 5C summarizes the various revenue streams of the Jetport's annual income. Ground leases represent more than half of the revenue while hangar leases represent just over a quarter of the income. Although fuel sales fluctuate, the County expects approximately $38,000 in fuel flowage fees this year, or 12.6 percent of the total annual revenue. Gross receipts income is nearly eight percent of total revenue, which is over $23,000 annually. Interest income and other miscellaneous income is nominal.

Federal and State grant money is not included in the revenues since those dollars are dedicated to specific capital needs and those funds are not guaranteed each year, but sought as part of the ACIP submittal. The County typically provides the necessary match money for the Federal and State grants. In the past several years, the State has provided a recurring grant specifically for annual airport maintenance, AWOS quarterly inspections, NADIN interface and expendable materials such as light bulbs, herbicide, wind socks and similar items; this is also included annually in the ACIP presented earlier, but excluded from Table 5C. This annual infusion of maintenance money from the State may continue if the State has the funds.

Table 5C –Jetport Revenues FY2017		
Description	**FY 2017 Projection**	**Percent of Total Revenues**
Ground Leases	$159,489	52.8%
T-hangar Leases	$80,710	26.7%
Fuel Sales	$38,000	12.6%
2% Gross Receipts	$23,327	7.7%
Interest	$-	0.0%
Misc. Revenue	$500	0.2%
TOTAL REVENUES	**$302,026**	100.0%

Notes: Federal and State grant funding is not included as those funds vary, are not guaranteed, and are typically provided for specific project needs. However, the State has been providing an annual $9,000 grant with a County-match of $1,000 to cover $10,000 of the Jetport's airport maintenance and operations.
Source: Doña Ana County

2. EXPENSES

Table 5D summarizes the County's projected Jetport expenses for FY 2017. According to actual year-to-date figures, expenses are running below projections. However, this may change later in the fiscal year if some expenses are higher than anticipated. Expense categories consist of Personnel Expenses, General Operations & Administration, and Airport Operations and Maintenance. Personnel expenses include airport staff salaries and benefits. Examples of general operations & administration costs are professional services; airport liability insurance; communications; contractual services; office equipment/furniture; printing and publishing; postage; office supplies; rentals; small tools; registrations and memberships; and employee training. The airport operations and maintenance category includes expenses such as building, equipment, grounds, shop, and vehicle maintenance; electricity; sanitation; telephone; water usage; electrical supplies; fuel; insecticides; medical supplies; and sign materials.

Table 5D – Jetport Expenses FY2017		
Description	**FY 2017 Projection**	**Percent of Total Expenses**
Personnel Expenses	$137,732	52.0%
General Operations & Admin	$58,950	22.2%
Airport Operations and Maintenance	$68,374	25.8%
TOTAL EXPENSES	**$265,056**	100.0%

Notes: Anticipated expenses provided by the County are based on historical expenses and the airport manager's anticipation of other expenses this year.
Source: Doña Ana County

3. CASH FLOW

Table 5E summarizes the Jetport's anticipated cash flow for 2017 based on the budget provided by the County. The airport manager considers the Jetport's past revenue and expense figures as well as anticipated new revenue and expenses to prepare the budget.

Table 5E – Jetport Cash Flow	
Description	**FY2017 (Projection)**
Revenues	$302,026
Expenses	$265,056
Net Cash Flow	**$ 36,970**

Note: Revenues exclude capital improvement grants received from the FAA and NMAD. Expenses exclude the outgoing County funds to match the grant funds received.
Source: Doña Ana County

III. AIRPORT LAYOUT PLAN DRAWINGS

This section presents an overview of the various drawings included in the Airport Layout Plan (ALP) drawing set for the Doña Ana County International Jetport. The ALP set is updated as part of the master plan study and submitted to the FAA for their review and approval process. A reduced-size set of the ALP drawings is included at the end of this chapter.

To assist with the FAA's review, a completed ALP checklist is submitted with the drawings to the FAA. The ALP checklist is derived from the FAA Standard Operating Procedure (SOP) 2.00, dated October 1, 2013. A copy of the ALP checklist is included in the appendices. The FAA requires a full-size set of ALP drawings to be submitted (full-size drawings are at least 22 inches by 34 inches). Further, the electronic files of the final drawings are provided to the County so future updates can be easily accomplished.

ALP drawings may contain a lot of technical and overlapping detail so varying line types and line weights as well as labels are necessary to understand and distinguish between these details. For this reason, color is often used in the ALP drawings to improve the distinction between facilities and other detailed data required by the FAA checklist.

A. COVER AND DATA SHEET

The title sheet includes an index of the various drawings included specifically for the Jetport. A total of 20 drawings are listed in the index. With the large future footprint of the Jetport, some of the required drawings were split into two sheets.

There are 20 sheets in the ALP drawing set as follows:

1. Cover and Data Sheet
2. Runway and Data Table 1 of 2
3. Runway and Data Table 2 of 2
4. Airport Layout Drawing 1 of 2
5. Airport Layout Drawing 2 of 2
6. Part 77 Airspace Map
7. Runway 10-28 Airspace Profile
8. Runway 3-21 Airspace Profile
9. Runway 10, Part 77 Approach Surface Plan & Profile
10. Runway 28, Part 77 Approach Surface Plan & Profile
11. Runway 3, Part 77 Approach Surface Plan & Profile
12. Runway 21, Part 77 Approach Surface Plan & Profile
13. Terminal Area Plan
14. Property Map – Exhibit A, 1 of 2
15. Property Map – Exhibit A, 2 of 2
16. Property Map Data Table

17. On-Airport Land Use 1 of 2
18. On-Airport Land Use 2 of 2
19. Off-Airport Land Use 1 of 2
20. Off-Airport Land Use 2 of 2

The Cover and Data Sheet also shows a location map and a vicinity map. The location map depicts the general location of the Jetport within New Mexico and the region. The vicinity map provides the Jetport's specific location in Santa Teresa relative to nearby roads. Due to limited space on the sheets, some of the data tables for the Airport Layout Plan are included on the Cover & Data Sheet.

A title block and a revision block are on all drawings in the ALP set. The revision block is necessary to document future changes made to the ALP. Soon after the County and FAA approval of the ALP, new facilities will likely be constructed, and these changes need to be incorporated into an "as-built" ALP update, with the revision block noting the date and revision number.

B. AIRPORT LAYOUT DRAWING

The Airport Layout Drawing sheet is the most important drawing in the ALP set. For the Jetport, the Airport Layout Drawing is split into two parts and depicted on Sheets 4 and 5. Illustrating the existing facilities as well as the proposed future development, the Airport Layout Drawing is a living document and one of the airport sponsor's most valuable tools. The future development identified on the Jetport's ALP is derived from the County's selection of a preferred airside and landside alternative, as documented in Chapter 4. Proposed improvements are only eligible for FAA funding if they are depicted on an approved ALP.

The Airport Layout Drawing contains a substantial amount of data presented in tables (on various sheets) and/or on the plan-view illustration of the Jetport. The Airport Data Table (included on the Cover & Data Sheet) lists information such as the existing and future critical aircraft, mean maximum temperature of the hottest month, airport elevation, and airport navigational aids. The Runway Data Tables (Sheets 2 & 3) include information for each existing and proposed runway, such as: runway dimensions, runway end coordinates, pavement strength, runway lighting, runway approach type, and runway critical design aircraft. Dimensions of protected surfaces required by FAA design standards are also included, such as runway safety areas and object free areas.

A Modification to Standards Table (included on Cover & Data Sheet) is presented to document the County's request for and FAA approval of a non-standard condition. The modification to standards, as mentioned in Chapter Four, concerns a small portion of the Runway

10 RPZ that overlays Airport Road. The FAA considers a public road an incompatible land use within the RPZ. The overlay area totals 0.44 acres. To clear the RPZ of the roadway would require relocating or displacing the threshold on Runway 10 approximately 185 feet, a costly reduction of usable runway length. Consequently, the request for modification of standard is to leave the Runway 10 threshold and its associated RPZ in place—accepting the minor 0.44-acre land use issue. On May 6, 2017, the FAA approved the request for modification of airport standards (see Appendix F).

The Wind Coverage Table next to the wind rose notes the wind data collection period and source. It presents the percentages of wind coverage calculated by individual runway and the combination of both runways for crosswind component speeds of 10.5, 13, 16, and 20 knots. Coverage less than 95% on a single runway, which is an FAA threshold, supports the need for a crosswind. For the Jetport, Runway 10-28 has 83.78% coverage at 10.5 knots and 89.43% coverage at 13 knots, so a crosswind runway is justified. While pilots have expressed concern over the years for the insufficient wind coverage at the Jetport, the FAA requires data to confirm the need for a crosswind and to assess what future crosswind alignment is best to maximize the coverage. Further, the FAA recommends a full 10 years of data, which is often unavailable. The Jetport currently has two full years of data obtained from a nearby local area weather station. Now that the FAA-certified AWOS is operational on the Jetport, the County can analyze the wind data each year to see how it compares to the other weather station. The wind rose includes an overlay of each runway orientation at varying crosswind components.

The ALP drawing illustrates the existing runway, taxiways, apron areas, hangars and other buildings, fueling facilities, roadways, auto parking, and other existing facilities. Future facilities such as the new crosswind runway, additional taxiways, new hangars, new roadways, and designated land use areas are depicted to represent the County's ultimate development plans for the Jetport. Showing ultimate development allows long-term improvement plans to be protected. A Buildings Table assigns numbers to the existing buildings and those future buildings with a defined location. The land use areas are for long-term planning purposes, since facilities are not needed in these areas during the planning period.

Also included on the ALP drawing is the north arrow with magnetic declination and annual rate of change for the Jetport—important to runway number designation.

C. PART 77 AIRPSACE MAP

The Airspace Map (Sheet 6) is often called the Part 77 drawing, referring to 14 CFR Part 77, Objects Affecting Navigable Airspace. In Chapter One, Inventory, the Airspace section addresses the key airspace surfaces defined by Part 77, including primary, transitional, horizontal, conical and approach surfaces. Refer to Exhibit 1G in Chapter One for an illustration of these imaginary surfaces that require protection from protruding objects, such as natural growth, terrain, or permanent or temporary construction. These surfaces are incorporated into the Jetport's Airspace Map.

The airspace surfaces are drawn over a topographic map so elevations within the protected airspace may be identified. Also included is an Objects Table with obstructions identified by number. The specific imaginary surface(s) impacted by an object are identified along with the measure of impact in feet. This drawing is an important tool for protecting the airport environs from future obstructions as well as identifying obstructions that require lighting, removal, or other potential mitigation measures. Further, the airspace drawing is used to identify the "airport influence area" for off-airport land use planning purposes.

To provide the necessary approach surface detail, Airspace Approach Profile Drawings are prepared as an extension of the Airspace Drawing. For the Jetport, this requires a sheet for each runway. These drawings are included as Sheets 7 and 8 of the ALP set. Features identified in the profile views include topography and any objects of concern within the approach. Each runway's approach surface begins 200 feet from the runway approach end and extends the distance required by its instrument approach visibility minimums and by whether the runway is for small or large aircraft (under or over 12,500 pounds maximum takeoff weight). For both Runway 10 and 28 approaches, the surface length is 10,000 feet and slopes up at a 34:1 (horizontal: vertical) ratio. For initial Runway 3-21 (6,400 feet in length), the approach surface on each end extends 10,000 feet at a 34:1 slope, like Runway 10-28. However, the ultimate buildout of Runway 3-21 to 12,000 feet includes a planned precision instrument approach with ½ mile visibility minimums on Runway 21. This requires an approach surface of 50,000 feet; the initial 10,000 feet requires protection for a 50:1 slope and the slope of the remaining 40,000 feet is 40:1.

D. PART 77 APPROACH SURFACE PLAN AND PROFILE

The purpose of the Part 77 Approach Surface Plan and Profile Drawings is to show a close-in view of structures or terrain near the approach end of the runway. Plan and profile views off each runway end include the area along the extended runway centerline. Objects contained within the areas near the runway are numbered and correspond to a table of additional data. The data describes the object and whether it clears the approach or is an obstruction that penetrates the surface.

E. TERMINAL AREA PLAN

The Terminal Area Plan, Sheet 13, provides a close-up view of the building area on the south side of Runway 10-28. Existing buildings such as the Airport Administration/HAZMAT building, US Customs, War Eagles Air Museum, FBO facilities, corporate/conventional hangars, T-hangars, roadways and auto parking are depicted. This scale also provides a clear view of apron areas and taxilanes. Future facilities such as the proposed GA Terminal Building, future hangars and support facilities are depicted. The Facilities Table provides a key to the existing and future facility locations.

F. PROPERTY MAP

The Property Map (Sheets 14 through 16) identifies the Jetport's existing 1,712 acres of property and the proposed acquisition of additional property by parcel. Future acquisitions are presently controlled by the BLM, SLO and private ownership. BLM and SLO property acquisition is a transfer process that requires early coordination and inclusion of the FAA. Nearly 1,400 additional acres are proposed for acquisition. This property involves acquisition from three different owners -- BLM, SLO and a private owner. The property to be acquired is estimated and it is anticipated that the area may increase in size as coordination begins. The acquisition of government property typically requires the transfer of aliquot parts, which refers to parcels that are rectangular subdivisions of a section. The future property boundary identified for the proposed crosswind runway does not consider aliquot parts, but this will be addressed during the ALP review and approval process with the FAA.

G. ON-AIRPORT LAND USE

The On-Airport Land Use drawing identifies land use development areas such as Small GA, Corporate GA, FBO, Terminal, Air Cargo, Other, Commercial, and Aviation Reserve (Sheets 17 and 18). There is significant development space for future growth to accommodate each of the various aviation uses, but designated area sizes can be adjusted depending on how airport activity and needs evolve in the future. This offers flexibility in the long-term planning process.

H. OFF-AIRPORT LAND USE

The Off-Airport Land Use drawing (Sheets 19 and 20) identifies federally-owned and state-owned land. Further, these color drawings identify area zoning. The off-airport land use drawing serves as a tool to ensure development adjacent to the Jetport is compatible with airport operations.

IV. OTHER RECOMMENDATIONS

Post-study implementation of a master plan can be a challenging task to fit among the daily responsibilities for the operation and maintenance of an airport. In addition, the financial challenges of master plan implementation are daunting, considering so many capital improvement needs. However, implementation is vital to the success of the planning process.

The County has already taken big steps to establish a framework for implementation. First was the formation of the Planning Advisory Committee (PAC) at the beginning of this study. The PAC is a group of stakeholders representing a cross-section of the community who brought varying perspectives and valuable knowledge to share so planning and development recommendations could be presented to the County. Communication with and engagement of the PAC members helped forge a path for promoting regional economic growth with a role for the Jetport. Despite the PAC's temporary existence, from the beginning of the master plan study to its end, the County can maintain and expand its relationship with many of the PAC representatives for continued and mutually beneficial progress. This can be accomplished at area economic development meetings or through Jetport-hosted workshops where invitees discuss and generate business development ideas.

Considering the numerous challenges of master plan implementation and competing demands on the airport sponsor, the following action items are recommended:

- Routinely review and verify ACIP project timing. Timing may require adjustment if anticipated demand occurs sooner or later than anticipated. Further, financial feasibility will play a role in timing due to grant funding availability and County budgetary constraints. Compliance with design standards for safety could also re-order project priorities.
- Maintain communication with Federal and State staff regarding the ACIP and any significant changes at the Jetport. Continue annual ACIP updates and submittals.
- Monitor emerging aviation issues and outside influences on airport development and funding.

- Maintain documentation on activity, changes, and issues at the Jetport to discuss with the County, Airport Advisory Board, FAA and/or NMAD, as appropriate, and for consideration in subsequent ALP updates and a future airport master plan update.
- Comply with grant assurances to ensure grant funding eligibility is not compromised.
- Continue to monitor activity such as aircraft operations and based aircraft. Aircraft fleet mix changes such as larger jets may impact facility needs. Increased business activity may increase new tenant interest.
- Continue to recognize and reach out to all stakeholders--elected officials, current and prospective tenants, airport visitors (transient pilots/passengers), surrounding communities, and area planning staff (including multi-modal transportation planning).
- Recognize and consider new guidance on airport sustainability planning.
- Consider preparation of a Business Plan for the Jetport.
- Review and update, as appropriate, the Jetport's rates and charges, minimum standards, and rules and regulations.

V. CONCLUSION

Specific projects and their timing outlined in the ACIP have been reviewed by the airport manager. Project need may be driven by the current condition of facilities, the latest FAA design standards, anticipated growth in activity at the Jetport, and/or issues identified by Jetport users. However, an adjustment to the implementation schedule of proposed improvements may be needed if unanticipated changes in activity occur. Further, the availability of funding will play an important role in any adjustments.

All proposed improvements outlined in the ACIP are depicted on the ALP. The FAA review and approval process for the ALP set update takes time as various business lines within the FAA participate in the review. There are no significant comments or changes anticipated as a result of the FAA's review process since the County has maintained communication with the FAA throughout the master planning process. The new FAA-approved ALP supersedes all previous drawings.

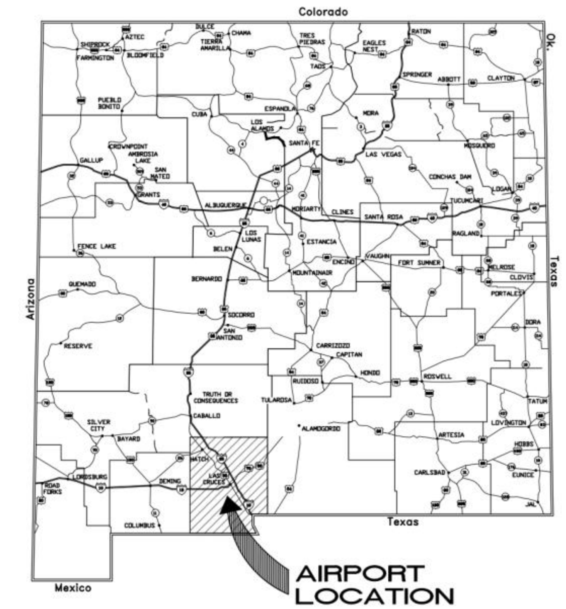
DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

SANTA TERESA, DONA ANA COUNTY, NEW MEXICO

AIRPORT LAYOUT PLAN

NMAD GRANT: 576-15.02

April 30, 2018



LOCATION MAP

LOCATION & VICINITY MAP

AIRPORT DATA TABLE

AC 150/5300-13A, change 1	Existing	Ultimate
Airport Reference Code (ARC)	C-II	C-IV
Area Maximum Temperature		
Airport Elevation (feet AMSL)	4113	4124
Airport Navigational Aids	Beacon	Beacon, MALSR (RW 21)
Airport Reference Point		
N Latitude	31˚ 52' 49.62"	31˚ 53' 36.74"
W Longitude	106˚ 42' 11.68"	106˚ 42' 23.37
Miscellaneous Facilities	U.S. Customs, PAPI, REIL, lighted primary windcone, supplemental windcones, Segmented Circle, MITL	SAME
Critical Aircraft	Gulfstream 280	Boeing 767
Magnetic Variation (6/6/2017)	8° 18' E ± 0° 20' changing by 0° 6' W per year	
NPIAS Role/Service Level	Regional/GA	SAME
State Equivalent Service Role	Regional General Aviation	SAME
Vertical Datum	NAVD 88	
Horizontal Datum	NAD 83	
USGS Quadrangle	La Union	
Township/Range	Township 28S/ Range 2E	
CBD to Airport	4 mi NW Santa Teresa, NM	
Airport Acreage	1711.6	3078
Airport Ownership	Public	
Flight Service Station	Albuquerque	
Sectional Chart Coverage	El Paso Chart	
Low Altitude	L-6N	
UNICOM Frequency	122.725	
AWOS Freq/Phone	124.175/575-589-2643	

TAXIWAY DATA TABLE

Note: The taxiway system was designed and constructed to AC 150/5300-13 standards of "judgmental oversteering". The below tables are the requirements based on AC 150/5300-13A reflecting "cockpit over centerline" steering.

Note: taxiway design standards are based on the ADG and TDG

AC 150/5300-13A, change 1						
Taxiway	A, A connectors to RW 10-28, C		B, D, new hangar area taxiways		TWs associagted with RW 3-21 (initial construction to ultimatde standards)	
	Existing	Ultimate	Existing	Ultimate	Initial	Ultimate
Critical Aircraft	Gulstream 280	Boeing 737	Citation X	Citation X	Boeing 767	same
Taxiway Design Group (TDG)	2	3	2	same	5	same
Airplance Design Group	II	III	II	same	IV	same
Runway Centrerline to Parallel Taxiway/Taxilane Centerline	445 existing south		N/A		400	
Nominal Taxiway Width	varies 35 - 75	same	35	same	75	same
Taxiway Edge Safety Margin (TESM)	7.5	10	7.5	same	15	same
Taxiway Shoulder Width	15	20	15	same	30	same
Taxiway Safety Area (TSA)	79	118	79	same	171	same
TSA at curve and intersection (from pavement edge)	22	34	22	same	48	same
Taxiway Object Free Area (TOFA)	131	189	131	same	259	same
TOFA at curve and intersection (from pavement edge)	47.8	67.6	47.8	same	92.2	same
Taxilane Safety Area (TLSA)	79	118	79	same	171	same
TLSA at curve and intersection (from pavement edge)	22	34	22	same	48	same
Taxilane Object Free Area (TLOFA)	115	162	115	same	225	same
TLOFA at curve and intersection (from pavement edge)	47.8	37.6	47.8	same	92.2	same
Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	106	152	106	same	215	same
Taxiway Centerline to Fixed or Moveable Object	66.5	93	66.5	same	129.5	same
Taxilane Centerline to Parallel Taxilane Centerline	97	140	97	same	198	same
Taxilane Centerline to Fixed or Moveable Object	57.5	81	57.5	same	112.5	same
Taxiway Wingtip Clearance	26	34	26	same	44	same
Taxilane Wingtip Clearance	18	27	18	same	27	same
Paved or Unpaved shoulders	Unpaved	Paved	Unpaved	same	Paved	same
Taxiway and Taxilane Separation	No objects In TSA or TOFA					
Taxiway Lighting	MITL		None	Reflectors	MITL	
Taxiway Marking	Centerline/Edge		Centerline		Centerline/edge	

INDEX OF SHEETS

MODIFICATION TO STANDARDS TABLE

AC 150/5300-13A, change 1

		Approval Date	ASN	Standard to be Modified	Description
MOS-1	Runway 10-28 east end longitudional gradient	4/26/2017	NA	AC 150/5300-13A, change 1, paragraph 313b(1), (2), and (3); Figure 3-22	Longitudional grade 1st 1/4 of runway 28. Cannot meet criteria without reconstruction of the first 1,050'.
MOS-2	Runway 10 Runway Protection Zone (RPZ)	5/5/2017	NA	AC 150/5300-13A, paragraph 310 and APP-1 memo September 27, 2012 "Interim Guidance on Land Uses Within a Runway Protection Zone"	Arrival and departure RPZ overlaps low volume public road by 0.44 acre.

PREPARED BY: BOHANNAN HUSTON, INC.
DATE: ____________

SUBMITTED BY: DONA ANA COUNTY, NEW MEXICO

APPROVAL

____
____

DATE: ________________

FAA REVIEWED UNDER ASN -----

FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGION

APPROVAL

APPROVED SUBJECT TO CONDITIONS/COMMENTS IN LETTER DATED ______________

DATE ______ MANAGER, LOUISIANA/NEW MEXICO ADO

Bohannan Huston
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

SHEET NO	TOTAL SHEETS
1	20

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

RUNWAY DATA TABLE
AC 150/5300-13A, change 1

	Existing		Ultimate		Initial		Runway 3-21 (Ultimate)	
Runway	10	28	10	28	3	21	3	21
Runway Design Code (RDC)	C-II-5000		C-III (<150.000#)-4000		C-II-4000		C-IV-2400	
Pavement Strength and Material Type	20,000# SW/PMBP		95,000# DW, material type TBD		60,000# DW, material type TBD		396,000# 2DW, material type TBD	
Strength by Wheel Loading	20,000 SW		95,000 DW		60,000 DW		396,000# 2DW	
Strength by PCN	3/F/D/Y/T		TBD		TBD		TBD	
Surface Treatment	None		Grooved		None		Grooved	
Effective Runway Gradient (%)	0.01%		0.01%		0.11%		0.05%	
Maximum Runway Gradient (%)	0.03%		0.03%		0.16%		0.27%	
Line of Sight criteria met	305.b(2) and end to end		305.b(2) and end to end		305.b(2) and end to end		305.b(2)	
Individual Runway Percent Wind Coverage	83.73% at 10.5 knots 89.44% at 13 knots 94.58% at 16 knots 98.23% at 20 knots		same		92.85% at 10.5 knots 86.66% at 13 knots 99.09% at 16 knots 99.83% at 20 knots		same	
Existing Combined Wind Coverage with ultimate two runways	83.73% at 10.5 knots 89.44% at 13 knots 94.58% at 16 knots 98.23% at 20 knots		97.60% at 10.5 knots 99.17% at 13 knots 99.85% at 16 knots 99.99% at 20 knots		97.60% at 10.5 knots 99.17% at 13 knots 99.85% at 16 knots 99.99% at 20 knots		same	
Ultimate Combined Wind Coverage	99.9% at 16 knots		99.9% at 16 knots		99.9% at 16 knots		99.9% at 16 knots	
Runway Length	9550		9550		6400		12000	
Runway Width	100		100 (AC Table 3-5 note 12)		100		150	
Runway High Point	4112.8		4112.8		4124		4124	
NAVAIDs	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone
Touchdown Zone Elevation	4111.3	4109.8	4111.3	4109.8	4119.0	4124.0	4119.0	4115.0
Runway Safety Area (RSA)								
RSA Length beyond departure end	1000		SAME	SAME	1000		SAME	
RSA Length prior to threshold	600		SAME	SAME	600	600	SAME	SAME
RSA Width	500		500		500/400 permissible, note 13		500	
Runway End Coordinates								
N Latitude	31° 53' 07.15"	31° 52' 32.08"	SAME	SAME	31° 53' 28.04"	31° 54' 19.65"	SAME	31° 55' 0.46"
W Longitude	106° 43' 03.09"	106° 41' 20.275"	SAME	SAME	106° 43' 19.96"	106° 42' 31.15"	SAME	106° 41' 52.57"
Runway Threshold Elevation	4111.3	4109.8	SAME	SAME	4114.0	4121.0	SAME	4108.0
Displaced Threshold End Coordinates								
N Latitude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
W Longitude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Displaced Threshold Elevation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Runway Lighting Type	MIRL		MIRL		MIRL		HIRL	
Approach Runway Protection Zone (RPZ)								
Approach RPZ Length	1700	1700	SAME	1700	1700	1700	SAME	2500
Approach RPZ Inner Width	500	500	SAME	1000	500	1000	SAME	1000
Approach RPZ Outer Width	1010	1010	SAME	1510	1010	1510	SAME	1750
Approach RPZ Acres	29.465	29.465	SAME	48.978	29.465	48.978	SAME	78.914
Departure Runway Protection Zone (RPZ)								
Departure RPZ Length	1700	1700	SAME	SAME	1700	1700	SAME	SAME
Departure RPZ Inner Width	500	500	SAME	SAME	500	500	SAME	SAME
Departure RPZ Outer Width	1010	1010	SAME	SAME	1010	1010	SAME	SAME
Departure RPZ Acres	29.465	29.465	SAME	SAME	29.465	29.465	SAME	SAME
Runway Marking Type	NPI	VISUAL	SAME	NPI	NPI	NPI	SAME	PIR
14 FAR Part 77								
Approach Category	Runway Larger Than Utility - Non-precision instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Non-precision instrument approach with visibility minimums as low as three-fourths of a statute mile	Runway Larger Than Utility - Non-precision instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Non-precision instrument approach with visibility minimums as low as three-fourths of a statute mile	Runway Larger Than Utility - Non-precision instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Non-precision instrument approach with visibility minimums as low as three-fourths of a statute mile	Runway Larger Than Utility - Non-precision instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Precision instrument runways
	C	B	C	D	C	D	C	D
Approach Type	NPI 1 mile	Visual	SAME	NPI 3/4 Mile	NPI 1 mile	NPI 3/4 Mile	SAME	PIR 1/2 Mile
Primary Surface Width	1000		1000		1000		1000	
Primary Surface Length	9950		9950		6800		12400	
Approach Surface Width at End	3500	4000	3500	4000	3500	4000	3500	16000
Approach Surface Length	10000	10000	SAME	SAME	10000	10000	SAME	10000/40000
Approach Surface Slope	34:1	34:1	34:1	34:1	34:1	34:1	34:1	50:1 then 40:1
Horizontal Surface Radius	10000	10000	10000	10000	10000	10000	10000	10000
Horizontal Surface elevation	4263		4274 with RW 3-21 construction		4274		4274	
Visibility Minimums	1 mile	Visual	SAME	3/4 mile	1 mile	3/4 mile	SAME	1/2 mile
Type of Aeronautical Survey Required	NVGS	NVGS	NVGS	NVGS	NVGS	NVGS	NVGS	VGS
Runway Departure Surface	No	No	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1	No	No	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1
Runway Object Free Area (ROFA)								
ROFA Length beyond departure end	1000	1000	SAME	SAME	1000	1000	SAME	SAME
ROFA Length prior to threshold	600	600	SAME	SAME	600	600	600	600
ROFA Width	800		SAME		800		SAME	
Runway Obstacle Free Zone (ROFZ)								
ROFZ Length	9950		9950		6800		12400	
ROFZ Width	400		SAME		400		SAME	
Inner-approach OFZ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Applies, see AC paragraph 308.b for dimensions
Inner-transitional OFZ	n/a		n/a		n/a		IT OFZ	

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REVISIONS

DATE: X	COMMENT

NMAD GRANT: 576-15.02

DRAWN BY: NJS
REVIEWED BY: MH
SCALE: -
DATE: Apr 30, 2018
BHI PROJECT NO: 20160271

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
RUNWAY DATA TABLE 1 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

Bohannan Huston
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SHEET NO
2 – 20

RUNWAY DATA TABLE
AC 150/5300-13A, change 1

	Existing		Ultimate		Initial		Runway 3-21 (Ultimate)	
Runway	10	28	10	28	3	21	3	21
Approach/Departure (Threshold Siting) Surface								
AC 150/5300-13A, Table 3-2. Approach/Departure Standards Table. Approach ends only (Lines 1 through 8)	Approach end of runways expected to support instrument night operations serving greater than approach Category B aircraft.	Approach end of runways expected to accommodate instrument approaches having visibility minimums ≥ 3/4 but <1 statute mile (≥ 1.2 km but < 1.6 km), day or night.	Approach end of runways expected to support instrument night operations serving greater than approach Category B aircraft.	Approach end of runways expected to accommodate instrument approaches having visibility minimums ≥ 3/4 but <1 statute mile (≥ 1.2 km but < 1.6 km), day or night.	Approach end of runways expected to support instrument night operations serving greater than approach Category B aircraft.	Approach end of runways expected to accommodate instrument approaches having visibility minimums ≥ 3/4 but <1 statute mile (≥ 1.2 km but < 1.6 km), day or night.	Approach end of runways expected to support instrument night operations serving greater than approach Category B aircraft.	Approach end of runways expected to accommodate instrument approaches having visibility minimums < 3/4 statute mile (1.2 km).
Dimensions ↓\ Table line number →	5	3	5	6	5	6	5	7
A	200	0	200	200	200	200	200	200
B	800	400	800	800	800	800	800	800
C	3800	1000	3800	3800	3800	3800	3800	3800
D	10000	1500	10000	10000	10000	10000	10000	10000
E	0	8500	0	0	0	0	0	0
Slope/ OCS	20:1	20:1	20:1	20:1	20:1	20:1	20:1	34:01:00
Notes	See Table 3-2 notes 1 and 2	See Table 3-2 note 2	See Table 3-2 notes 1 and 2	See Table 3-2 note 2	See Table 3-2 notes 1 and 2	See Table 3-2 note 2	See Table 3-2 notes 1 and 2	See Table 3-2 note 2
Objects penetrating the surface	None	None	None	None	None	None	None	None
Visual and Instrument NAVAIDS	REIL, PAPI-2L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L, MALSR
Shoulder Width	20		20 note 12		10		25	
Paved shoulders	not required		Recommended		not required		Required	
Shoulder surface	Base Course		Base Course		TBD		TBD	
Blast Pad Width	140		140 note 12		120		200	
Blast Pad Length	200		200		150		200	
Blast Pad Surface	PMBP		PMBP		TBD		TBD	
Crosswind Component	16 knots		16 knots		16 knots		20 knots	
Precision Obstacle Free Zone (POFZ) Length	n/a	n/a	n/a	n/a	n/a		n/a	
Precision Obstacle Free Zone (POFZ) Width	n/a	n/a	n/a	n/a	n/a	n/a	n/a	800
DECLARED DISTANCE TABLE								
Take-Off Run Available (TORA)	9550	9550	9550	9350 for 40:1 Departure Surface 9550 without Departure Surface	6400	6400	12000	12000
Take-Off Distance Available (TODA)	9550	9550	9550	9350 for 40:1 Departure Surface 9550 without Departure Surface	6400	6400	12000	12000
Accelerate Stop Distance Available (ASDA)	9550	9550	9550	9550	6400	6400	12000	12000
Landing Distance Available (LDA)	9550	9550	9550	9550	6400	6400	12000	12000
Instrument Approach Procedures	RNAV GPS 1 mile	None	RNAV GPS 1 mile	PIR 3/4 mile	RNAV GPS 1 mile	PIR 3/4 mile	RNAV GPS 1 mile	PIR 1/2 mile
Runway Separation to								
Parallel Runway centerline	NA		NA		NA		NA	
Holding Position	250		292		250		292	
Note:	Existing		elevation adjustment, AC note 8				elevation adjustment, AC note 8	
Parallel Taxiway/Taxilane centerline	445 Existing		445 Existing south of RW 10-28, 300 north of RW 10-28		400 for ultimate development		400	
Distance RW centerline to clear tail height (ROFZ)	200		200		200		364.4	
Greatest Runway to Taxiway distance	440		440 south/300 north		300		400	
Aircraft parking area	400		500		400		500	
Helicopter Touchdown Pad								
Small Helicopter 7,000 lbs or less	500		500		500		500	
Medium Helicopter 7,001 to 12,500 lbs	500		500		500		500	
Large Helicopter over 12,500 lbs	700		700		700		700	
Building Restriction Line (35' height) from runway centerline	745		745		745		745	
Inner-transitional OFZ								
ILS Type (from input)	none	none	none	none	none	none	none	none
CAT-I								
H	n/a	n/a	n/a	n/a	n/a	n/a	n/a	32.6
CAT-II/III								
H	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Y	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CAT-I/CAT-II/III Inner-transitional OFZ distance to clear ADG tail height. Assumes taxiway is at same elevation as runway.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	165
Building Restriction Line (35')								
Distance from Runway centerline	745		745		745		745	

REVISIONS
DATE: X
COMMENT

NMAD GRANT: 576-15.02

DRAWN BY: NJS
REVIEWED BY: MH
SCALE: -
DATE: Apr 30, 2018
BHI PROJECT NO: 20160271

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
RUNWAY DATA TABLE 2 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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SHEET NO
3 – 20

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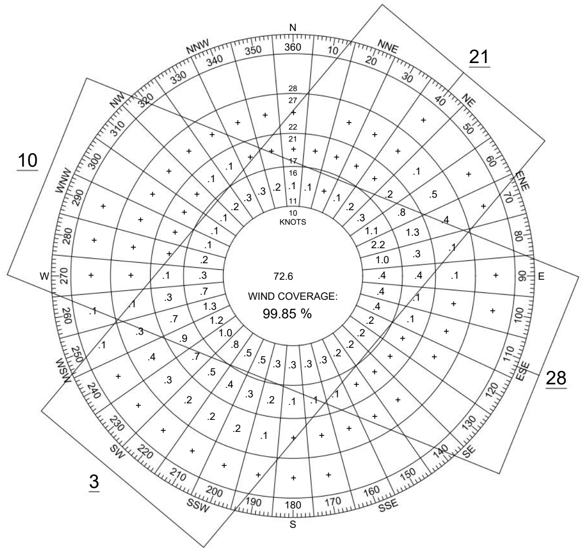
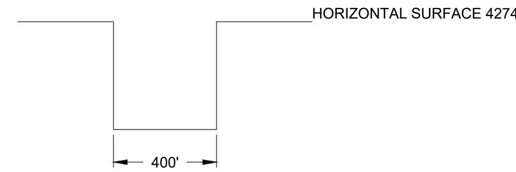
WIND COVERAGE TABLE

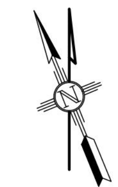
Runways	Crosswind Component 10.5 knots (12 mph)	13 knots (15 mph)	16 knots (18 mph)	20 knots (23 mph)
Runway 10-28	83.73%	89.44%	94.58%	98.23%
Future Runway 3-21	92.85%	96.66%	99.09%	99.83%
Combined R10-28 & R3-21	97.07%	99.17%	99.85%	99.99%

Source: Afton Station, Dona Ana County, NM. Period: June 18,2014 through June 18, 2016.





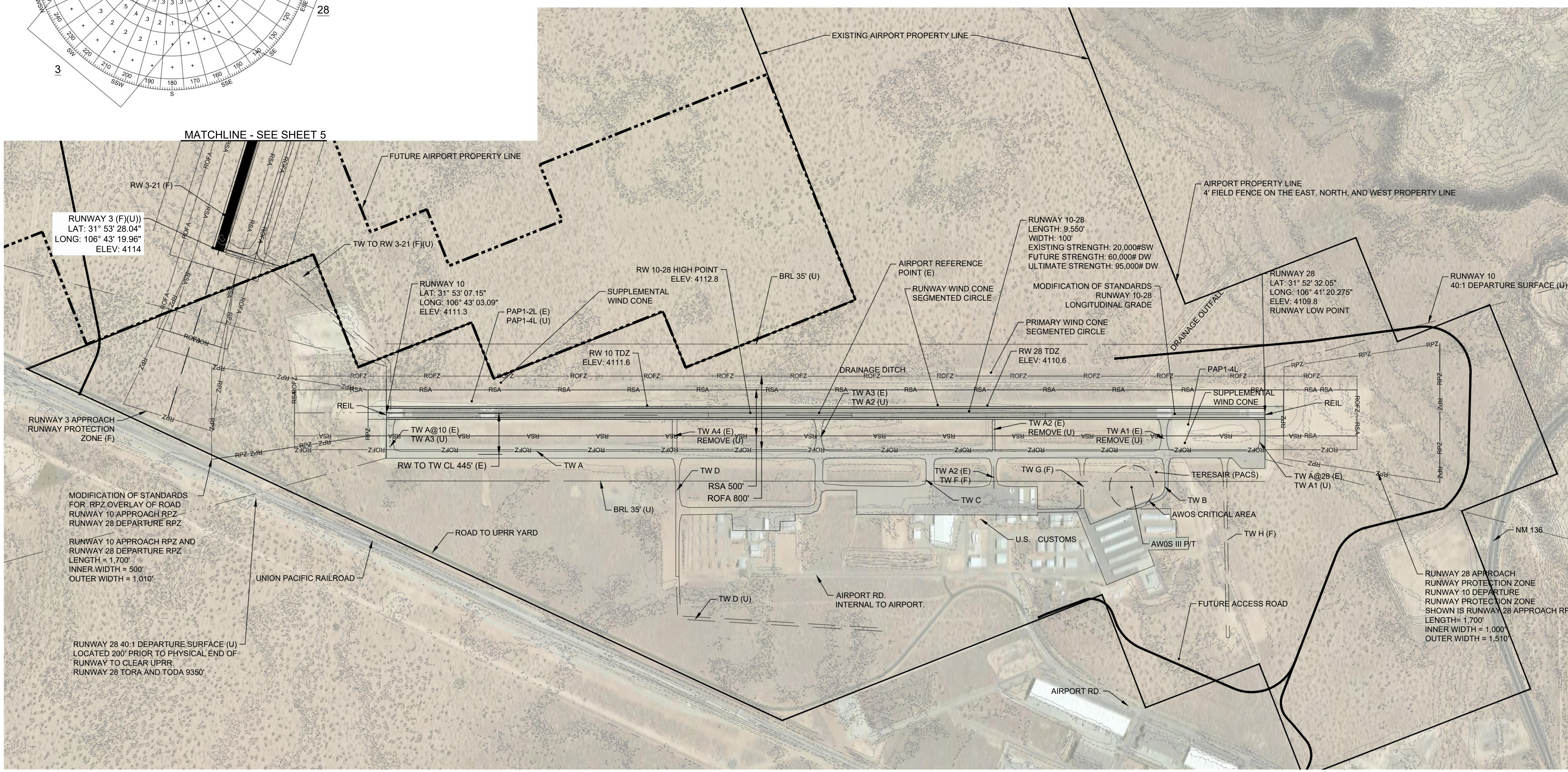
RUNWAY OBSTACLE FREE ZONE (OFZ)
RUNWAY 3-21 INITIAL AND ULTIMATE
RUNWAY 10-28 EXISTING, INTERMEDIATE AND ULTIMATE



8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR 08-10-2017

600 300 0 600
1"=600'

NOTES:
1. SEE PART 77 DRAWING FOR ROAD AND RAILROAD INTERSECTION OF PART 77 APPROACH SURFACES.
2. SEE SHEET XX FOR DEVELOPMENT NORTH OF RUNWAY 10-28.
3. SEE SHEET XX FOR DEVELOPMENT SOUTH OF RUNWAY 10-28.



REVISIONS

DATE: X	COMMENT

DRAWN BY:	NJS
REVIEWED BY:	MH
SCALE:	1" = 600'
DATE:	Apr 30, 2018
BHI PROJECT NO:	20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
AIRPORT LAYOUT DRAWING 1 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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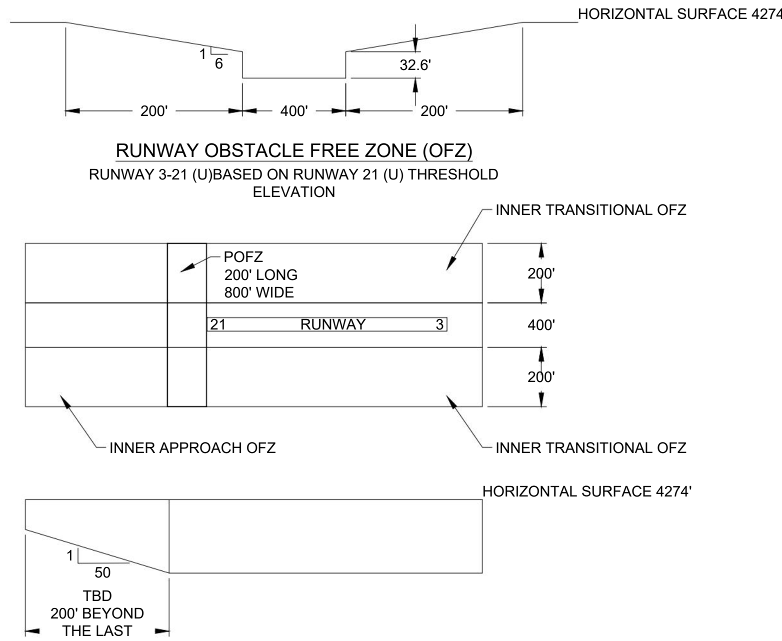
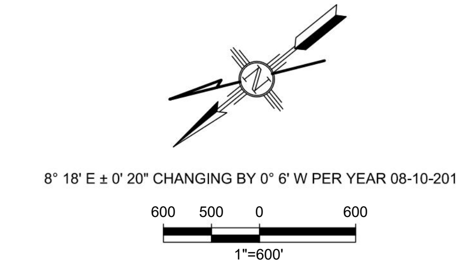


RUNWAY OBSTACLE FREE ZONE (OFZ)

RUNWAY 3-21 (U)BASED ON RUNWAY 21 (U) THRESHOLD ELEVATION

APPROACH OFZ

RUNWAY 3-21 (U)



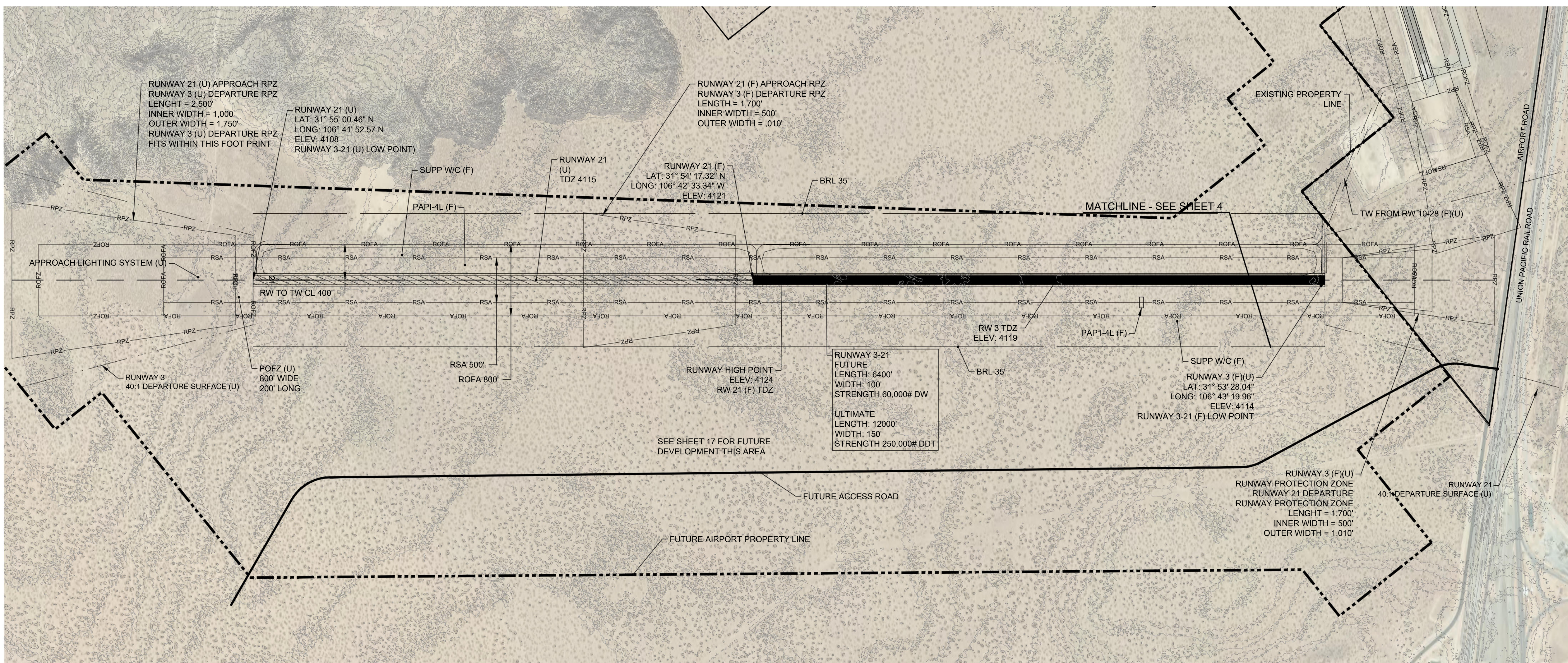
NOTES:

1. SEE PART 77 DRAWING FOR ROAD AND RAILROAD INTERSECTION OF PART 77 APPROACH SURFACES.

LEGEND:

RUNWAY 3-21 INITIAL

RUNWAY 3-21 ULTIMATE



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REVISIONS

DATE: X	COMMENT

DRAWN BY:	NJS
REVIEWED BY:	MH
SCALE:	1" = 600'
DATE:	Apr 30, 2018
BHI PROJECT NO:	20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
AIRPORT LAYOUT DRAWING 2 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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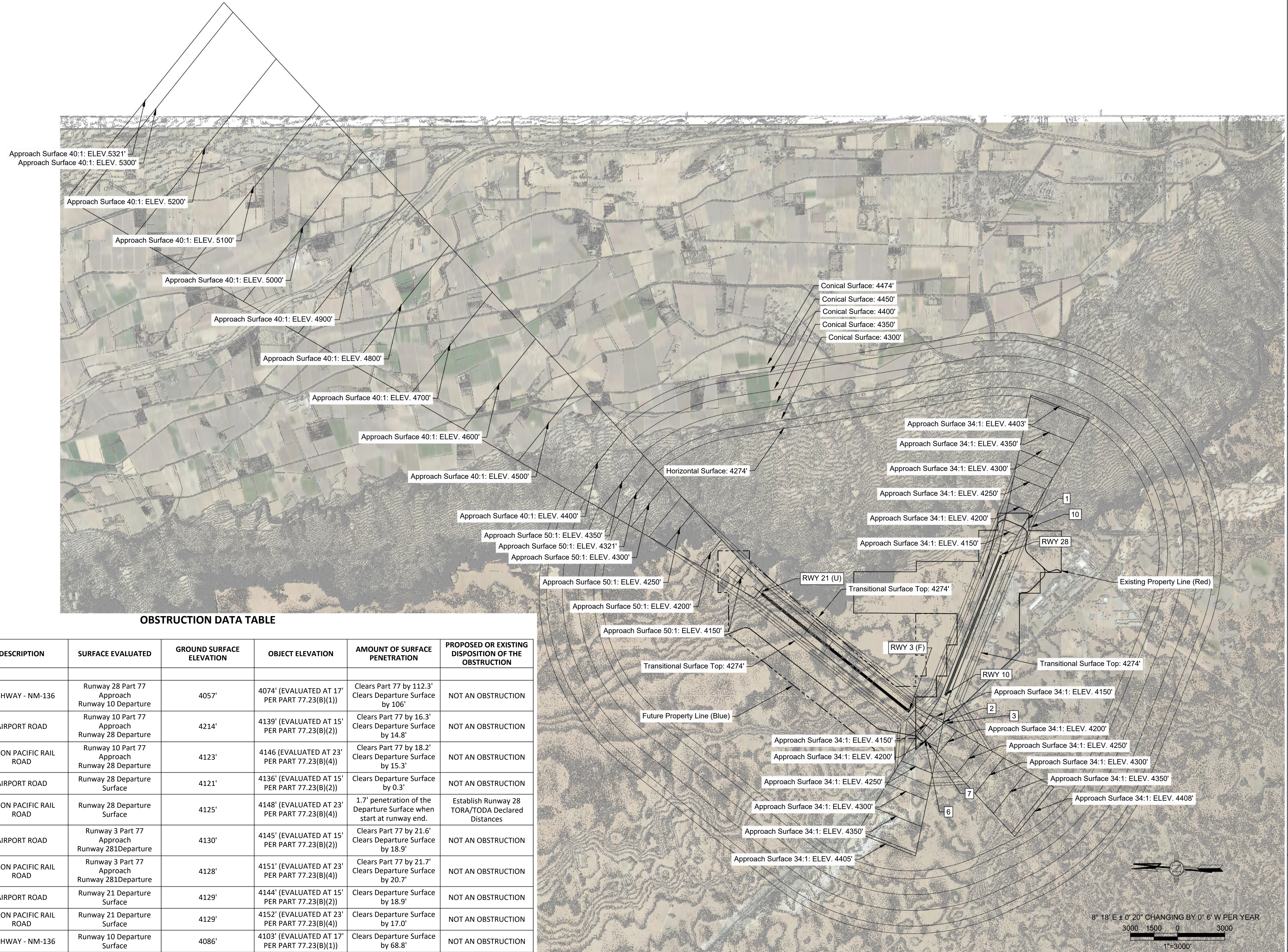
SHEET NO

5 – 20



OBSTRUCTION DATA TABLE

OBJECT IDENTIFICATION NUMBER	DESCRIPTION	SURFACE EVALUATED	GROUND SURFACE ELEVATION	OBJECT ELEVATION	AMOUNT OF SURFACE PENETRATION	PROPOSED OR EXISTING DISPOSITION OF THE OBSTRUCTION
1	HIGHWAY - NM-136	Runway 28 Part 77 Approach Runway 10 Departure	4057'	4074' (EVALUATED AT 17' PER PART 77.23(B)(1))	Clears Part 77 by 112.3' Clears Departure Surface by 106'	NOT AN OBSTRUCTION
2	AIRPORT ROAD	Runway 10 Part 77 Approach Runway 28 Departure	4214'	4139' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Part 77 by 16.3' Clears Departure Surface by 14.8'	NOT AN OBSTRUCTION
3	UNION PACIFIC RAIL ROAD	Runway 10 Part 77 Approach Runway 28 Departure	4123'	4146 (EVALUATED AT 23' PER PART 77.23(B)(4))	Clears Part 77 by 18.2' Clears Departure Surface by 15.3'	NOT AN OBSTRUCTION
4	AIRPORT ROAD	Runway 28 Departure Surface	4121'	4136' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Departure Surface by 0.3'	NOT AN OBSTRUCTION
5	UNION PACIFIC RAIL ROAD	Runway 28 Departure Surface	4125'	4148' (EVALUATED AT 23' PER PART 77.23(B)(4))	1.7' penetration of the Departure Surface when start at runway end.	Establish Runway 28 TORA/TODA Declared Distances
6	AIRPORT ROAD	Runway 3 Part 77 Approach Runway 281Departure	4130'	4145' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Part 77 by 21.6' Clears Departure Surface by 18.9'	NOT AN OBSTRUCTION
7	UNION PACIFIC RAIL ROAD	Runway 3 Part 77 Approach Runway 281Departure	4128'	4151' (EVALUATED AT 23' PER PART 77.23(B)(4))	Clears Part 77 by 21.7' Clears Departure Surface by 20.7'	NOT AN OBSTRUCTION
8	AIRPORT ROAD	Runway 21 Departure Surface	4129'	4144' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Departure Surface by 18.9'	NOT AN OBSTRUCTION
9	UNION PACIFIC RAIL ROAD	Runway 21 Departure Surface	4129'	4152' (EVALUATED AT 23' PER PART 77.23(B)(4))	Clears Departure Surface by 17.0'	NOT AN OBSTRUCTION
10	HIGHWAY - NM-136	Runway 10 Departure Surface	4086'	4103' (EVALUATED AT 17' PER PART 77.23(B)(1))	Clears Departure Surface by 68.8'	NOT AN OBSTRUCTION

Topographic data from Doña Ana County 2010

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REVISIONS

DATE: X | COMMENT

DRAWN BY: NJS
REVIEWED BY: MH
SCALE: 1" = 3000'
DATE: Apr 30, 2018
BHI PROJECT NO: 20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
PART 77 AIRSPACE MAP

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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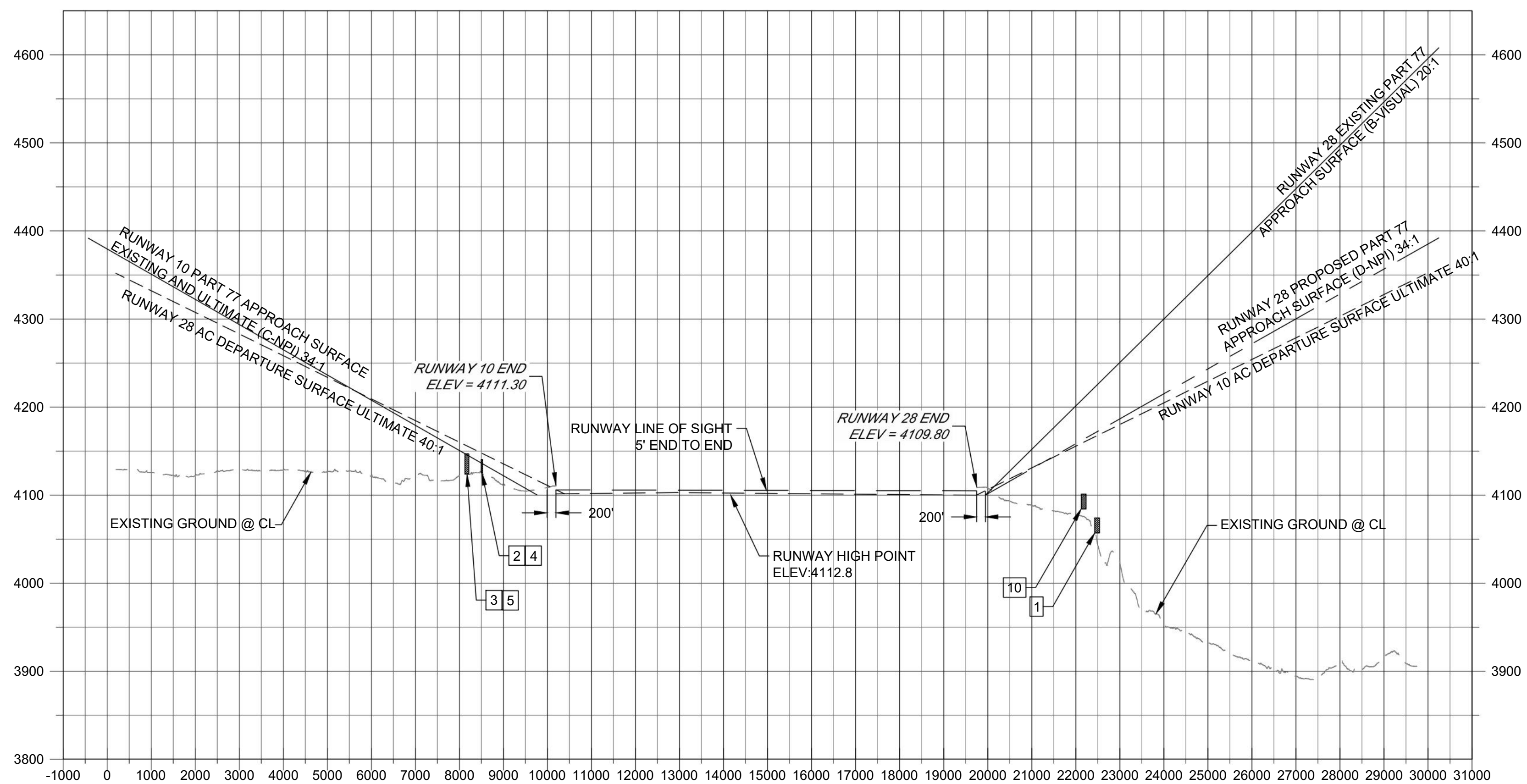
SHEET NO
6 – 20



EXISTING GROUND CONTOURS FROM DONA ANA COUNTY

PLAN DRAWING SCALE: 1" = 2000'
HORIZONTAL SCALE: 1" = 2000' VERTICAL SCALE: 1" = 100'

NOTE:
UPPR (OBJECT #5 IN OBSTRUCTION DATA TABLE) PENETRATES THE RUNWAY 28 40:1 DEPARTURE SURFACE.

WHEN THE DEPARTURE SURFACE IS ESTABLISHED, RUNWAY 28 DECLARED DISTANCES OF 9.350 FEET FOR TORA AND TODA WILL BE REQUIRED TO CLEAR THIS DEPARTURE SURFACE.

DEPARTURE SURFACE SHOWN A7 ULTIMATE LOCATION

RUNWAY LINE OF SIGHT (E)(U)
MEETS AC 150/5300-13A (CHANGE 1)
PARAGRAPH 305.b(1) AND (2) CRITERIA.

OBSTRUCTION DATA TABLE

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Topographic data from Doña Ana County 2010
*OBJECTS 6 THRU 9 NOT SHOWN ON THIS SHEET

2000 1000 0 2000
1"=2000'

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REVISIONS

DATE: X	COMMENT

DRAWN BY: NJS
REVIEWED BY: MH
SCALE:
DATE: Apr 30, 2018
BHI PROJECT NO: 20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
RUNWAY 10-28 AIRSPACE PROFILE

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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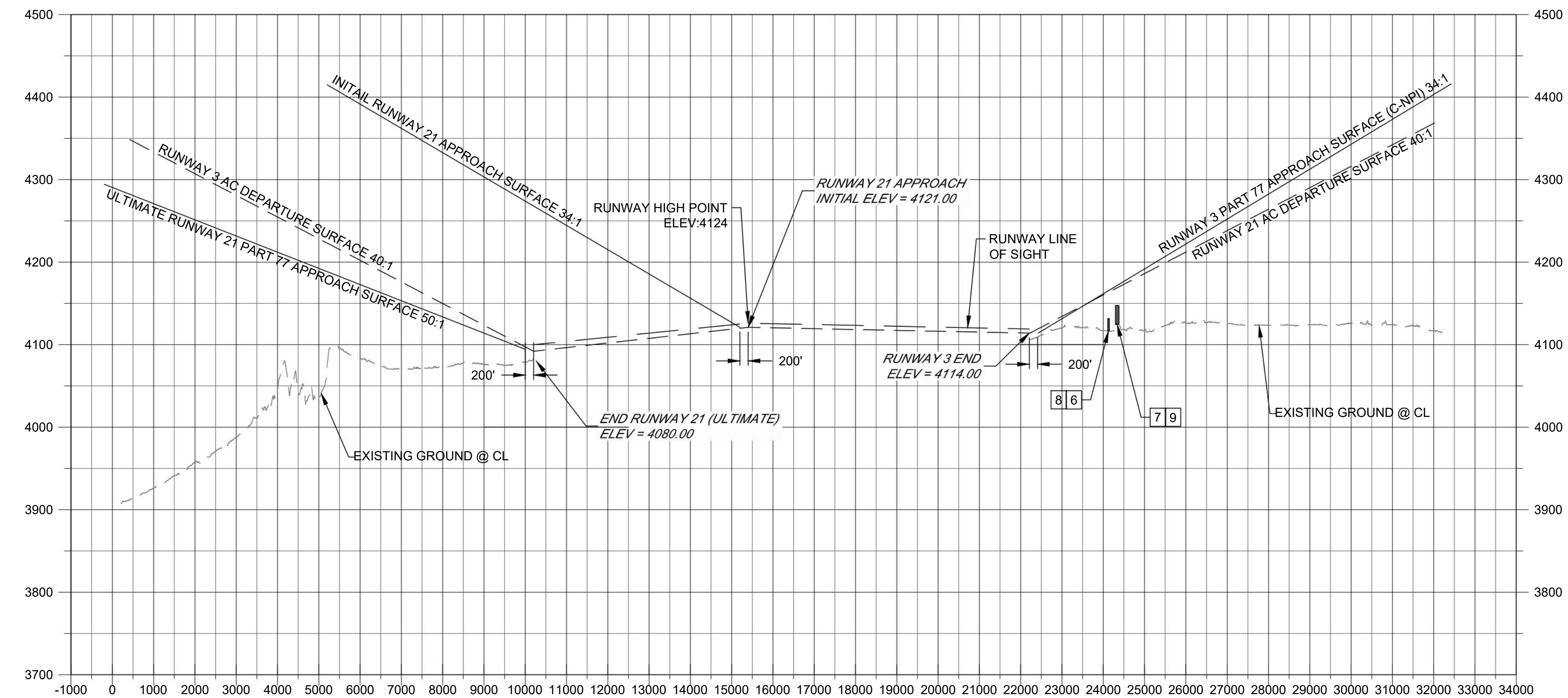
7 – 20



EXISTING GROUND CONTOURS FROM DONA ANA COUNTY

PLAN DRAWING SCALE: 1" = 2000'
HORIZONTAL SCALE: 1" = 2000' VERTICAL SCALE: 1" = 100'

RUNWAY LINE OF SIGHT (E)(U)
MEETS AC 150/5300-13A (CHANGE 1)
PARAGRAPH 305.b(1) AND (2) CRITERIA.

OBSTRUCTION DATA TABLE

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Topographic data from Doña Ana County 2010

*OBJECTS 1 THRU 5 NOT SHOWN ON THIS SHEET

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1"=2000'

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REVISIONS

DATE: X	COMMENT

DRAWN BY: NJS
REVIEWED BY: MH
SCALE:
DATE: Apr 30, 2018
BHI PROJECT NO: 20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
RUNWAY 3-21 AIRSPACE PROFILE

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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SHEET NO

KEYED NOTES:

2 & 4 AIRPORT RD. 15' HEIGHT SHOWN
3 & 5 UNION PACIFIC RAILROAD 23' HEIGHT SHOWN

*SEE SHEET 6 FOR OBSTRUCTION TABLE

NOTES:

ITEM 5 IS THE UPRR AT THE FUTURE RUNWAY 28 40:1 DEPARTURE SURFACE. THIS ITEM IS NOT A PART 77 PENETRATION.

THE UPRR EVALUATED AT GROUND PLUS 23' WOULD BE A 1.7' PENETRATION OF THIS SURFACE IF THE SURFACE BEGAN AT THE RUNWAY 28 LENGTH OF 9550'

DISPOSITION IS TO TO ESTABLISH RUNWAY 28 TAKE-OFF DECLARED DISTANCES (TORA AND TODA) OF 9350' WHICH SHIFTS THE START OF THIS SURFACE TO CLEAR THE RAILROAD.

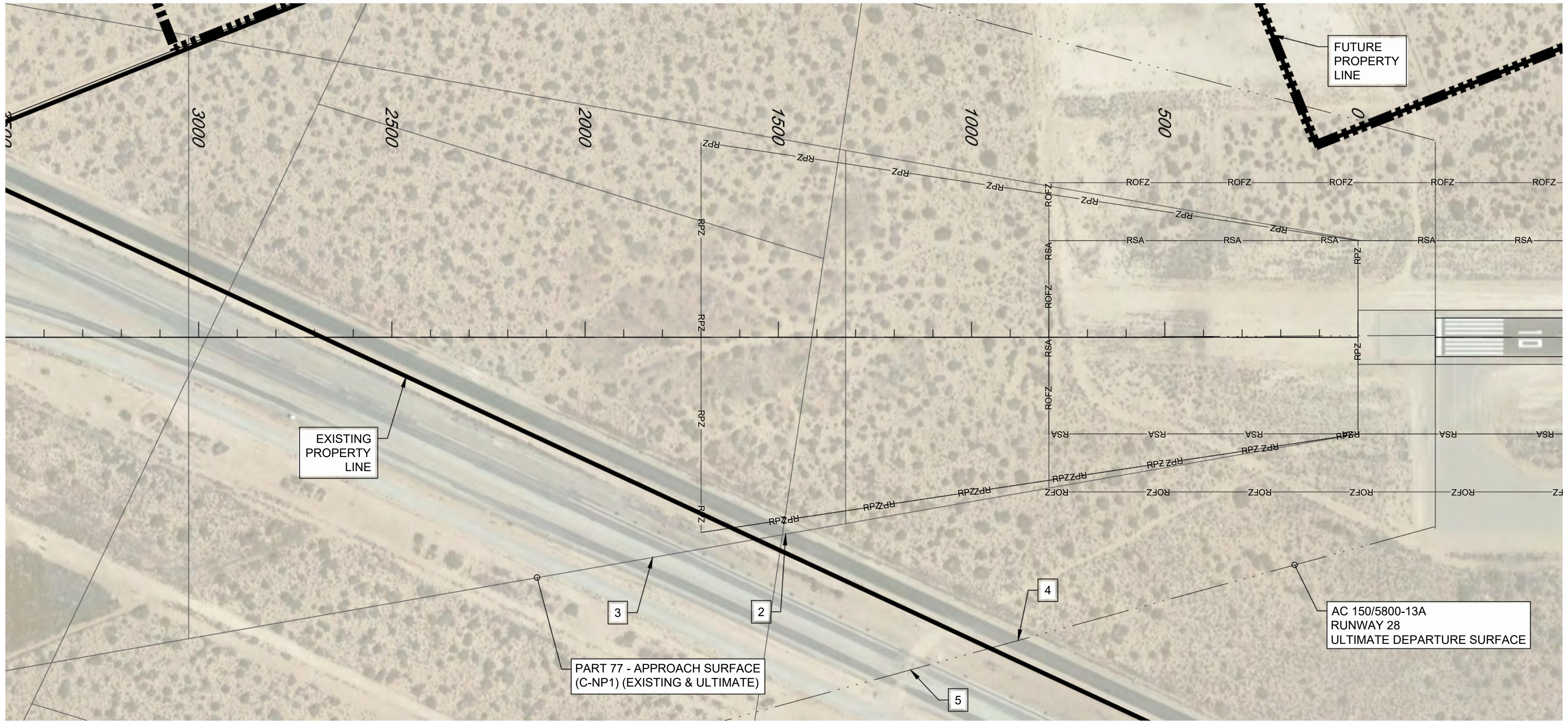
ITEM 4 IS THE AIRPORT ROAD AT THE FUTURE 40:1 RUNWAY 28 DEPARTURE SURFACE. THE ROAD GROUND PLUS 15 FEET IS NOT A PENETRATION OF THE PART 77 APPROACH SURFACE OR OF THE RUNWAY 28 AC DEPARTURE SURFACE WITH THE ABOVE RUNWAY 28 DECLARED DISTANCES.

NO OTHER OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40:1 DEPARTURE SURFACE.

LEGEND

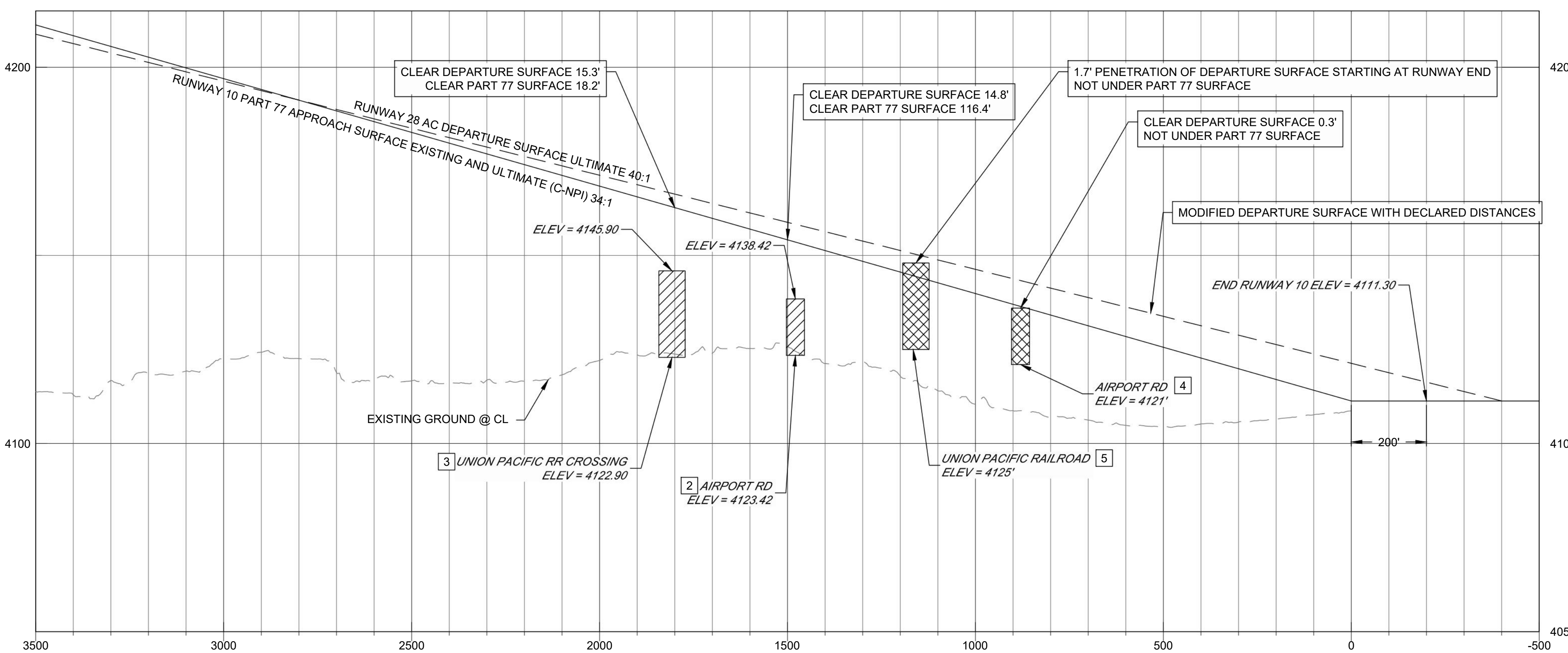
OBJECT UNDER PART 77 DEPARTURE SURFACE

OBJECT UNDER RUNWAY DEPARTURE SURFACE ONLY



RUNWAY 10

PLAN DRAWING SCALE: 1" = 200'
HORIZONTAL SCALE: 1" = 200' VERTICAL SCALE: 1" = 20'



8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

200 100 0 200

1"=200'

REVISIONS

DATE: X | COMMENT

DRAWN BY: NJS
REVIEWED BY: MH
SCALE: 1" = 200'
DATE: Apr 30, 2018
BHI PROJECT NO: 20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
RUNWAY 10, PART 77 APPROACH SURFACE PLAN & PROFILE

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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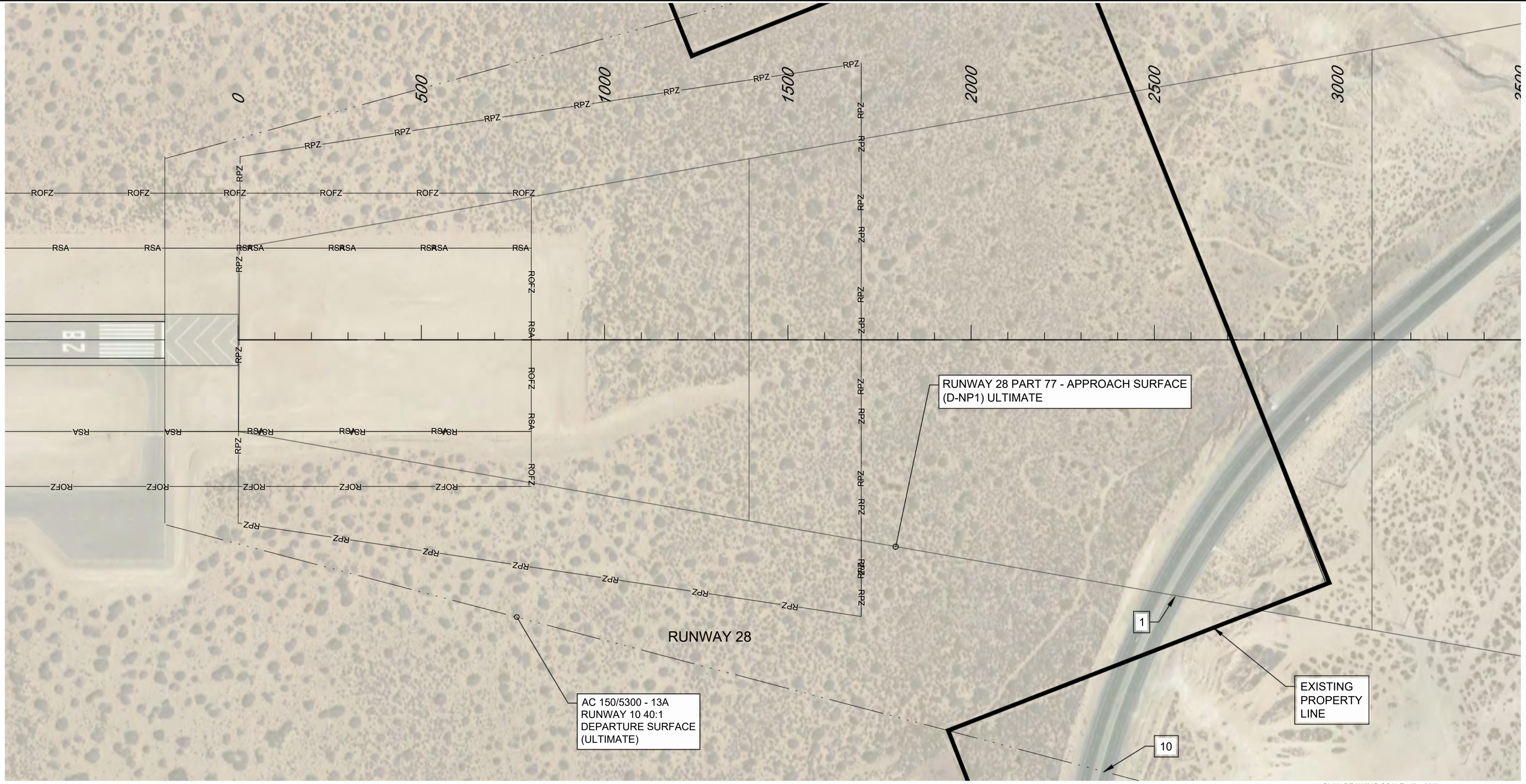
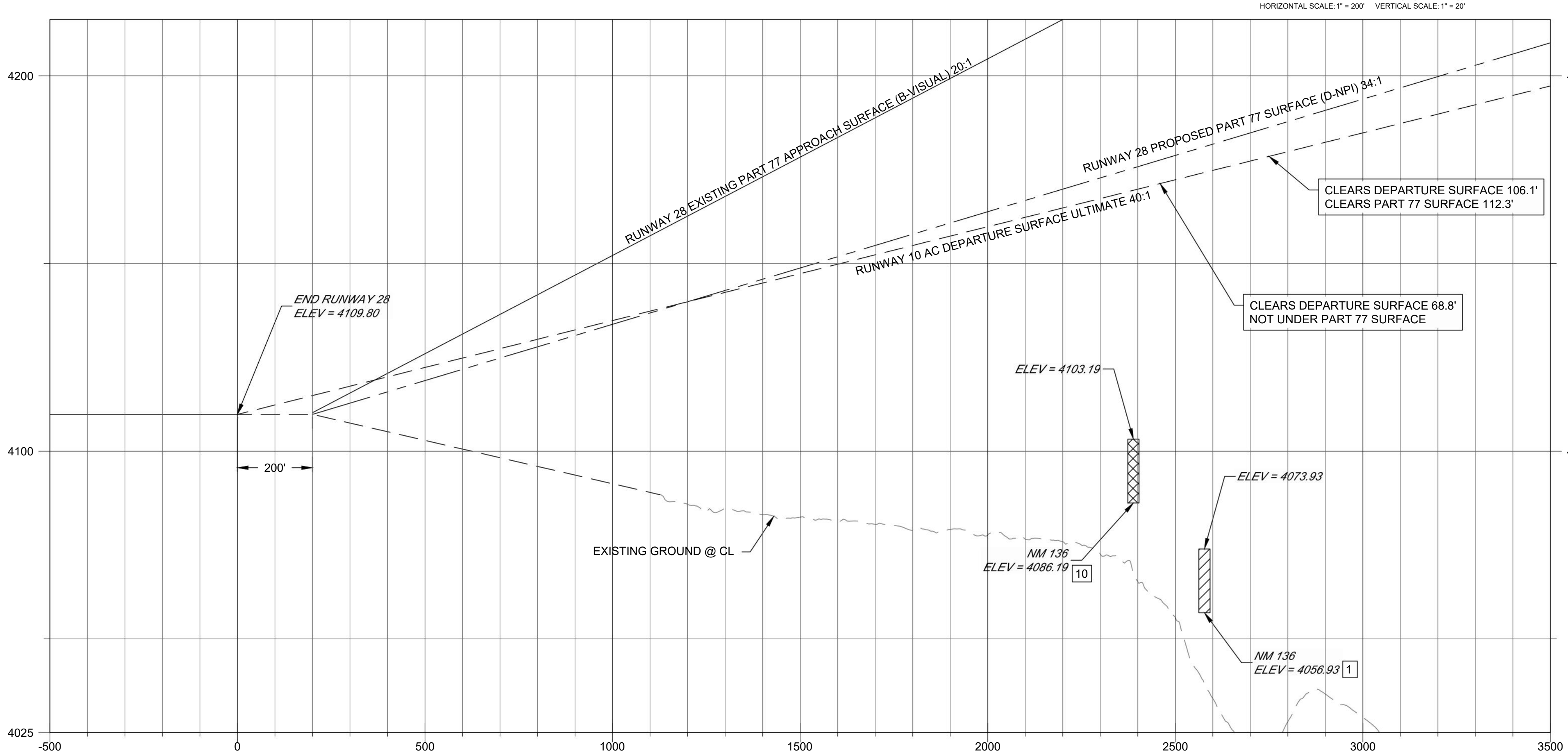
SHEET NO
9 – 20



PLAN DRAWING SCALE: 1" = 200'
HORIZONTAL SCALE: 1" = 200' VERTICAL SCALE: 1" = 20'



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KEYED NOTES:
1 NM 136 17' HEIGHT SHOWN

*SEE SHEET 6 FOR OBSTRUCTION TABLE

NOTES:
NO OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40:1 DEPARTURE SURFACE

LEGEND
OBJECT UNDER PART 77 DEPARTURE SURFACE
OBJECT UNDER RUNWAY DEPARTURE SURFACE ONLY

8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

200 100 0 200
1"=200'

REVISIONS

DATE: X	COMMENT

NMAD GRANT: 576-15.02

DRAWN BY:	NJS
REVIEWED BY:	MH
SCALE:	1" = 200'
DATE:	Apr 30, 2018
BHI PROJECT NO:	20160271

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
RUNWAY 28, PART 77 APPROACH SURFACE PLAN & PROFILE

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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SHEET NO
10 — 20

KEYED NOTES:

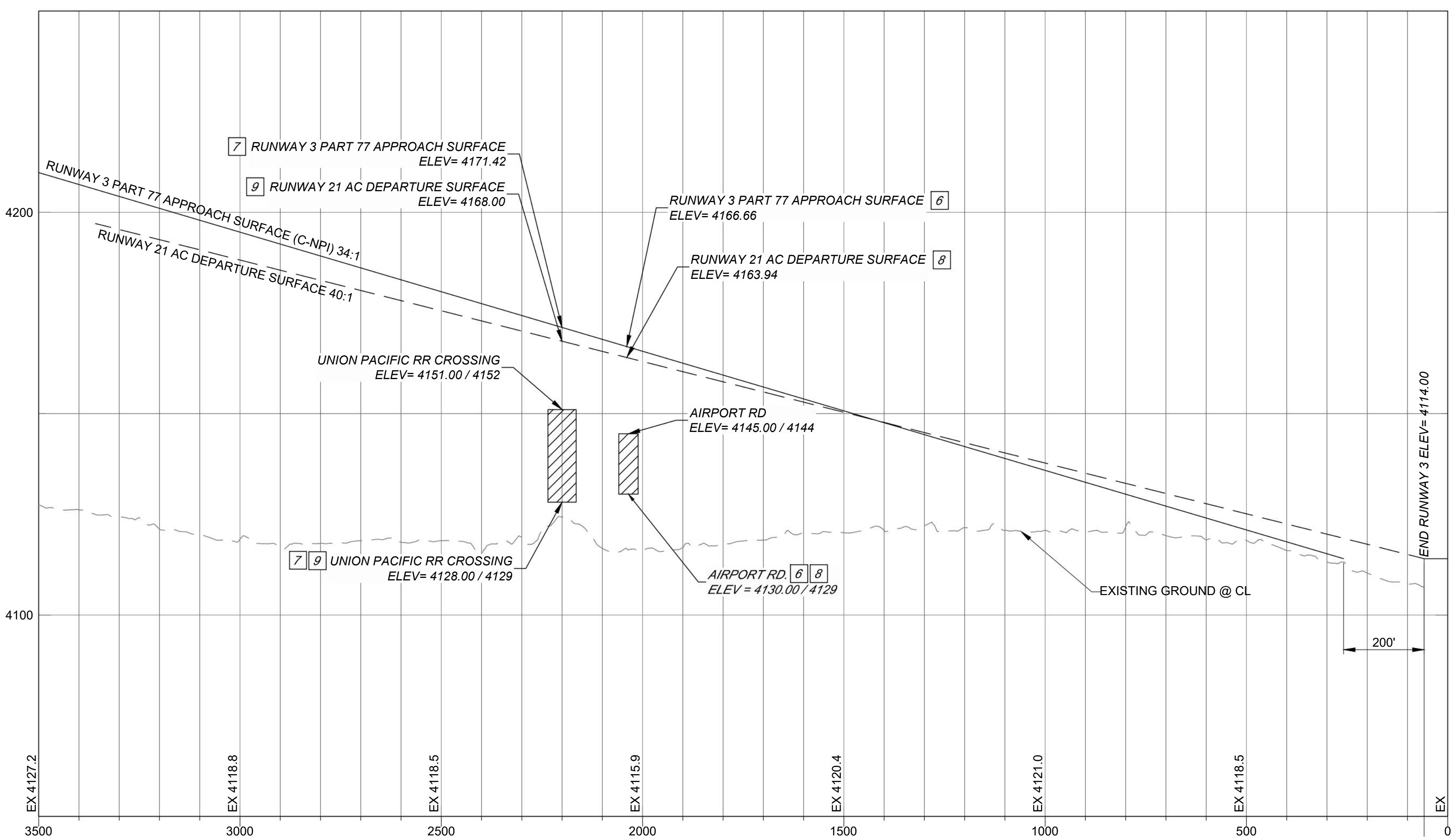
6 & 8	AIRPORT ROAD 15' HEIGHT SHOWN
7 & 9	UNION PACIFIC RR 23' HEIGHT SHOWN

*SEE SHEET 6 FOR OBSTRUCTION TABLE

RUNWAY 3

PLAN DRAWING SCALE: 1" = 200'
HORIZONTAL SCALE: 1" = 200' VERTICAL SCALE: 1" = 20'

NO OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40:1 DEPARTURE SURFACE



8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

200 100 0 200

1"=200'

REVISIONS

DATE: X	COMMENT

DRAWN BY:	NJS
REVIEWED BY:	MH
SCALE:	1" = 200'
DATE:	Apr 30, 2018
BHI PROJECT NO:	20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
RUNWAY 3, PART 77 APPROACH SURFACE PLAN & PROFILE

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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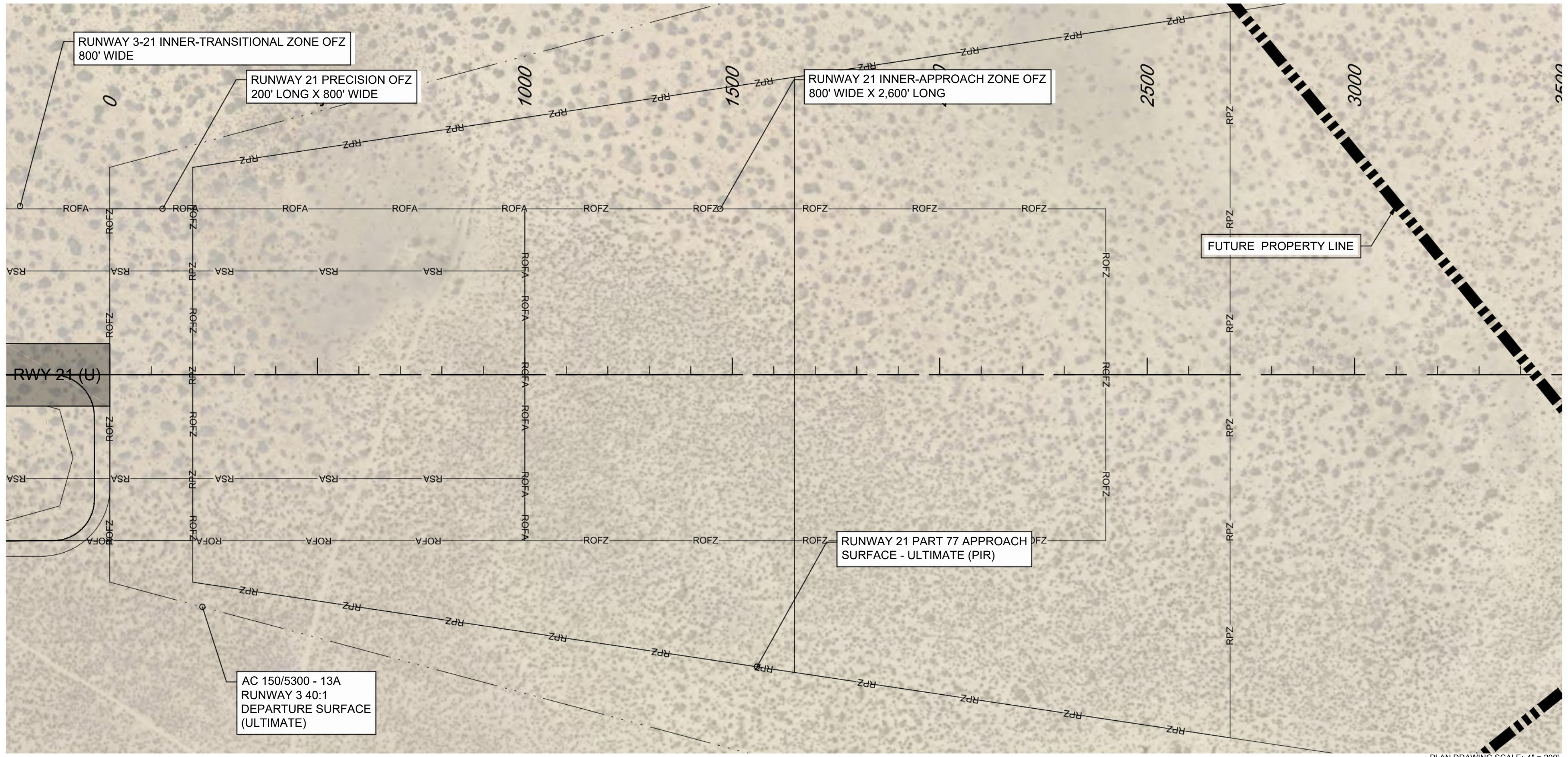
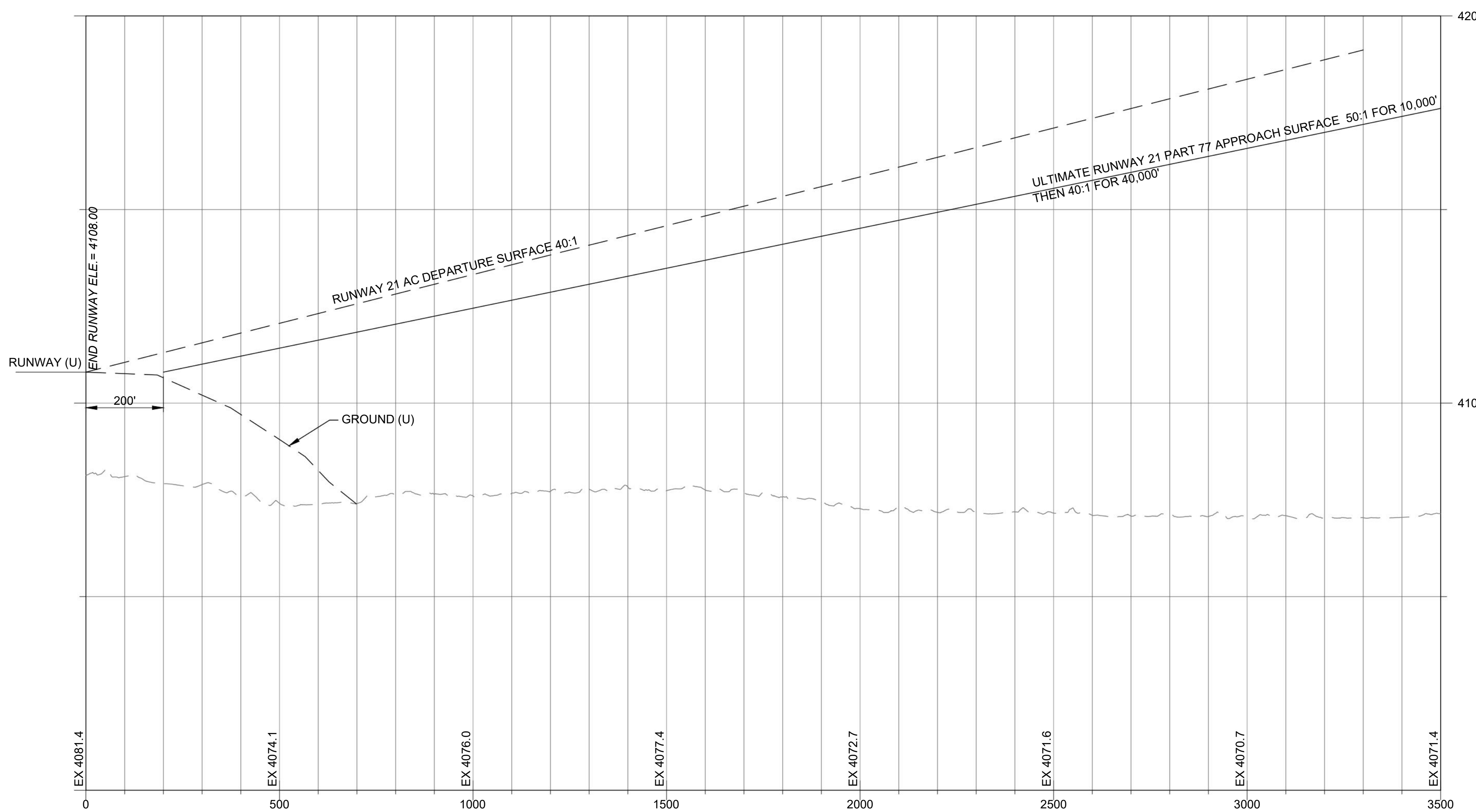
SHEET NO
11 – 20



RUNWAY 21 ULTIMATE

PLAN DRAWING SCALE: 1" = 200'
HORIZONTAL SCALE: 1" = 200' VERTICAL SCALE: 1" = 20'



NO OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40:1 DEPARTURE SURFACE

8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

200 100 0 200

1"=200'

REVISIONS

DATE: X	COMMENT

DRAWN BY:	NJS
REVIEWED BY:	MH
SCALE:	1" = 200'
DATE:	Apr 30, 2018
BHI PROJECT NO:	20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
ULTIMATE RUNWAY 21 PART 77 APPROACH SURFACE PLAN & PROFILE

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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SHEET NO
12 – 20

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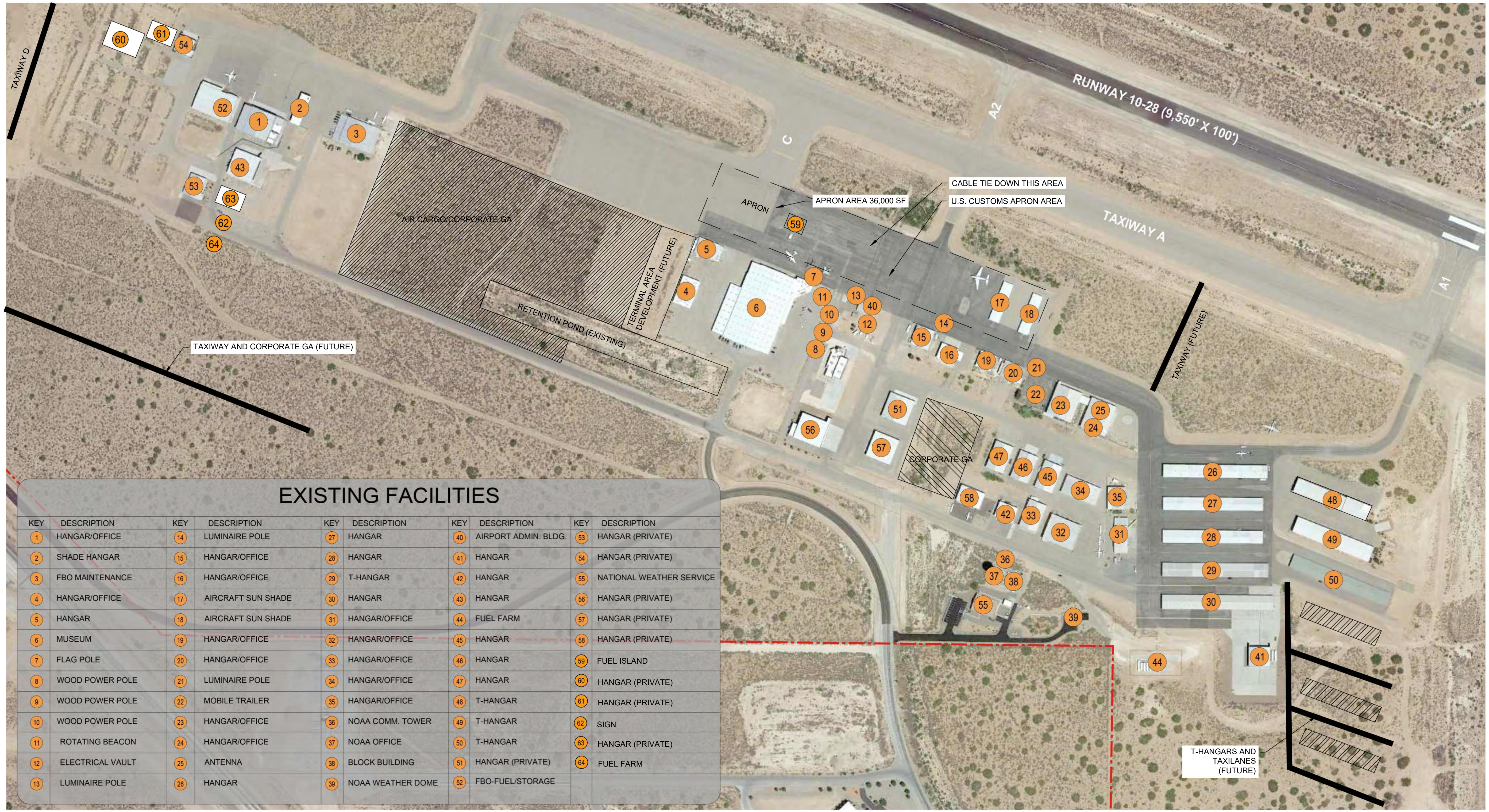

EXISTING FACILITIES

KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION
1	HANGAR/OFFICE	14	LUMINAIRE POLE	27	HANGAR	40	AIRPORT ADMIN. BLDG.	53	HANGAR (PRIVATE)
2	SHADE HANGAR	15	HANGAR/OFFICE	28	HANGAR	41	HANGAR	54	HANGAR (PRIVATE)
3	FBO MAINTENANCE	16	HANGAR/OFFICE	29	T-HANGAR	42	HANGAR	55	NATIONAL WEATHER SERVICE
4	HANGAR/OFFICE	17	AIRCRAFT SUN SHADE	30	HANGAR	43	HANGAR	56	HANGAR (PRIVATE)
5	HANGAR	18	AIRCRAFT SUN SHADE	31	HANGAR/OFFICE	44	FUEL FARM	57	HANGAR (PRIVATE)
6	MUSEUM	19	HANGAR/OFFICE	32	HANGAR/OFFICE	45	HANGAR	58	HANGAR (PRIVATE)
7	FLAG POLE	20	HANGAR/OFFICE	33	HANGAR/OFFICE	46	HANGAR	59	FUEL ISLAND
8	WOOD POWER POLE	21	LUMINAIRE POLE	34	HANGAR/OFFICE	47	HANGAR	60	HANGAR (PRIVATE)
9	WOOD POWER POLE	22	MOBILE TRAILER	35	HANGAR/OFFICE	48	T-HANGAR	61	HANGAR (PRIVATE)
10	WOOD POWER POLE	23	HANGAR/OFFICE	36	NOAA COMM. TOWER	49	T-HANGAR	62	SIGN
11	ROTATING BEACON	24	HANGAR/OFFICE	37	NOAA OFFICE	50	T-HANGAR	63	HANGAR (PRIVATE)
12	ELECTRICAL VAULT	25	ANTENNA	38	BLOCK BUILDING	51	HANGAR (PRIVATE)	64	FUEL FARM
13	LUMINAIRE POLE	26	HANGAR	39	NOAA WEATHER DOME	52	FBO-FUEL/STORAGE		

PROPOSED DEVELOPMENT

- AIR CARGO AND CORPORATE GA
- CORPORATE GA
- GA T-HANGARS
- FUTURE TAXIWAY/TAXILANE

REVISIONS

DATE: X	COMMENT

DRAWN BY:	NJS
REVIEWED BY:	MH
SCALE:	1" = 600'
DATE:	Apr 30, 2018
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NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

ARIPORT LAYOUT PLAN
TERMINAL AREA PLAN

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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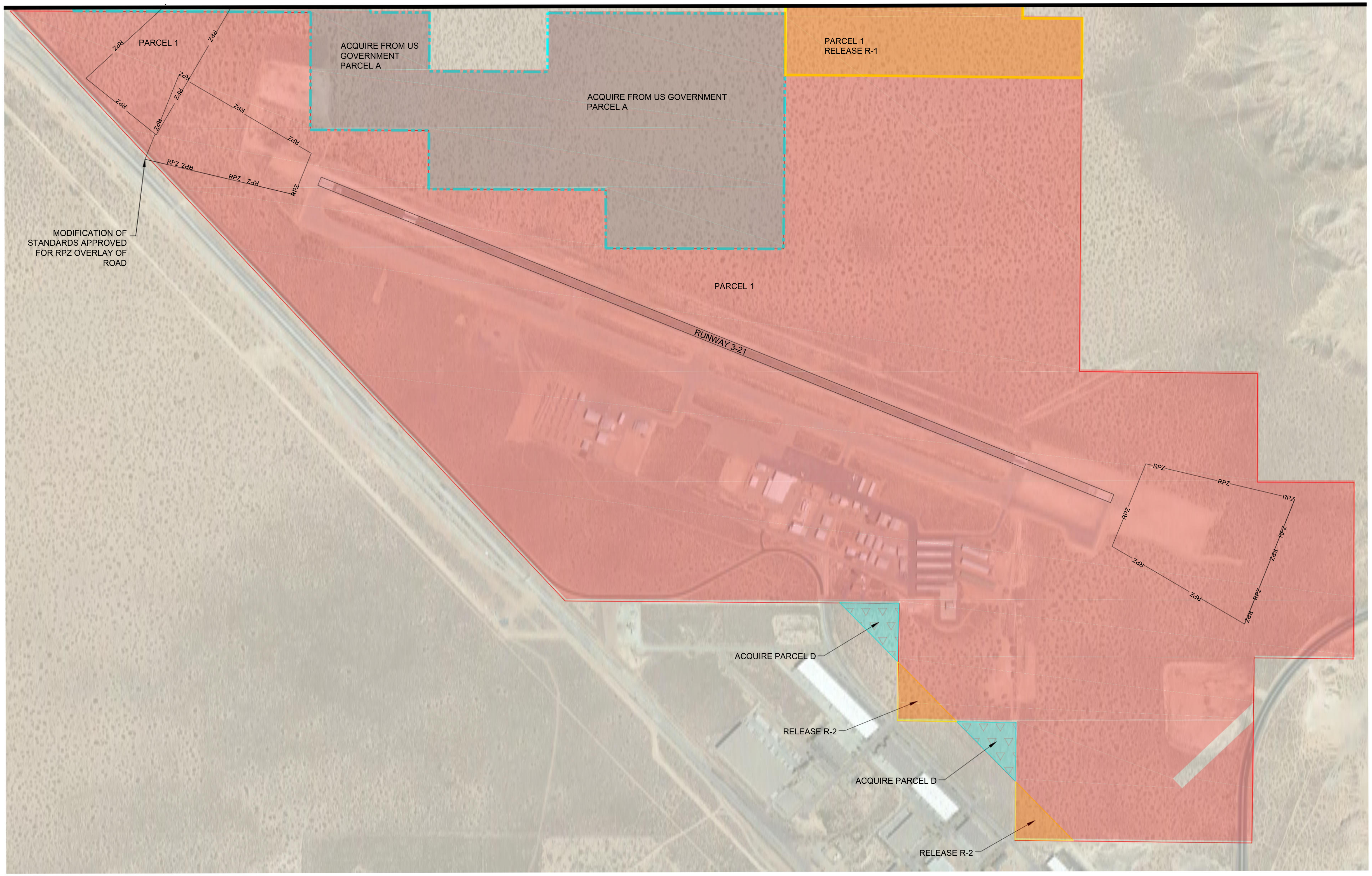
SHEET NO
13 – 20

MATCH LINE - SEE SHEET 15



CURRENT PROPERTY

PROPOSED FOR RELEASE

PROPOSED ACQUISITION

BASE MAP DATA SOURCE:
- US GOVERNMENT
- BLM PUBLIC LAND SURVEY SYSTEM

SEE SHEET 16 FOR THE PROPERTY TABLE

REVISIONS

DATE:	X	COMMENT

DRAWN BY:	NJS
REVIEWED BY:	MH
SCALE:	1" = 600'
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DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
PROPERTY MAP - EXHIBIT A 1 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

600 300 0 600
1"=600'

SHEET NO
14 — 20

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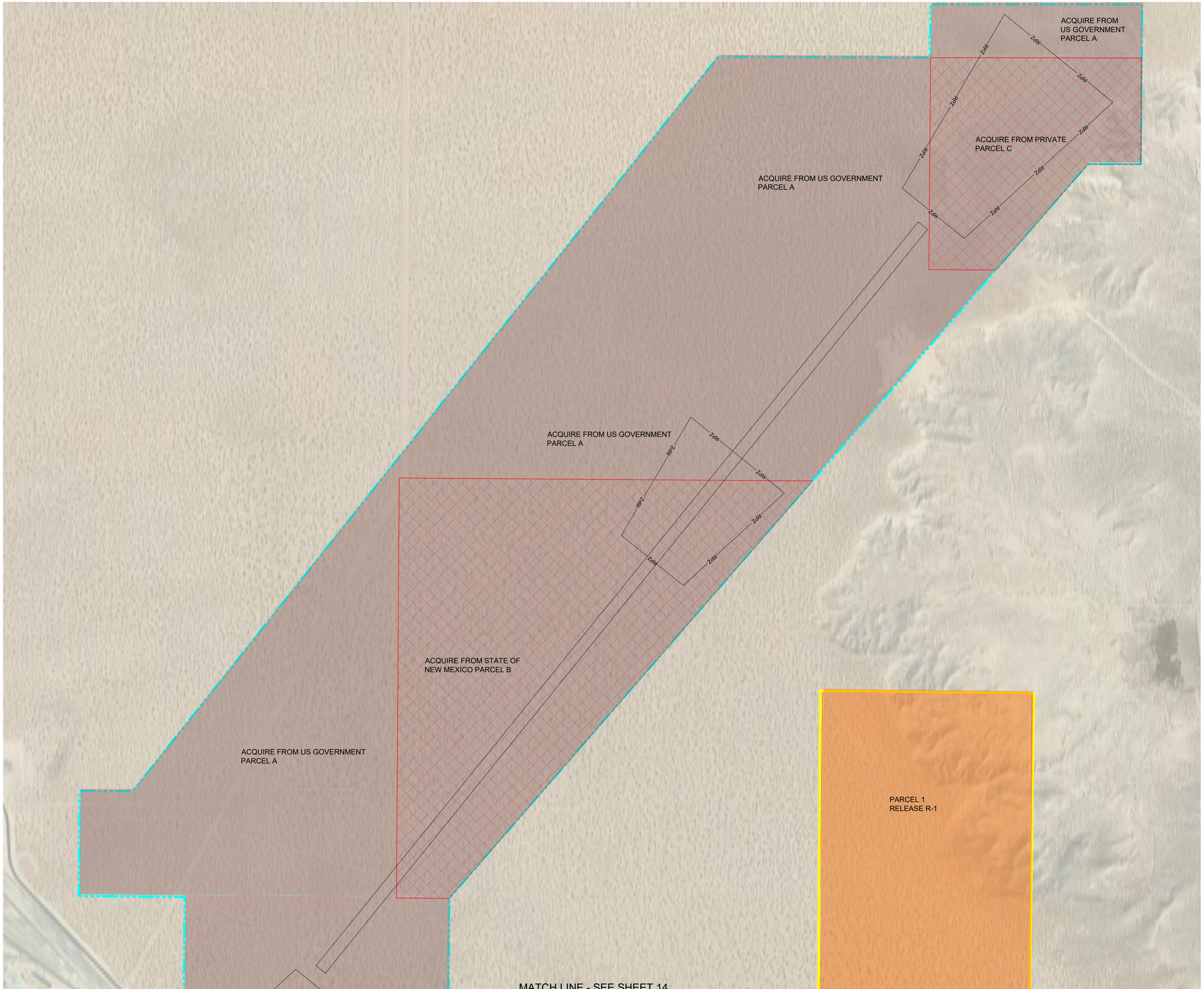

CURRENT PROPERTY

PROPOSED FOR RELEASE

PROPOSED ACQUISITION

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US GOVERNMENT
BLM PUBLIC LAND SURVEY SYSTEM

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8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

600 300 0 600
1"=600'

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DATE:	Apr 30, 2018
BHI PROJECT NO:	20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
PROPERTY MAP - EXHIBIT A 2 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

Bohannan Huston
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SHEET NO
15 – 20

EXISTING PROPERTY

Parcel Number	Grantor	Date of Acquisition	Type of Interest Acquired	Acreage	Type of Conveyance Instrument	DAC Parcel ID Number	USG Patent/Deed Number
1	United States Government	8/4/1982	Patent Transfer	1711.6	Conveyance under Airport and Airway Development Act of 1970	R1718139	30-82-0048
		Legal Description					
		T. 28 S., R. 2 E.,					
		Sec. 1, SW¼;					
		Sec. 10, Lots 4, 5, 8 and SE ¼ NE ¼					
		Sec. 11, Lot 1, W ½ W ½ SW ¼ NW ¼, NW ¼ SW ¼,					
		W½NW¼NE¼SW¼, S½NE¼SW¼, SE¼SW ¼,					
		SW¼ NW¼ SE¼ and S ½ SE¼;					
		Sec 12, W½ of Lot 7, Lots 8, 9, W½ of					
		Lot 10, W½SW¼NE¼, NW ¼ and W½SW ¼;					
		Sec. 13, Lot 2, W ½NE¼SE¼ NE¼, NW¼ NE¼ SW¼					
		and SE ¼;					
		Sec. 14, Lots 1, 2, 5, 6, N½NE¼ and SE ¼ NE¼					
		T. 28 S., R. 3 E.,					
		Sec. 18, Lot 2 and N ½ of Lot 3.					
		Containing 1,711.60 acres, according to the patent					

Documents pertaining to the Doña Ana County Airport

1. Deed, the United States of America to the Board of County Commissioners, Doña Ana County, New Mexico, filed of record on Sept. 7, 1982, recorded in bk. 275, pgs, 625-629, deed records, Doña Ana County, New Mexico.
2. Assignment of overriding royalty interest, D.P. and Margery Leonard, to Coral Oil &. Gas company, filed of record on Apr. 2, 1962, Recorded in bk. 52, pgs. 194-195, misc. Records, Doña Ana County, New Mexico,
3. Assignment affecting record title to oil and gas lease, chevron Oil company to Getty oil company, filed of record on Jan. 7, 1975, Recorded in bk. 108, pgs. 346-349, misc. Records, Doña Ana County, New Mexico.
4. Assignment affecting record title to oil and gas lease, chevron Oil to Getty oil company, filed of record on Jan. 7, 1975, recorded in Bk. 108, pgs. 350-353, misc. Records, Doña Ana County, New Mexico.
5. Assignment affecting record title to oil and gas lease, a. M. And Phyllis c. Scheming to Hubert S, Finke stein, filed of record on Nov,12, 1980, recorded in bk. 147, pgs. 327-329, misc. Records, Doña Ana County, New Mexico,
6. lease for oil and lease, the United States of America to a. M. Scheming, filed of record on November 12, 1980, recorded in book 147, Pages 330-332, misc. Records, Doña Ana County, New Mexico.
7. assignment of overriding royalty, Hubert S. and Ann Nachman Finkelstein to Jereld E. McQueen, filed of record on Nov. 2, 1981, Recorded in bk. 156, pgs. 101-104, misc. Records, Doña Ana County, New Mexico.
8. Assignment of overriding royalty, Hubert S. and Ana Nachman Finkelstein to Finke stein 2011 trust, filed of record on Jan. 25, 1982, Recorded in bk. 158, pgs. 298-301, misc. Records, Doña Ana County, New Mexico,
9. Easement, board of county commissioners, Doña Ana County, New Mexico, to El Paso Electric Company and mountain states telephone and Telegraph company, filed of record on July 20, 1987, recorded in bk.219, pgs. 65-66, misc. Records, Doña Ana County, New Mexico.
10. Notice of claim to water rights, New Mexico Water Conservancy and Irrigation District, Inc, filed of record on Dec. 23, 1992, recorded in bk. 283, pgs. 719-720, misc. Records, Doña Ana County, New Mexico.
11. Easement, board of county commissioners of Doña Ana County to New Mexico Highway and Transportation Department, filed of record on Sept.5, 1995, recorded in book 24, pgs. 1042-1043, records of Doña Ana County, New Mexico.
12. Easement, board of county commissioners of Doña Ana County to New Mexico State Highway and Transportation Department, filed of record on Sept. 5, 1995, recorded in bk. 24, pgs. 1044-1045, records of Doña Ana County, New Mexico.
13. Easement, board of county commissioners of Doña Ana County to New Mexico State Highway and Transportation Department, filed of record on Sept. 5, 1995, recorded in bk. 24, pgs. 1046-1047, records of Doña Ana County, New Mexico,
14. Right of way and easement, Doña Ana County, as Owner, Patrick F. O'Shea, a married man as his sole and separate property, as lessee, And Karr Tool and Manufacturing, Inc., as sub-lessee, to PNM Gas Services, and unincorporated division of Public Service Co. of New Mexico, a New Mexico corporation, filed of record on Nov. 13, 1996, Recorded in bk. 70, pgs, 1550-1554, records of Doña Ana County, New Mexico.
15. Easement, peter cooper, assistant county manager, to El Paso Electric company and mountain states telephone and telegraph company, Filed of record on Nov. 14, 1996, recorded in bk. 70, pgs. 1663-1664, Records of Doña Ana County, New Mexico.
16. Easement, Doña Ana County, to El Paso Electric Company and Mountain states telephone and telegraph company, filed of record on Mar. 6, 1997, recorded in book 81, pgs. 1631-1632, records of Doña Ana County, New Mexico,
17. Easement, Doña Ana County, to El Paso Electric Company and Mountain states telephone and telegraph company, filed of record on Apr. 4, 1997, recorded in bk. 85, pgs. 358-359, records of Doña Ana County, New Mexico.
18. Easement to El Paso Electric Company and Mountain States Telephone and telegraph company, filed of record on Sept. 16, 1997, Recorded in bk. 103, pgs. 116-117, records of Doña Ana County, New Mexico.
19. Easement for Airport Loop Road, legal description prepared September 5, 2008.

Data source items 1-18: Santiago Romero Jr. and Associates, Inc. survey of the Doña Ana County airport at Santa Teresa, dated June 2010.
Item 19: legal description and easement prepared by Wilson and Company.

PROPOSED ACQUISTION

Parcel Number	Owner	Description		Acres
A	United States Government	T027S, R002E	S1/2, SW1/4, SW 1/4, SEC 25	20
		T027S, R002E	S1/2, SW1/4, SE1/4, SEC 25	20
		T027S, R002E	portion NW 1/4, NE 1/4, SEC 35	15.9
		T027S, R002E	E 1/2 NE 1/4, SEC 35	80
		T027S, R002E	PORTION SE 1/4, NW 1/4, SEC 35	8.5
		T027S, R002E	majority SW 1/4, NE 1/4, SEC 35	39.4
		T027S, R002E	MAJORITY NE 1/4 SW 1/4, SEC 35	35.9
		T027S, R002E	SE 1/4, SEC 35	160
		T027S, R002E	MAJORITY SW1/4, SW1/4, SEC 35	21.9
		T027S, R002E	SE 1/4, SW 1/4, SEC 35	40
		T028S, R002E	PORTION NE1/4, NE1/4, SEC 03	21.5
		T028S, R002E	PORTION SW1/4, NE1/4, SEC 03	13.3
		T028S, R002E	SE1/4, NE1/4, SEC 03	40
		T028S, R002E	PORTION SW1/4, NE1/4, SEC 02	25.4
		T028S, R002E	MAJORITY NW1/4, SE1/4, SEC 03	38.1
		T028S, R002E	E1/2, SE1/4, SEC 03	80
		T028S, R002E	SE1/4, SW1/4, SEC 03	40
		T028S, R002E	SW1/4, SE1/4, SEC 03	40
		T028S, R002E	N1/2, NW1/4, SEC 10	80
		T028S, R002E	W 1/2, NW 1/4, NW 1/4, SEC 11	20
		T028S, R002E	SW 1/4, NW 1/4, SEC 11	40
		T028S, R002E	S 1/2, SE 1/4, NW 1/4, SEC 11	20
		T028S, R002E	S 1/2, NE 1/4, SEC 11	80
		T028S, R002E	N 1/2, NE 1/4, SW 1/4, SEC 11	20
		T028S, R002E	N1/2, NW1/4, SE1/4, SEC 11	20
		T028S, R002E	SE1/4, NE1/4, SE1/4, SEC 11	10
		T028S, R002E	NE1/4, SE1/4, SEC 11	40
				1069.9

B	State of New Mexico	T028S, R002E	NW1/4, SEC 02	160
		T028S, R002E	NW1/4, NE1/4, SEC 2	40
		T028S, R002E	PORTION NE1/4, NE1/4, SEC 02	19.5
		T028S, R002E	NW1/4, SW1/4, SEC 02	40
		T028S, R002E	MAJORITY NE1/4, SW1/4, SEC 02	30.3
		T028S, R002E	MAJORITY SW1/4, SW1/4, SEC 02	32.2
		T028S, R002E	PORTION SE1/4, SW1/4, SEC 02	3
				325

C	Robert E. Malooly (Parcel ID R170411)	T027S, R002E	NW1/4, SEC 36	160
		T027S, R002E	NW1/4, NE1/4, SEC 36	40
		T027S, R002E	portion SW 1/4, NE 1/4, SEC 36	5.9
		T027S, R002E	majority NW 1/4, SW 1/4, SEC 36	39.2
		T027S, R002E	PORTION NE 1/4, SW 1/4, SEC 36	9.4
		T027S, R002E	PORTION SW1/4, SW1/4, SEC 36	7
				261.5

D	Verde Realty	T028S, R002E	Portions Section 13, the County has authority to exchange land with Verde Realty.	TBD

LAND TO BE RELEASED

Parcel Number	Release to	Legal Description		Acres
R-1	Reverts to United States Government	T028S, R002E	SW 1/4, SEC 1	160
		T028S, R002E	N 1/2, NW 1/4, SEC 12	80
		T028S, R002E	N1/2, S1/2, NW 1/4, SEC 12	40
		T028S, R002E	NW 1/4, SW 1/4, NE 1/4, SEC 12	10
R-2	Verde Realty	T028S, R002E	Portions Section 13, the County has authority to exchange land with Verde Realty.	TBD
				290

REVISIONS

DATE: X	COMMENT

DRAWN BY: NJS
REVIEWED BY: MH
SCALE: 1" = 600'
DATE: Apr 30, 2018
BHI PROJECT NO: 20160271

NMAD GRANT: 576-15.02

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
PROPERTY MAP DATA TABLE

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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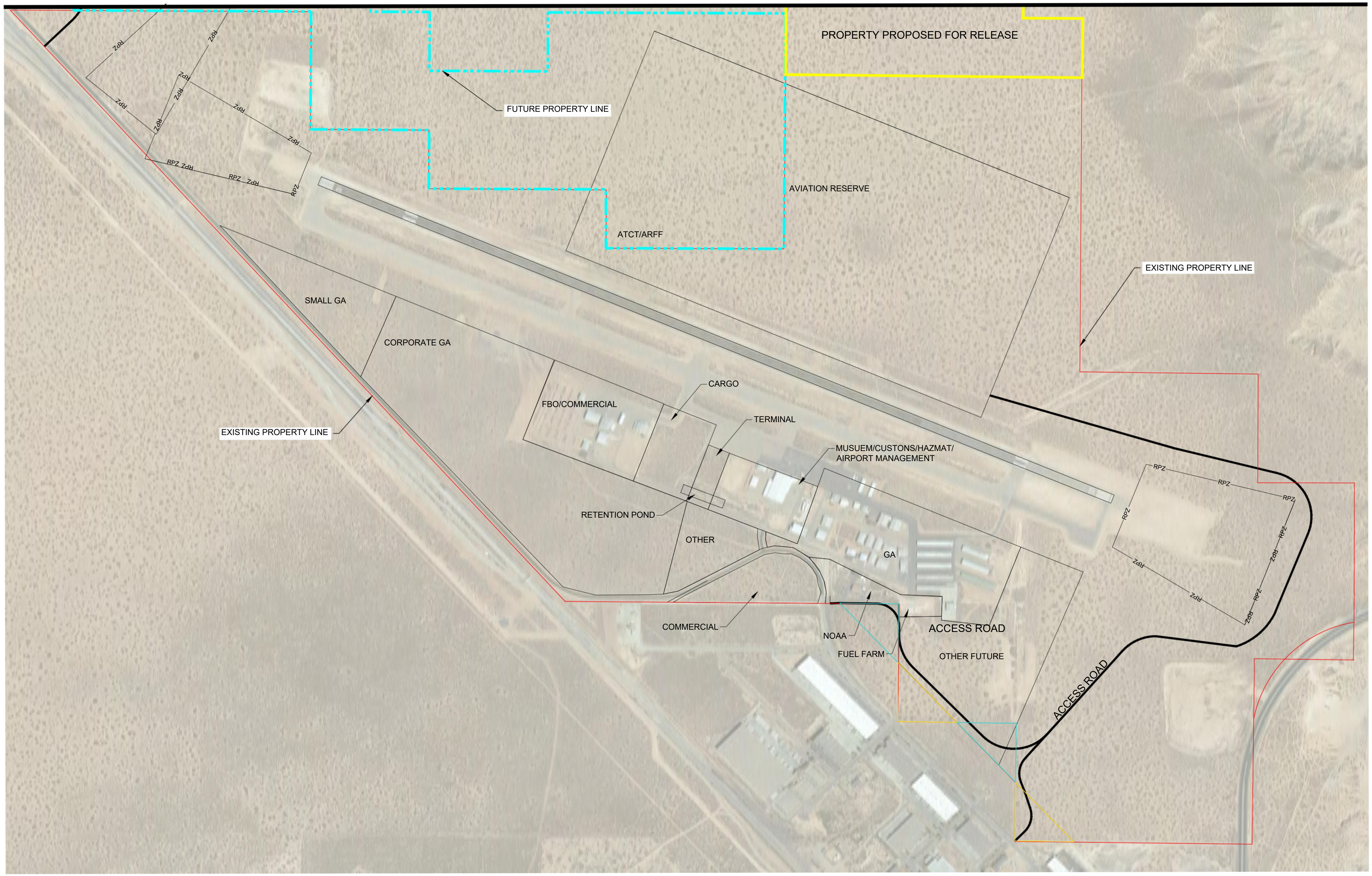
SHEET NO
16 – 20

C:\Users\nsalazar\appdata\local\temp\AcPublish_11232\2016027103PP03.dwg Apr 30, 2018 - 4:22pm , Plotted by: NSALAZAR

MATCH LINE - SEE SHEET 18



8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

600 300 0 600

1"=600'

REVISIONS

DATE:	X	COMMENT

NMAD GRANT: 576-15.02

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REVIEWED BY:	MH
SCALE:	1" = 600'
DATE:	Apr 30, 2018
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DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
SANTA TERESA, NEW MEXICO

AIRPORT LAYOUT PLAN
ON-AIRPORT LAND USE 1 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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SHEET NO
17 — 20

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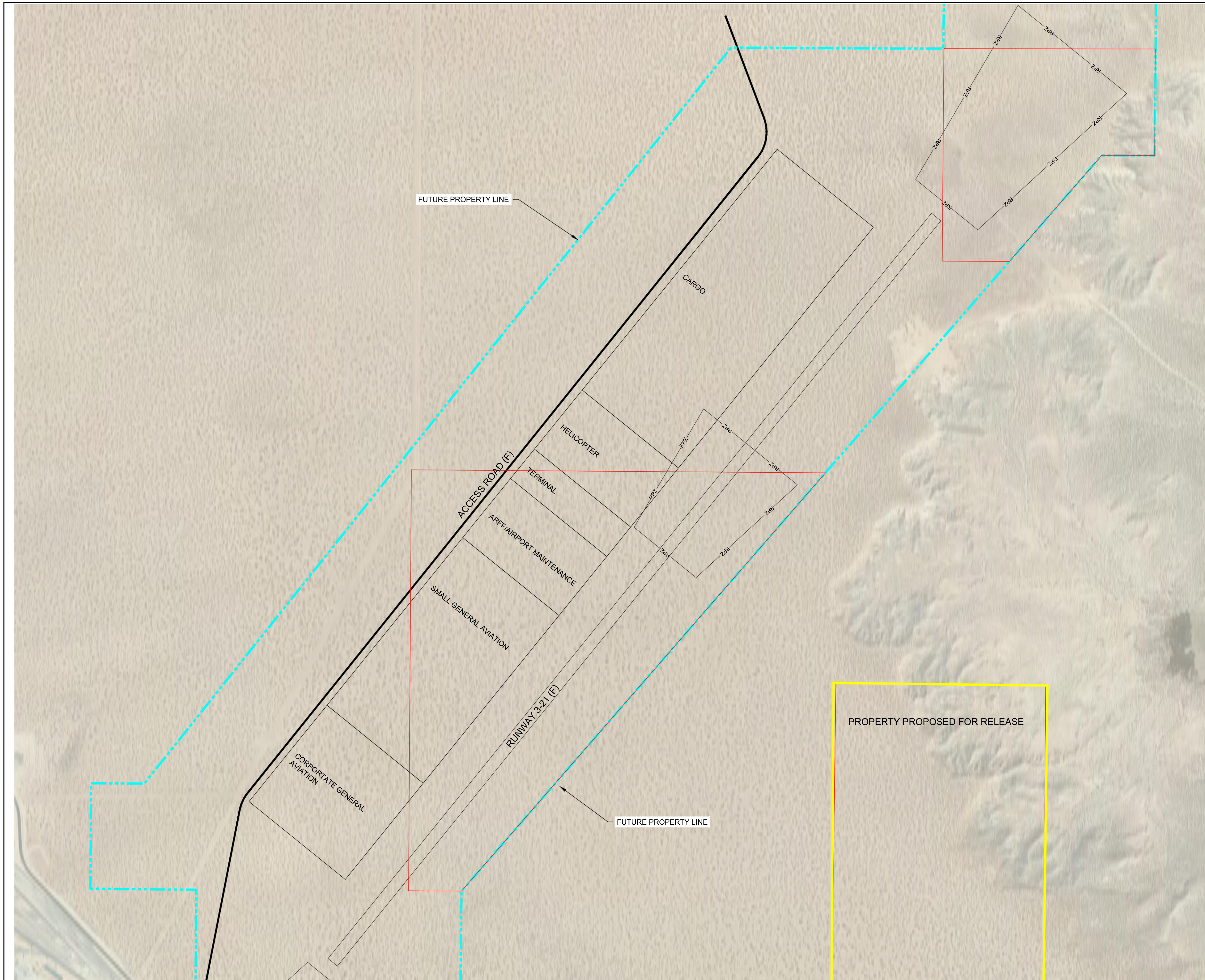

MATCH LINE - SEE SHEET 17

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8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

600 300 0 600

1"=600'

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DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
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AIRPORT LAYOUT PLAN
ON-AIRPORT LAND USE 2 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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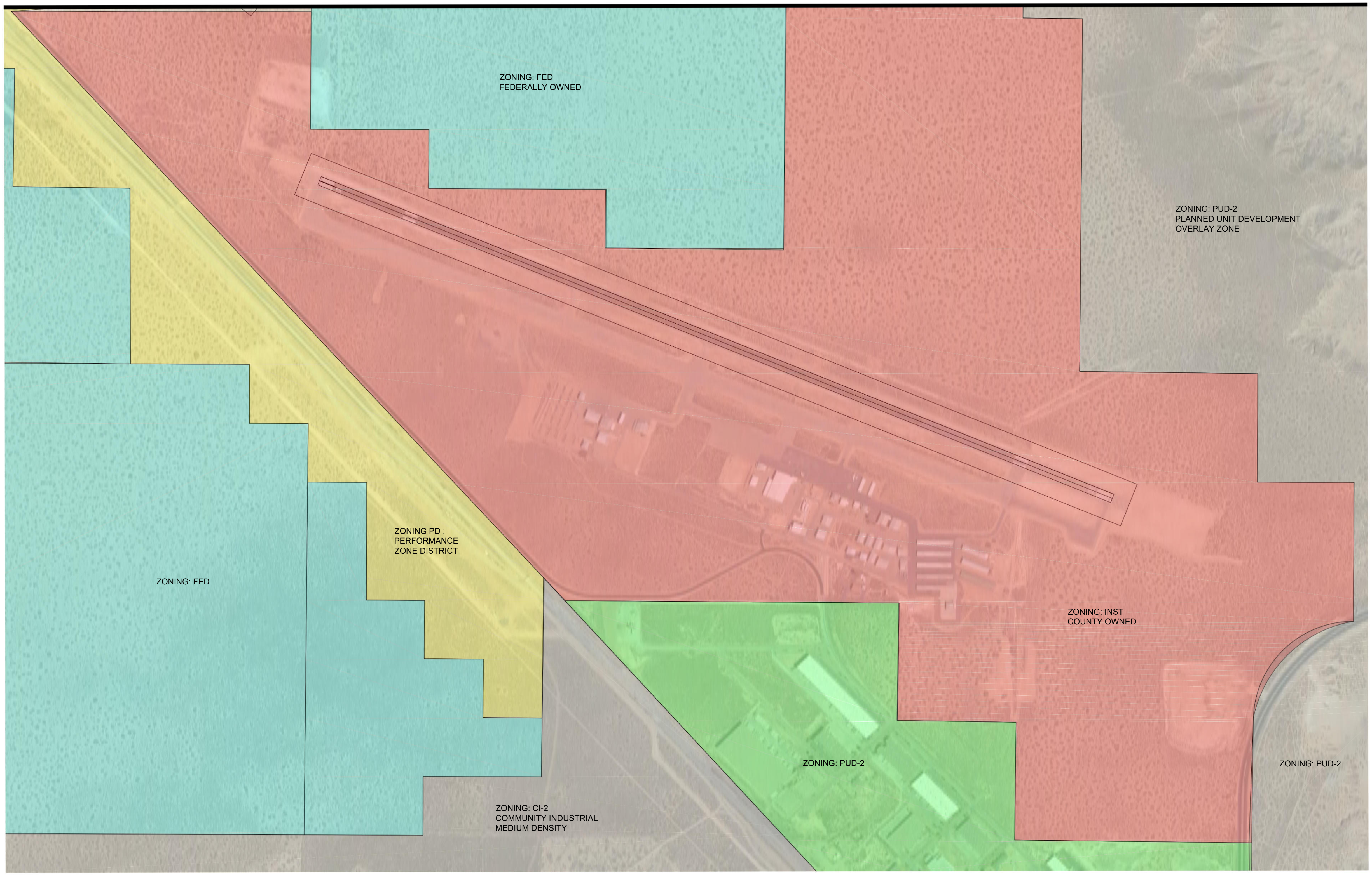
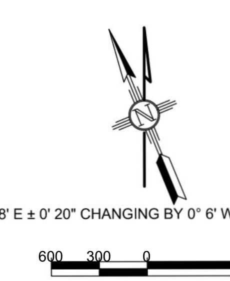
SHEET NO
18 – 20

MATCH LINE - SEE SHEET 20



LAND OWNERSHIP

- AIRPORT EXISTING
- UPRR
- US GOVERNMENT (BLM)
- STATE OF NEW MEXICO (SLO)
- INDUSTRIAL PARK
- PRIVATE



8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR

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AIRPORT LAYOUT PLAN
OFF AIRPORT LAND USE 1 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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19 — 20

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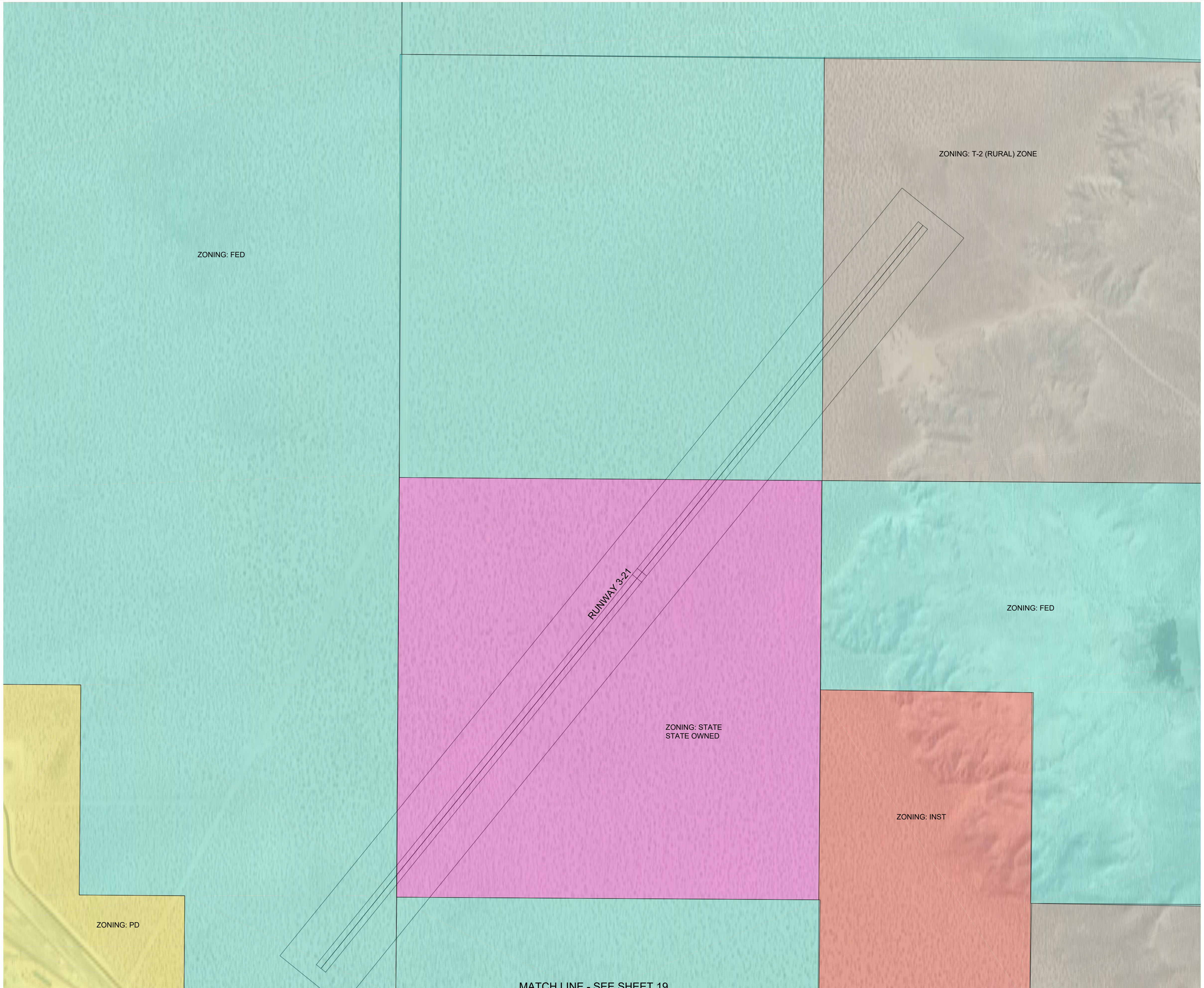

LAND OWNERSHIP

- AIRPORT EXISTING
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- STATE OF NEW MEXICO (SLO)
- INDUSTRIAL PARK
- PRIVATE

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DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)
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AIRPORT LAYOUT PLAN
OFF AIRPORT LAND USE 2 OF 2

DONA ANA COUNTY INTERNATIONAL JETPORT (DNA)

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20 – 20

APPENDIX A

Glossary

GLOSSARY

ACRONYMS

AC	Advisory Circular
ACIP	Airport Capital Improvement Plan
ADF	Automatic Direction Finder
ADG	Airplane Design Group
AGL	Above Ground Level
AIP	Airport Improvement Program
ALS	Approach Lighting System
APV	Instrument Approach Procedure with Vertical Guidance
ARC	Airport Reference Code
ARFF	Aircraft Rescue and Firefighting
ARP	Airport Reference Point
ASDA	Accelerate-Stop Distance Available
ASOS	Automated Surface Observation Station
ATCT	Airport Traffic Control Tower
ATIS	Automated Terminal Information Service
AVGAS	Aviation Gasoline
AWOS	Automated Weather Observation Station
BRL	Building Restriction Line
CFR	Code of Federal Regulations
DME	Distance Measuring Equipment
DNL	Day-night Average Sound Level
DWL	Dual Wheel Loading
DTWL	Dual Tandem Wheel Loading
EAA	Experimental Aircraft Association
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FBO	Fixed Base Operator
FY	Fiscal Year
GA	General Aviation
GPS	Global Positioning System
GS	Glide Slope
HIRL	High Intensity Runway Lights
IAP	Instrument approach procedure
IFR	Instrument flight rules
LDA	Landing Distance Available
LIRL	Low Intensity Runway Lights
MALS	Medium-intensity Approach Lighting System
MALSR	Medium-intensity Approach Lighting System with Runway Alignment Indicator Lights
MIRL	Medium Intensity Runway Lights

MITL	Medium Intensity Taxiway Lights
MLS	Microwave Landing System
MOA	Military Operations Area
MSL	Mean Sea Level
NAVAID	Navigational Aid
NBAA	National Business Aviation Association
NDB	Nondirectional Radio Beacon
NM	Nautical Mile
NMAD	New Mexico Aviation Division
NMASP	New Mexico Airport System Plan
NMDOT	New Mexico Department of Transportation
NOTAM	Notice to Airmen
NPIAS	National Plan of Integrated Airport Systems
OFA	Object free area
OFZ	Object free zone
PAC	Planning Advisory Committee
PAPI	Precision Approach Path Indicator
PLASI	Pulsating Visual Approach Slope Indicator
PMP	Pavement Maintenance Program
POFA	Precision Object Free Area
PVASI	Pulsating/Steady Visual Approach Slope Indicator
RDC	Runway Design Code
REIL	Runway End Identifier Lights
RNAV	Area Navigation
RPZ	Runway Protection Zone
RVR	Runway Visibility Range
RVZ	Runway Visibility Zone
SASP	State Aviation System Plan
SM	Statute Mile
SWL	Single Wheel Loading
TDG	Taxiway Design Group
TDZ	Touchdown Zone
TDZE	Touchdown Zone Elevation
TAF	Terminal Area Forecast
TODA	Takeoff Distance Available
TORA	Takeoff Run Available
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VHF	Very High Frequency
VOR	Very High Frequency Omnidirectional Range
WAAS	Wide Area Augmentation System

DEFINITIONS

ADVISORY CIRCULAR. FAA-issued publication consisting of non-regulatory material and recommendations regarding policy, guidance and information relative to a specific aviation subject.

AIR CARRIER. An airline operator providing scheduled air services for the commercial transport of passengers or cargo.

AIR TAXI. An air carrier certificated in accordance with FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft; generally, small aircraft are used (for hire) for specific trips.

AIRCRAFT. An aircraft is a device that is used or intended to be used for flight in the air.

AIRCRAFT APPROACH CATEGORY. A grouping of aircraft based on 1.3 times the stall speed in their maximum certificated landing weight. The categories are as follows:

- Category A: Speed less than 91 knots.
- Category B: Speed 91 knots or more, but less than 121 knots.
- Category C: Speed 121 knots or more, but less than 141 knots.
- Category D: Speed 141 knots or more, but less than 166 knots.
- Category E: Speed greater than 166 knots.

AIRCRAFT OPERATION. The landing, takeoff, or touch-and-go procedure by an aircraft on a runway at an airport.

AIRFIELD. The portion of an airport which contains the facilities necessary for the operation of aircraft.

AIRPLANE. An engine-driven fixed-wing aircraft heavier than air that is supported in flight by the dynamic reaction of the air against its wings.

AIRPLANE DESIGN GROUP (ADG). A grouping of aircraft based upon relative wingspan or tail height (whichever is most demanding). The groups are as follows:

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

AIRPORT IMPROVEMENT PROGRAM. A program authorized by the Airport and Airway Improvement Act of 1982 that provides funding for airport planning and development.

AIRPORT LAYOUT PLAN (ALP). An FAA-required, scaled drawing of the existing and proposed land and facilities, with dimensional information in compliance with applicable standards.

AIRPORT REFERENCE CODE (ARC). A coding system used to relate airport design criteria to the operational (Aircraft Approach Category) to the physical characteristics (Airplane Design Group) of the airplanes intended to operate at the airport.

AIRPORT REFERENCE POINT (ARP). The latitude and longitude of the approximate center of the airport.

AIRPORT TRAFFIC CONTROL TOWER (ATCT). A central operations facility in the terminal air traffic control system, consisting of a tower, including an associated instrument flight rule (IFR) room if radar equipped, using air/ground communications and/or radar, visual signaling, and other devices to provide safe and expeditious movement of terminal air traffic.

AIRSIDE. The portion of an airport that contains facilities necessary for the movement/operation of aircraft.

AIRSPACE. The volume of space above the surface of the ground that is provided for the operation of aircraft.

APPROACH PROCEDURE WITH VERTICAL GUIDANCE (APV). An Instrument Approach Procedure (IAP) providing both vertical and lateral electronic guidance.

APPROACH LIGHTING SYSTEM (ALS). An airport lighting facility, which provides visual guidance to landing aircraft by radiating light beams by which the pilot aligns the aircraft with the extended centerline of the runway on his/her final approach and landing.

APRON. A defined area for aircraft parking and other functions such as passenger, cargo or freight loading and unloading, and the refueling, maintenance and servicing of aircraft.

AREA NAVIGATION. The air navigation procedure that provides the capability to establish and maintain a flight path on an arbitrary course that remains within the coverage area of navigational sources being used.

AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS). A reporting system that provides frequent airport ground surface weather observation data through digitized voice broadcasts and printed reports.

AUTOMATED WEATHER OBSERVATION STATION (AWOS). Equipment used to automatically record weather conditions (i.e. cloud height, visibility, wind speed and direction, temperature, dew-point, etc.).

AVIGATION EASMENT. A contractual right or a property interest in land over which a right of unobstructed flight in the airspace is established, and incompatible development is prohibited.

BASED AIRCRAFT. The general aviation aircraft that uses a specific airport as a home base.

BLAST FENCE. A barrier used to divert or dissipate jet blast or propeller wash.

BLAST PAD. A prepared surface adjacent to the end of a runway for the purpose of eliminating the erosion of the ground surface by the wind forces produced by airplanes at the initiation of takeoff operations.

BUILDING RESTRICTION LINE (BRL). A line that identifies suitable building area locations on the airport.

BYPASS TAXIWAY. A taxiway used to reduce aircraft queuing demand by providing multiple takeoff points.

AIRPORT CAPITAL IMPROVEMENT PLAN (ACIP). A schedule of planned projects and costs submitted typically prepared by the airport sponsor for funding purposes.

CATEGORY-I (CAT-I). An instrument approach or approach and landing with a Height Above Threshold (HATh) or minimum descent altitude not lower than 200 ft (60 m) and with either a visibility not less than ½ statute mile (800m), or a runway visual range not less than 1800 ft (550m).

CATEGORY-II (CAT-II). An instrument approach or approach and landing with a Height Above Threshold (HATh) lower than 200 ft (60 m) but not lower than 100 ft (30 m) and a runway visual range not less than 1200 ft (350m).

CATEGORY-III (CAT-III). An instrument approach or approach and landing with a Height Above Threshold (HATh) lower than 100 ft (30m), or no HATh, or a runway visual range less than 700 ft (350m).

CEILING. The height above the ground surface to the location of the lowest layer of clouds which is reported as either broken or overcast.

CLASS A, B, C, D, E, G AIRSPACE. See Controlled Airspace.

COMMON TRAFFIC ADVISORY FREQUENCY (CTAF). A radio frequency identified in the appropriate aeronautical chart which is designated for transmitting airport advisory information and procedures while operating to and from an uncontrolled airport.

CONTROLLED AIRSPACE. Airspace of defined dimensions within which air traffic control services are provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. Controlled airspace in the U.S. is designated as follows.

- **CLASS A.** The airspace from 18,000 feet mean sea level (MSL) up to but not including 60,000 MSL (flight level FL600).

- **CLASS B.** Generally, the airspace from the surface to 10,000 feet MSL surrounding the nation’s busiest airports. The configuration of Class B airspace is unique to each airport, but typically consists of two or more layers of airspace and is designed to contain all published instrument approach procedures to the airport. An air traffic control clearance is required for all aircraft to operate in the area.

- **CLASS C.** Generally, the airspace from the surface to 4,000 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach and are served by a qualifying number of IFR operations or passenger enplanements. Although individually tailored for each airport, Class C airspace typically consists of a surface area with a five nautical miles (nm) radius and an outer area with a 10 nm radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Two-way radio communication is required for all aircraft.

- **CLASS D.** Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower. Class D airspace is individually tailored and configured to encompass published instrument approach procedures. Unless otherwise authorized, all persons must establish two-way radio communications.

- **CLASS E.** Generally, controlled airspace not classified as Class A, B, C or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Class E airspace encompasses all Victor Airways. Only aircraft following instrument flight rules are required to establish two-way radio communications with air traffic control.

- **CLASS G.** Generally, that airspace not classified as Class A, B, C, D or E. Class G airspace extends from the surface to the overlying Class E airspace

CRITICAL AIRCRAFT. See Design Aircraft.

CROSSWIND. Wind flow that is not parallel to the runway of the flight of an aircraft.

CROSSWIND COMPONENT. The component of wind, measured in knots, that is at a right angle to the runway centerline or the intended flight path of an aircraft.

DECISION HEIGHT. The height above the end of the runway surface at which a decision must be made by a pilot during a precision approach to either continue the approach or to execute a missed approach.

DECLARED DISTANCES. The distances declared available for the airplane's takeoff run, takeoff distance, accelerate-stop distance and landing distance requirements. The distances are:

- **TAKEOFF RUN AVAILABLE (TORA).** The runway length declared available and suitable for the ground run of an airplane taking off.

- **TAKEOFF DISTANCE AVAILABLE (TODA).** The TORA plus the length of any remaining runway and/or clearway beyond the far end of the TORA.

- **ACCELERATE–STOP DISTANCE AVAILABLE (ASDA).** The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff.

- **LANDING DISTANCE AVAILABLE (LDA).** The runway length declared available and suitable for landing.

DESIGN AIRCRAFT. An aircraft with characteristics that represent the most demanding needs, which determine the application of airport design standards for a specific runway, taxiway, taxilane, apron, or other facility. This aircraft can be a specific aircraft model or a composite of several aircraft using or anticipated to use the airport or part of the airport. (Also called "critical aircraft" or "critical design aircraft.")

DISPLACED THRESHOLD. A threshold that is located at a point on the runway other than the designated beginning of the runway.

ENPLANEMENT. The boarding of a revenue passenger on an aircraft.

ENVIRONMENTAL ASSESSMENT (EA). An environmental analysis performed pursuant to the National Environmental Policy Act to determine whether an action would significantly affect the environment and thus require a more detailed environmental impact assessment.

FEDERAL AVIATION REGULATIONS. The general and permanent rules established by the executive departments and agencies of the Federal Government for aviation, which are published in the Federal Register. These are aviation subset of the Code of Federal Regulations.

FIXED BASE OPERATOR (FBO). An FBO typically offers the following services (or a combination thereof): aircraft charter operation, aircraft rental, aircraft storage, flight training, aircraft sales/leasing, aircraft component maintenance, aircraft parts sales, and aircraft maintenance.

FRANGIBLE NAVAID. A navigational aid which retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.

GENERAL AVIATION. That portion of civil aviation that encompasses all facets of aviation except air carriers holding a certificate of convenience and necessity, and large aircraft commercial operators.

GLIDE SLOPE (GS). Provides vertical guidance for aircraft during approach and landing. The glide slope consists of 1) electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or 2) visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

GLOBAL POSITIONING SYSTEM (GPS). A system of 24 satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude and altitude.

HELIPAD. A designated area for the takeoff, landing and parking of helicopters.

HIGH INTENSITY RUNWAY LIGHTS. The highest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

INSTRUMENT APPROACH PROCEDURE. A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually.

INSTRUMENT FLIGHT RULES (IFR). Rules governing the procedures for conducting instrument flight. Also, a term used by pilots and controllers to indicate type of flight plan.

INSTRUMENT METEOROLOGICAL CONDITIONS. Meteorological conditions expressed in terms of specific visibility and ceiling conditions that are less than the minimums specified for visual meteorological conditions.

ITINERANT OPERATIONS. All aircraft operations other than local operations.

KNOTS. A unit of speed length used in navigation that is equivalent to the number of nautical miles traveled in one hour.

LANDSIDE. The portion of an airport that provides the facilities necessary to serve the users beyond the aircraft movement areas.

LARGE AIRPLANE. An airplane that has a maximum certified takeoff weight in excess of 12,500 pounds.

LOCAL OPERATIONS. Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

LOCAL TRAFFIC. Aircraft operating in the traffic pattern or within site of the tower, or aircraft known to be departing or arriving from the local practice areas, or aircraft executing practice instrument approach procedures. Typically, this includes touch-and-go training operations.

LOCALIZER. The component of an ILS, which provides course guidance to the runway.

LOCALIZER TYPE DIRECTIONAL AID (LDA). A facility of comparable utility and accuracy to a localizer, but is not part of a complete ILS and is not aligned with the runway.

LORAN. Long range navigation, an electronic navigational aid which determines aircraft position and speed by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran is used for en route navigation.

LOW IMPACT RESISTANT (LIR) SUPPORT. A support designed to resist operational and environmental static loads and fail when subjected to a shock load such as that from a colliding aircraft.

LOW INTENSITY RUNWAY LIGHTS. The lowest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

MAIN GEAR WIDTH (MGW). The distance from the outer edge to outer edge of the widest set of main gear tires.

MEDIUM INTENSITY RUNWAY LIGHTS. The middle classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

MILITARY OPERATIONS AREA (MOA). See special-use airspace.

MILITARY TRAINING ROUTE. An air route depicted on aeronautical charts for the conduct of military flight training at speeds above 250 knots.

MODIFICATION to STANDARDS. Any approved nonconformance to FAA standards, other than dimensional standards for Runway Safety Areas (RSAs), applicable to an airport design, construction, or equipment procurement project that is necessary to accommodate an unusual local condition for a specific project on a case-by-case basis while maintaining an acceptable level of safety.

MOVEMENT AREA. The runways, taxiways, and other areas of an airport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports with a tower, air traffic control clearance is required for entry onto the movement area.

NATIONAL AIRSPACE SYSTEM. The network of air traffic control facilities, air traffic control areas, and navigational facilities through the US.

NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS. The national airport system plan developed by the Secretary of Transportation on a bi-annual basis for the development of public use airports to meet national air transportation needs.

NAUTICAL MILE. A unit of length used in navigation which is equivalent to the distance spanned by one minute of arc in latitude, that is, 1,852 meters or 6,076 feet. It is equivalent to approximately 1.15 statute mile.

NAVAID. A term used to describe any electrical or visual air navigational aid, light, sign, and associated supporting equipment.

NOISE CONTOUR. A continuous line on a map of the airport vicinity connecting all points of the same noise exposure level.

NONDIRECTIONAL BEACON (NDB). A beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his/her bearing to and from the radio beacon and home on, or track to, the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a compass locator.

NONPRECISION APPROACH PROCEDURE. A standard instrument approach procedure in which no electronic glide slope is provided, such as VOR, TACAN, NDB or LOC.

OBJECT FREE AREA (OFA). An area on the ground centered on a runway, taxiway or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

OBSTACLE FREE ZONE (OFZ). The airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be kept clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance for aircraft landing or taking off from the runway, and for missed approaches.

OPERATION. A takeoff or landing.

PRECISION APPROACH. A standard instrument approach procedure, which provides runway alignment and glide slope (descent) information. It is categorized as follows:

- **CATEGORY I.** A precision approach which provides for approaches with a decision height of not less than 200 feet and visibility not less than ½ mile or Runway Visual Range (RVR) 2400 with operative touchdown zone and runway centerline lights.

- **CATEGORY II.** A precision approach, which provides for approaches with a decision height of not less than 100 feet and visibility not less than 1200 feet RVR.

- **CATEGORY III.** A precision approach, which provides for approaches with minima less than Category II.

PRECISION APPROACH PATH INDICATOR (PAPI). A lighting system providing visual approach slope guidance to aircraft during a landing approach. It is similar to a Visual Approach Slope Indicator (VASI) but provides a sharper transition between the colored indicator lights.

PRECISION OBJECT FREE ZONE (POFZ). An area centered on the extended runway centerline, beginning at the runway threshold and extending behind the runway threshold that is 200 feet long by 800 feet wide. The POFZ is a clearing standard, which requires the POFZ to be kept clear of above ground objects protruding above the runway safety area edge elevation (except for NAVAIDs). The POFZ applies to all new authorized instrument approach procedures with less than ¾ mile visibility.

REMOTE TRANSMITTER / RECEIVER (RTR). See remote communications outlet. RTRs serve ARTCCs.

RELIEVER AIRPORT. An airport to serve general aviation aircraft, which might otherwise use a congested air-carrier served airport.

RNAV. Area Navigation – airborne equipment, which permits flights over determined tracks within prescribed accuracy tolerances without the need to overfly ground-based navigation facilities. Used en route and for approaches to an airport.

RUNWAY. A defined rectangular area of pavement, land or water that is prepared for an aircraft landing and taking off. Runways are normally numbered in relation to their magnetic direction, rounded off to the nearest 10 degrees. The runway heading on the opposite end of the runway is 180 degrees from that runway end. Aircraft can takeoff or land from either end of a runway, depending upon wind direction.

RUNWAY ALIGNEMENT INDICATOR LIGHT. A series of high intensity sequentially flashing lights installed on the extended centerline of the runway usually in conjunction with an approach lighting system.

RUNWAY BLAST PAD. A surface adjacent to the ends of runways provided to reduce the erosive effect of jet blast and propeller wash.

RUNWAY END IDENTIFIER LIGHTS (REIL). Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

RUNWAY GRADIENT. The average slope, measured in percent, between the two ends of a runway.

RUNWAY PROTECTION ZONE (RPZ). An area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape. Its dimensions are determined by the aircraft approach speed and runway approach type/minima.

RUNWAY SAFETY AREA (RSA). A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot or excursion from the runway.

RUNWAY VISUAL RANGE (RVR). An instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.

RUNWAY VISIBILITY ZONE (RVZ). An area on the airport to be kept clear of permanent objects so that there is an unobstructed line-of-site from any point five feet above the runway centerline to any point five feet above an intersecting runway centerline.

SEGMENTED CIRCLE. A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.

SMALL AIRPLANE. An airplane that has a maximum certified takeoff weight of up to 12,500 pounds.

SPECIAL USE AIRSPACE. Airspace of defined dimensions identified by a surface area wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Special-use airspace classifications include:

- **ALERT AREA.** Airspace that may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft.

- **CONTROLLED FIRING AREA.** Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons or property on the ground.

- **MILITARY OPERATIONS AREA (MOA).** Designated airspace with defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from instrument flight rule (IFR) traffic and to identify for visual flight rule (VFR) traffic where these activities are conducted.

- **PROHIBITED AREA.** Designated airspace within which the flight of aircraft is prohibited.

- **RESTRICTED AREA.** Airspace designated under FAR 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use. When not in use by the using agency, IFR/VFR operations can be authorized by the controlling air traffic control facility.

- **WARNING AREA.** Airspace, which may contain hazards to nonparticipating aircraft.

STOPWAY. An area beyond the takeoff runway, no less wide than the runway and centered on the extended centerline of the runway, able to support an airplane during an aborted takeoff, without causing structural damage to the airplane, and designated for use in decelerating the airplane during an aborted takeoff.

STRAIGHT-IN LANDING / APPROACH. A landing made on a runway aligned within 30 degrees of the final approach course following completion of an instrument approach.

TACTICAL AIR NAVIGATION (TACAN). An ultra-high frequency electronic air navigation system, which provides suitably-equipped aircraft a continuous indication of bearing and distance to the TACAN station.

TAXILANE. A taxiway designed for low speed and precise taxiing. Taxilanes are usually, but not always, located outside the movement area, providing access from taxiways (usually an apron taxiway) to aircraft parking positions and other terminal areas.

TAXIWAY. A defined path established for the taxiing of aircraft from one part of an airport to another.

TAXIWAY DESIGN GROUP (TDG). A classification of airplanes based on outer to outer Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance.

TAXIWAY SAFETY AREA (TSA). A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

THRESHOLD. The beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

TOUCH-AND-GO. An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and-go is recorded as two operations: one operation for the landing and one operation for the takeoff.

TOUCHDOWN ZONE (TDZ). The first 3,000 feet of the runway beginning at the threshold.

TOUCHDOWN ZONE ELEVATION (TDZE). The highest elevation in the touchdown zone.

TOUCHDOWN ZONE (TDZ) LIGHTING. Two rows of transverse light bars located symmetrically about the runway centerline normally at 100-foot intervals. The basic system extends 3,000 feet along the runway.

TRAFFIC PATTERN. The traffic flow that is prescribed for an aircraft landing or taking off from an airport. The components of a typical traffic pattern are the upwind leg, crosswind leg, downwind leg, and final approach.

UNCONTROLLED AIRPORT. An airport without an air traffic control tower at which the control of visual VFR traffic is not exercised.

UNCONTROLLED AIRSPACE. Airspace within which aircraft are not subject to air traffic control.

UNICOM. A nongovernmental communication facility, which may provide airport information at certain airports. Locations and frequencies of UNICOMs are shown on aeronautical charts and publications.

VISUAL APPROACH. An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control on an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR conditions.

VISUAL APPROACH SLOPE INDICATOR (VASI). An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high-intensity red and white focused light beams, which indicate to the pilot whether or he or she is on path. Some airports serving large aircraft have three-bar VASIs that provide two visual guide paths to the same runway.

VISUAL FLIGHT RULES (VFR). Rules that govern the procedures for conducting flight under visual conditions. The term VFR is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirement. In addition, it is used by pilots and controllers to indicate type of flight plan.

VISUAL METEOROLOGICAL CONDITIONS. Meteorological conditions expressed in terms of specific visibility and ceiling conditions which are equal to or greater than the threshold values for instrument meteorological conditions.

WIDE AREA AUGMENTATION SYSTEM (WAAS). The Wide Area Augmentation System (WAAS) uses a system of ground stations to provide necessary augmentations to the GPS Standard Positioning Service (SPS) navigation signal. A network of precisely surveyed ground reference stations is strategically positioned across the country to collect GPS satellite data. Using this information, a message is developed to correct any signal errors.

APPENDIX B

Air Cargo Study

Doña Ana County International Jetport – Air Cargo Task

Prepared for
Doña Ana County International Jetport

August 2016

CDM Smith

Air Cargo Analysis

This analysis will evaluate the potential for expanded air cargo services at Doña Ana County International Jetport (5T6). A review of neighboring competitive facilities and an overview of potential opportunities for expanded air cargo activity at the airport will be conducted. This analysis will include an overview of the air cargo industry, a summary of air cargo trends, market area identification, and potential air cargo facility development needs based on a forecast of potential air cargo users.

Air Cargo Industry Overview

Although generally a smaller focus than the commercial passenger sector, air cargo is a vital component of the global aviation industry. Air cargo growth is both a contributor to and bellwether of a region's economic health. Air cargo is typically among the first services cut during difficult economic conditions, and is often one of the last to resume after conditions rebound. Air cargo is essential to global trade, as it transports approximately 33 percent of total trade by value. Much like with passenger airlines, emerging markets are the key to growth as advanced economies have a more mature air cargo market. The forces of globalization, urbanization, and industrialization have resulted in rapid middle class expansion in emerging markets, which is a major driver of air cargo growth.

At the national level, the air cargo industry has experienced significant volatility in a relatively mature industry. High fuel costs and a recessed economic climate caused a domestic cargo industry shift to greater reliance on trucking where unit cost savings became higher priority than shipment time. As customer bases and market shares contracted, air cargo carriers adapted by consolidating, shifting business models, or in some cases ceasing operations. Kitty Hawk Air Cargo ceased operating in 2008; BAX Global was acquired by DB Schenker in 2005 and ceased domestic air cargo activities in 2011; UPS acquired Menlo Worldwide (formerly Emery Worldwide) in 2004 and closed the Dayton hub in 2006; DHL acquired Airborne Express in 2003 and closed the Wilmington (Ohio) hub in 2009 after DHL withdrew from domestic delivery. Having originally started as a trucking company, UPS prefers to keep as lean an operation as possible, sorting much of its freight off-airport.

As a result of these changes, outside of smaller regional contract or charter operators the current landscape of the domestic air cargo industry has effectively become a duopoly with FedEx and UPS as the last major air cargo providers left standing. However, in January 2016 it was announced that e-commerce giant Amazon would enter the air cargo market by leasing 20 Boeing 767 freighters to be operated out of the former DHL hub in Wilmington, Ohio. Amazon later announced a deal to lease another 20 Boeing 767s, bringing its fleet wide total to 40 aircraft. Amazon is operating these aircraft on "trunk" routes between Wilmington, Ohio and airports on the periphery of major metropolitan areas near its regional fulfillment centers, connecting its distribution network internally.

Analysis indicates that the advantage for Amazon is that the company can now manage its own air traffic volumes since it monitors the amount of cargo that needs to be transported from distribution centers in Tampa to the West and East Coasts on a daily basis. Rather than give its cargo to third party providers, such as FedEx and UPS, where it would pay a premium and compete for limited space with other cargo shippers[1], Amazon saves money by chartering a plane itself and benefits by providing its own capacity.

Internationally, Alibaba, Amazon's Chinese e-commerce competitor, has been dominating the logistics industry on a global scale, much as it has already done to Chinese domestic e-commerce. Its logistics arm, called Cainiao, was only formed in 2013, but is already a complete logistics network that aims to offer next-day delivery service in 50 cities by the end of 2016. Since its launch, Cainiao has partnered with thousands of large and small established logistics service providers, and is establishing warehouse and distribution centers in 12 key cities. It has opened service centers in 1,200 villages and rural provinces which function as digital ordering sites since many Chinese do not own a computer or device. The company even recently launched a mobile app so consumers can use smartphones to track their orders and locate nearby established package pick-up points since many packages are not delivered to a consumer's home.

It is yet to be seen how Amazon's entry into the domestic market will impact air cargo trends – possible….it spur additional air cargo demand or simply shift existing cargo from one carrier to another? Outside of Amazon, the most significant area of growth for the air freight industry has been on international segments between major markets. The more mature U.S. domestic market has been relatively flat over the past decade, with the rapid growth of 1980s and 1990s a distant memory. However, as the economy continues to strengthen and trade grows, so too will the demand for air cargo. The Boeing World Air Cargo Forecast 2014-2015 projects Revenue Ton Miles (RTM) growth of 2.1 percent annually from 2013 to 2033 for intra-North American air cargo.[2] Regional trade forecasts between North America-Asia, North America-Europe, and North America-Latin America are all projected to be over five percent annually over the same time period.[3]

Types of Air Cargo

Air cargo demand is generated when there is a need for expeditious transportation of material and goods between two points. In the business world, logistics managers must justify the use of air cargo as their preferred mode of transport, as shipping by air has a greater cost than shipping via truck, rail, and maritime modes. Factors involved in deciding to transport via air include:

- Cost of transporting the material
- Level of service commitment to the customer or end user
- Value of the material
- Time-sensitivity or perishability of the material

Products best suited for air cargo shipping are those that benefit from increased speed of distribution or better stock availability. Those products tend to be high value, relatively light weight, and/or time critical.

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[1] In this context a shipper is defined as an entity that creates demand for shipping services. I.e. Amazon sells products where shipping is required to get said products to the customer.

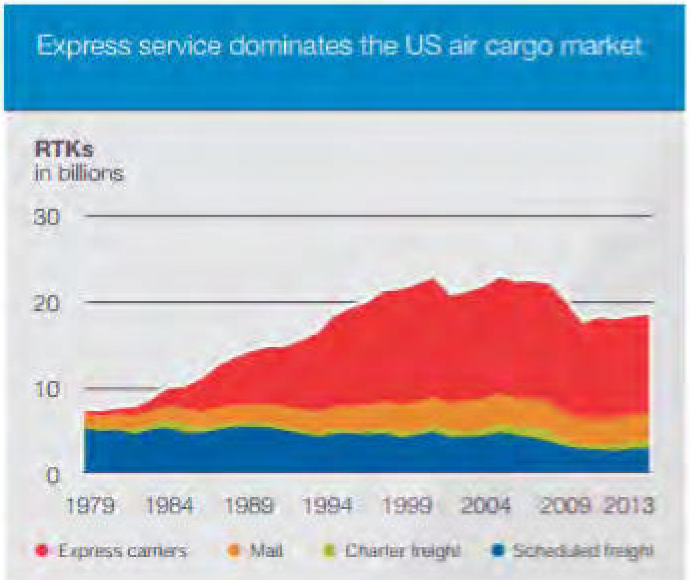
[2] Revenue Ton Mile: A single ton of goods that is transported for one mile. Revenue ton miles are used to determine the total amount of freight that is shipped by a transportation company. Airlines determine revenue ton miles by multiplying the weight of paid tonnage by the total number of miles it has transported.

[3] Boeing World Cargo Forecast Team, *World Air Cargo Forecast: 2014-2105*, September 2014

Cargo Airline Types

Air cargo is transported on passenger aircraft, as well as freighters or cargo-only aircraft as described below. **Exhibit 1** provides historic perspective on annual cargo volumes in Revenue Ton Kilometers (RTKs) for express traffic, mail, chartered freight, and scheduled freight. As illustrated by the graph, the express has grown since the early 1980s to dominate U.S. air cargo traffic.

Exhibit 1
Historic Air Cargo Market Share



Source: Boeing World Air Cargo Forecast 2014-2015

Passenger Airlines

Air cargo services provided by passenger airlines vary in scope and size from airline to airline, based on the type of aircraft operating within their fleet. A regional airline, with a fleet of turboprop and regional jets, cannot accommodate bulky cargo due to limited cargo capacity in baggage compartments. Airlines operating widebody passenger aircraft often have containerized lower decks and are capable of handling larger shipments. Passenger airlines generally provide airport-to-airport service, with freight and mail carried as "belly" cargo. Freight on passenger airlines is dropped off at a warehouse at the origination airport by the shipper (or freight forwarder); the freight is then picked up at the destination airport by the customer (or freight forwarder) after arriving on the passenger airline.

All-Cargo Carriers

All-cargo carriers operate airport-to-airport air cargo and freight services for their customers but do not offer passenger service. All-cargo carriers include Polar Air Cargo, Atlas Air, and Kalitta Air Cargo, to name a few. Prior to its merger with Delta Air Lines, Northwest Airlines was one of the world's largest cargo airlines, operating a dedicated fleet of 14 B747F freighters. It was the only U.S. combination carrier (passenger and cargo service) to operate dedicated 747 freighters. As a result of the Northwest/Delta merger, the dedicated Northwest cargo freighters have been phased out and

Delta is once again a belly-only cargo carrier.[4] Internationally, Japan Airlines, Korean Air, China Airlines, Singapore Airlines, Lufthansa, and Emirates are also passenger airlines with their own fleet of dedicated freighter aircraft. Other all-cargo carriers without passenger service include: Jade Air Cargo, Atlas Air, Polar Air Cargo and Evergreen. All-cargo carriers offer scheduled service to major markets throughout the world using widebody and/or containerized cargo aircraft.

Combination Aircraft Carriers

Carriers that have both passenger and freighter aircraft in their fleet are considered "combination carriers." These carriers include Cathay Pacific, Emirates, and Lufthansa. For example, Lufthansa operates freighter versions of the MD-11F and the B777F. Combination Aircraft Carriers are often confused with a type of aircraft which carries both passengers and cargo on the main deck of the aircraft. "Combi" aircraft in commercial aviation is an aircraft that can be used to carry either passengers, as an airliner, or cargo as a freighter, and may have a bulkhead partition in the aircraft cabin to allow both uses at once. These combi aircraft typically feature an oversized cargo door, as well as tracks on the cabin floor to allow the seats to be added or removed quickly. These aircraft were marketed early on by Boeing as "Convertible" or "QC" (Quick Change), since they facilitated a rapid conversion between roles. Alaska Airlines operates B737-400 combi aircraft to primarily service airports in Alaska. At the international level, Asiana and KLM continue to operate B747-400 combi aircraft which allow ULD containers and pallets to be loaded onto the rear portion of the main deck through a large cargo door while passengers travel in the forward portion of the main deck.

Heavy Lift Cargo Freighters

Heavy lift cargo freighters are operated by charter cargo airlines such as Volga-Dnepr Airlines and Antonov Airlines, providing specialized heavy lift operations with its fleet of Antonov An-124 and An-225 aircraft, respectively. Limited numbers of these aircraft exist, as they are some of the largest aircraft in the world; therefore, operations are typically highly specialized charters. These carriers transport goods and equipment for businesses and governments. This type of cargo operation is commonly referred to as project cargo.

Integrated Express (FedEx Express, UPS, and DHL)

Integrated express operators move the customer's goods door-to-door, providing shipment collection, transport via air/truck, and delivery. Integrated express operators include FedEx Express, UPS, and DHL (DHL's U.S. domestic pickup and delivery service was discontinued in January 2009). FedEx has several product types that utilize the FedEx brand name in some form. FedEx Express is the integrated express arm of the company, providing the "overnight service" synonymous with the brand. FedEx Freight is a trucking division which specializes in freight weighing over 150 pounds and offers fast-cycle logistics with regional next- and second-day service, including accelerated service in three days or more. **Table 1** shows the express operators that use a hub-and-spoke transport model, similar to passenger airlines. The air cargo hub used for package sortation and aircraft transfer is the backbone of integrated express operators. This allows for total product connection to each market in the operator's system. Each day of operation, flights from around the world arrive at the hub, where packages are unloaded, sorted by destination market, and then loaded onto outbound aircraft. Integrators often make heavy use of automated sorting at their hub terminals in order to achieve desired turnaround times and delivery commitments.

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[4] Air Cargo News, 2010

Table 1
Worldwide Integrator Hub Airports

DHL	FedEx Express	UPS
United States		
Cincinnati/Northern Kentucky	Memphis International	Louisville International
International	Indianapolis International	Philadelphia International
	Fort Worth Alliance	LA/Ontario International (CA)
	Newark Liberty International	Dallas/Fort Worth International
	Oakland International	Chicago Rockford International
	Ted Stevens Anchorage International	Columbia Metropolitan
Latin America/Caribbean		
Miami International	Miami International	Miami International
Tocumen International		
Canada		
	Toronto Pearson International	John C. Munro Hamilton International
Europe/Middle East/Africa		
Leipzig/Halle	Cologne Bonn Airport	Cologne Bonn Airport
East Midlands Airport	Paris-Charles de Gaulle Airport	
Bahrain International		
Asia Pacific		
Hong Kong International	Guangzhou Baiyun International	Hong Kong International
Chennai International		Shenzen Bao'an International
		Shanghai Pudong International

Source: CDM Smith

Regional Air Cargo Carriers (Empire Airlines, Mountain Air, Ameriflight)

Regional air cargo carriers operate between O&D/local market stations and smaller or more remote cargo markets, typically in support of a larger integrated express cargo operator such as FedEx, UPS, or DHL. Empire Airlines and Mountain Air Cargo are examples of contracted "feeder" airlines to both UPS and FedEx. Feeder flights often transport cargo from a smaller market and feed cargo to an awaiting cargo jet bound for the carrier's hub. Feeder aircraft may also fly directly to a hub. Ameriflight is a regional cargo carrier not affiliated with any larger airline, providing custom and time-critical charter flights moving air freight from point-to-point.

Air Forwarders/Road Feeder Service

A freight forwarder is an intermediary that arranges the best means of transport for goods, typically by accepting small packages from shippers and consolidating them into container loads. These loads are then transferred to the non-integrated carrier or passenger airline to deliver to an agent or subsidiary at the destination airport. (FedEx, UPS, and DHL sell capacity to forwarders when space permits). Freight forwarders rely heavily on lift provided by commercial passenger carriers, road feeder service providers, as well as all-cargo carriers. Freight forwarders generally have their leading gateways near major hub airports such as Chicago O'Hare International and New York's John F. Kennedy International. One major exception is Huntsville International, where several major forwarders have operated for many years. The largest international air freight forwarders are DHL Global Forwarding, Kuehne + Nagel, DB Schenker, and Panalpina.

Forward Air is another example of a freight forwarder, which provides scheduled surface transportation for less-than-truckload (LTL) air cargo shipments coming off aircraft that must be delivered at a specific time, but is less time-sensitive than traditional integrated express services. This is a reliable and more cost-effective alternative to air transportation. Forward Air operates its central sorting facility at Rickenbacker International Airport in Columbus, Ohio, in addition to 11 regional sort centers on or near airports.

Road Feeder Service (RFS)

Road Feeder Service is a service offered by a scheduled cargo operator to move goods to and from the aircraft and/or terminal by truck road service. This allows a carrier to offer services to a city to which it does not fly aircraft. These services are typically allocated an airline waybill number although no aircraft may be involved in the transport.

Specialized (medical, etc)

Quest Diagnostics, a diagnostic testing and information services firm with its own fleet of aircraft, provides transport service for laboratory test samples, medical materials, and equipment. Many of the aircraft are small jets and turboprop aircraft customized to carry time and temperature sensitive items.

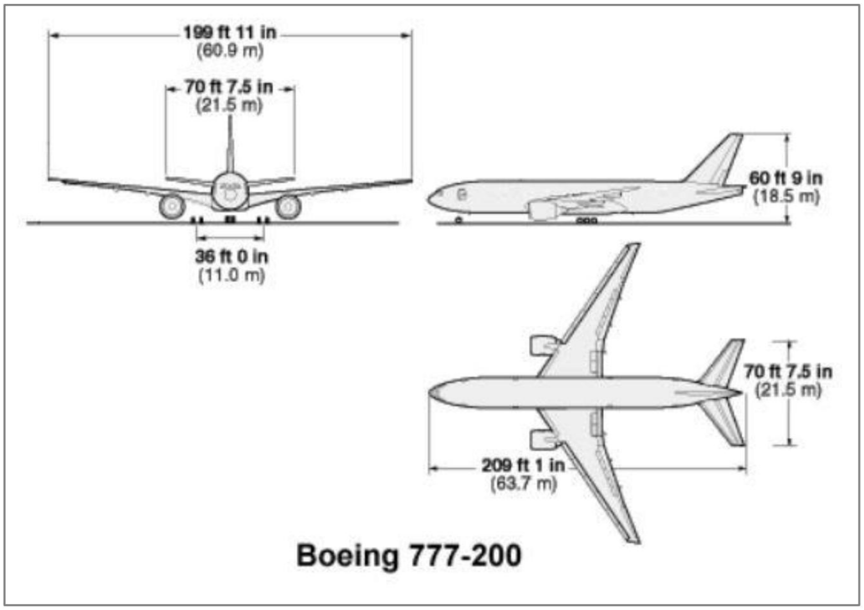
Aircraft Types

There are three major kinds of aircraft that serve as air freighters: widebody jets, narrow-body jets, and narrow-body turboprop aircraft which commonly function as feeder aircraft. A significant number of freighters in service today are converted passenger aircraft that have reached the end of their service life as passenger carriers as illustrated in **Exhibit 2** and **Exhibit 3**. Other freighters, particularly widebody freighters, are manufactured as such by Boeing and Airbus. The converted freighters tend to be significantly older, less fuel efficient, and, given their age, are more susceptible to maintenance problems than their passenger carrier counterparts and recently manufactured freighters. Freighters used on international North Atlantic and Pacific routes are usually widebody freighter aircraft with payloads ranging from 80,000 to 234,000 pounds. The exception is the DC-8 which is a narrow-body transoceanic aircraft.

As stated previously, international air cargo travels in the baggage compartment, or lower deck, of passenger aircraft; this cargo is also referred to as "belly cargo." The widebody aircraft that typically serve these routes offer substantial freight capacity. This capacity is increasing with the next generation of aircraft. For example, the Airbus A330/340 passenger aircraft have much greater cargo capacity per available seat than their predecessors, offering space for up to 32 lower deck containers. Pure freighters utilize both main deck (normally the passenger area) and lower deck positions ("baggage compartments") for freight carriage.

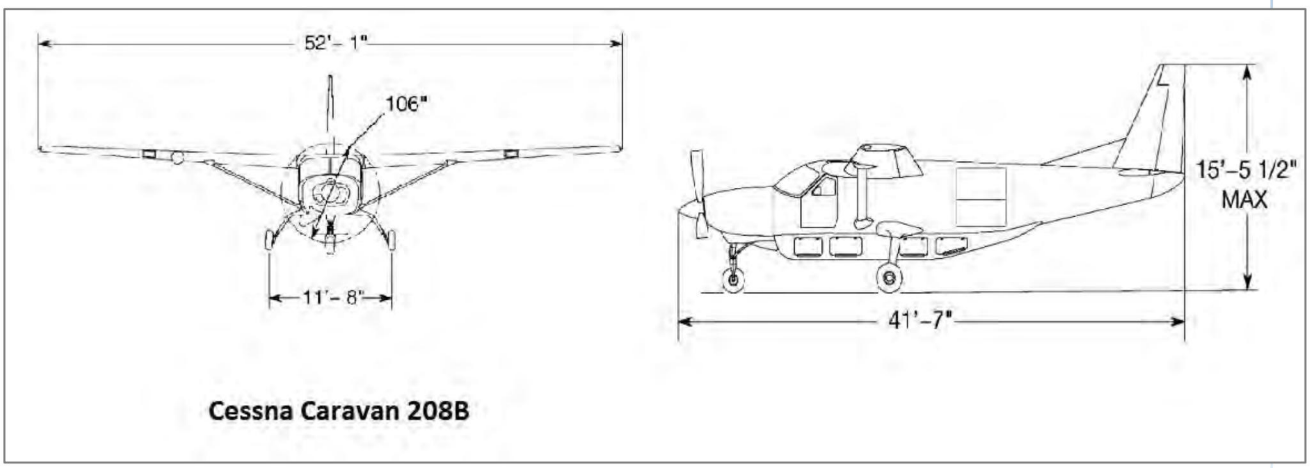
The sharp increase in jet fuel costs has forced air cargo carriers to reconsider the practice of flying older, less fuel efficient aircraft. In 2005, Boeing had a record year for orders of freighter aircraft. The rising fuel costs made airlines realize they needed to "re-fleet" to modern, more fuel efficient aircraft. For example, Nippon Cargo Airlines (NCA) currently operates eight B747-400 aircraft. In 2005, they ordered 10 B747-800, which is marketed as the most efficient cargo plane in the world with greater fuel efficiency and space for four additional main deck containers.

Exhibit 2
Wide Body Freighter Sample
Boeing 777-200



Source: Boeing Aircraft Characteristics for Airport Planning

Exhibit 3
Regional Air Cargo Feeder Aircraft Sample
Cessna Caravan 208B



Source: Cessna Information Manual

Perhaps one of the most unique attributes of widebody and narrow-body freighter aircraft is their ability to accommodate unit load devices (ULDs), which include containers and pallets. These aircraft have large doors and rollers fastened to the deck of the aircraft. These aircraft allow containers and pallets laden with freight and mail to be rolled on and off aircraft with relative ease.

Unit Load Device (ULD)

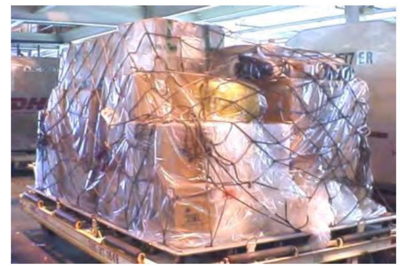
A Unit Load Device (ULS) is either a container or pallet that is loaded onto the aircraft and unloaded at its destination. Types of ULDs are illustrated in **Exhibit 4**. A container is an aluminum box that is shaped to fit the contoured sides of an aircraft. A pallet is a solid wood, metal, or plastic transport structure on which shipments are stacked and wrapped in plastic and netting.

Exhibit 4
Types of Unit Load Devices (ULD)

Upper Deck Container

Lower Deck Container

Upper Deck Pallet



Source: CDM Smith

Approximately 50% of international air cargo travels in the baggage compartment, or lower deck, of passenger aircraft; this cargo is also referred to as "belly cargo." The widebody aircraft that typically serve these routes offer substantial freight capacity in lower deck containers.

Narrow-body jet aircraft are typically used for average short haul domestic routes, while feeder aircraft serve relatively smaller market needs. Narrow-body aircraft payloads range from 18,000 pounds to 95,000 pounds. Feeder aircraft payloads can range from 2,000 to 10,000 pounds. Upper decks on narrow-body aircraft accommodate containers, while the lower deck is bulk loaded in a process in which individual pieces of freight are placed directly into the aircraft without the benefit of containers. Feeder aircraft, such as the Cessna Caravan, are typically bulk loaded only.

Air Cargo Carrier Airport Selection

Air cargo carrier operations on airports are the result of a carrier identifying local demand for a cargo aircraft. Cargo operations initiation at an airport are based on several demand scenarios:

- New market entry - trucks replaced by aircraft to expedite cargo traffic
- Carrier relocating an aircraft from one airport market to another for better service
- Demand for larger aircraft due to increases in cargo volumes

Air Cargo Carrier Operations - New Market Entry

When integrated express carriers' aircraft reach capacity on a regular basis they must make a decision as to the most economical means to increase the capacity. The choices they face range from trucking cargo to another airport where another aircraft in their fleet has additional capacity to increasing the size of aircraft currently scheduled in the market. Customer commitments may be impacted when trucking cargo to an airport outside the market since the truck operation moves up the cut-off times for afternoon package pickups. It may also increase package collection costs as additional couriers and vehicles may be needed to meet the earlier customer package pickups. Another option is for integrated express carriers to add a new aircraft route to a nearby airport.

In 2012 FedEx Express initiated aircraft operations at Palm Beach International Airport (PBI). FedEx Express previously served the Palm Beach market area by trucking packages, parcels, and freight to FedEx aircraft at Ft Lauderdale/Hollywood International Airport. FedEx replaced trucking cargo by adding an Airbus A310 which is routed to their global hub in Memphis. This route operates twice a day. As a result of adding a cargo jet at PBI the carrier discontinued the FedEx C208 operation at Vero Beach Municipal, since that market is trucked to and from PBI where cargo is loaded and unloaded onto the A310.

Air Cargo Carrier Aircraft Station Relocations

In October of 2012, Louisville-based UPS Airlines relocated its regional sorting operation from Brookley Aeroplex at Mobile Downtown Airport (BFM) in Mobile, Alabama, to Pensacola International Airport (PNS). Based on discussions with UPS personnel, the purpose of the relocation was to better serve the region and provide operational cost savings. As part of the relocation, the UPS transferred four of its own employees from Mobile to Pensacola, and GAT Airline Support, a contracted ground handler for UPS, also transferred 28 part-time jobs from Mobile to Pensacola. The City of Pensacola provided UPS with a $25,000 relocation incentive in return for infrastructure improvements UPS has agreed to make, according to published reports. UPS currently operates five weekly flights from Pensacola International using widebody Airbus A300-600 aircraft, which is shared with Southwest Georgia Regional Airport (ABY) in Albany, Georgia, both to and from UPS' Louisville hub. UPS previously had a month-to-month lease agreement for some 10 years at Mobile Brookley Aeroplex. FedEx Express continues to operate its regional sorting facility out of Mobile Downtown with over 21 flights per week.

In the late 1990s, DHL had one aircraft based at San Antonio International Airport (SAT) to serve both the San Antonio and Austin Texas markets. The Austin market was served by trucking to and from SAT. Although San Antonio had a population with 500,000 more residents than Austin, DHL chose to relocate its aircraft to Austin Bergstrom International Airport since computer manufacturing giants - Dell, Samsung and Advanced Micro Devices - insisted on better morning delivery and evening collections cut-off times. Other airports have seen air cargo service enhancements as a result of customer needs. In Lafayette, Louisiana, FedEx obliged jewelry manufacturer Stuller Settings by placing a "spare" aircraft at Lafayette Regional Airport to support FedEx's primary aircraft in case there is a mechanical issue. Many carriers such as FedEx and UPS place spare aircraft in certain regions of the country to quickly replace aircraft with mechanical issues in their region.

Air Cargo at General Aviation Airports

General aviation airports are frequently used by regional air cargo operators as they provide several advantages over larger commercial service airports. General aviation airports are typically less congested, both in the airspace within the airport's vicinity and on the ground. On the ground, GA airports allow for shorter taxi-times, provide easy roadway access on the landside, and are usually close in proximity to their market area. Due to the small loads carried by regional air cargo aircraft, ground support requirements are much less labor intensive and are therefore easily accommodated by GA airports. Fixed Base Operators (FBOs) are available at most GA airports, which are capable of providing a wide array of services for the carriers, further limiting the need for capital investment by the carriers themselves. Together, all of these factors enable the air cargo carriers to get closer to their customer base and shorten turnaround times at airports along multi-stop routes.

Air Cargo Market Overview

Population

Doña Ana County International Jetport is located in the southern portion of Doña Ana County in Santa Teresa, New Mexico. The air cargo market area for Doña Ana County International Jetport can be roughly defined as the El Paso-Juárez "Borderplex", which consists of El Paso, Texas, Southern New Mexico, and Ciudad Juárez in the Mexican state of Chihuahua. The Borderplex is one of the world's largest border communities with an estimated population of approximately 2.6 million. Ciduad Juárez makes up over half of the Borderplex population. According to state demographic resources, the population of the El-Paso Las Cruces Combined Statistical Area (CSA) is forecast to grow by nearly 1 percent annually from 2015 to 2035, as shown in **Table 2.**

Table 2
Market Area Population Forecast

Year	El Paso-Las Cruces CSA
2015	1,075,093
2020	1,136,096
2025	1,195,706
2035	1,299,511
CAGR	**0.95%**

Source: New Mexico Economic Development Department, Texas Demographic Center

According to the Bureau of Economic Analysis, per capita personal income for the El Paso-Las Cruces CSA has increased by 3.3 percent annually from $23,610 in 2005 to $31,554 in 2014. The region's assets include a bilingual business environment, 70-plus Fortune 500 companies, a highly motivated and skilled workforce, state-of-the-art telecommunications, international railways, five international crossings, 14 universities/colleges, 40 industrial parks, and an average of 340 days of sunshine per year.[5]

Advantages

Santa Teresa Port of Entry (POE) and Industrial Parks

The Santa Teresa Port of Entry, located less than 10 miles from 5T6, is the easternmost land bridge between the U.S. and Mexico. Opened in 1998 to compete with POEs in El Paso, years of slow progress has recently been picking up as warehouse and manufacturing space has steadily begun to fill up in Santa Teresa's industrial parks. Many businesses are relocating from Texas and California due to the cheaper square footage and quick access to Mexico and Interstate 10.[6] The four industrial parks in Santa Teresa (Santa Teresa Airport Park, Santa Teresa Intermodal Park, West Park, and the Santa Teresa Border Industrial Park) have seen strong growth due to New Mexico's overweight zone for commercial cargo, which is a 12-mile radius around Santa Teresa POE that is approved for overweight shipments of up to 96,000 pounds (recently increased from 80,000 pounds). This allows for

[5] Mesilla Valley Economic Development Alliance

[6] http://bigstory.ap.org/article/58b30bc42d754a66b2ab28fd7a1272c7/planners-seek-transform-border-town-destination

overweight shipments to move from Chihuahua north through the less congested port and into warehouse facilities in Santa Teresa, where the loads will be reduced and distributed across the U.S. Many businesses in Santa Teresa's industrial parks specialize in this form of logistics. Additionally, Doña Ana County is eligible to establish a free-trade zone anywhere within the county under Foreign Trade Zone (FTZ) 197.

The Union Pacific Railroad recently opened a $400 million terminal facility adjacent to 5T6 that is slated to become a major transshipment hub for container shipments between the Ports of Los Angeles/Long Beach and the rest of the country. The Santa Teresa facility is the cutoff point for a double track rail corridor all the way from Los Angeles, which is one of the largest rail corridors in the U.S. by volume. A planned customs station at this facility will allow processing of containers arriving by ship in Santa Teresa instead of at the Ports. Although rail freight is not typically associated with air cargo, this facility is expected to spur further growth in logistics on both sides of the border.

With much of the land within the El Paso city limits nearly fully developed, planners and developers are expecting much of the future growth to occur in and around the Santa Teresa/Sunland Park area. This area makes up the majority of the region's remaining flat land suitable for commercial and industrial development. The proximity to the relatively uncongested Santa Teresa POE only enhances the strategic value of this area for development. Future development plans in the area call for industrial, residential, commercial, and solar-energy land uses. As the area grows, the air cargo market potential for 5T6 will increase as well.

Maquiladoras

Cuidad Juárez is home to a number of manufacturing plants that are known as "maquiladoras", or simply "maquilas." The maquila industry has seen tremendous growth in recent years as a result of the nearshoring trend. Nearshoring is the outsourcing of business processes, such as manufacturing, to a nearby country. In this case, American corporations are bringing manufacturing processes to Mexico instead of more distant locations commonly seen in traditional outsourcing, such as in Asia.

Juárez is home to over 300 maquilas, of which more than 70 are Fortune 500 companies. Some of the major manufacturing sectors represented in Juárez include appliances, pharmaceuticals, industrial machinery, transportation equipment, aerospace components, communications equipment, electronics, and computer equipment. Notable firms include Philips, Epxon, Toshiba, Electrolux, Bosch, Ford, Goodyear, Johnson & Johnson, Foxconn, Flextronics, Lexmark, Delphi, Visteon, Johnson Controls, Lear, Boeing, Cardinal Health, Yazaki, Sumitomo, and Siemens.[7]

One of the largest maquilas in Juárez is Foxconn, which assembles electronics for major technology firms. In 2011, Foxconn's exports were worth $8.6 billion, or 2 percent of Mexico's total exports, second only to General Motors. Foxconn's production is shared among three factories in and around Cuidad Juárez. Eventually, all production will be moved to the San Jerónimo location along the border south of Santa Teresa, and the current facility will expand to accommodate it. Centralizing production will help Foxconn exploit economies of scale for logistics, employee transport, and dining services.

[7] https://www.tecma.com/locations/ciudad-juarez/

Two-Airport Market Examples

There are a number of two-airport markets in the U.S. similar in size to the primary air cargo market of 5T6, which mainly consists of the El Paso-Las Cruces CSA. These examples include Detroit, Columbus, Sacramento, and Seattle.

The Detroit Metropolitan Statistical Area (MSA), with a population of nearly 4.3 million, is served by both Detroit Metropolitan Wayne County Airport (DTW) and Willow Run Airport (YIP). In addition to passenger airline belly cargo, the big three integrators (DHL, FedEx, and UPS) operate out of DTW with flights to their regional hubs. YIP is home to Kalitta Air and National Airlines, which operate international scheduled and ad-hoc cargo charter services. Any air cargo activity that occurs is considered unscheduled, or “ad hoc”, charter operations by piston or turbo-prop aircraft.

The Columbus (Ohio) MSA, with a population of over 2 million, is home to two airports that serve distinct roles: Port Columbus International (CMH) and Rickenbacker International Airport (LCK). CMH primarily serves commercial passenger flights while LCK serves as the air cargo airport for the region with operations by cargo airlines Cargolux, Cathay Pacific, Emirates, FedEx, UPS, and others as needed. Air cargo service at LCK was sought out as part of the development of the Rickenbacker Inland Port as a logistics hub with intermodal connectivity to rail, trucking, and air.

In the Sacramento MSA, an area with over 2.1 million people, there are two airports that also serve distinct roles: Sacramento International Airport (SMF) and Sacramento Mather Airport (MHR). Similar to Columbus, SMF serves as the passenger airport while MHR serves as the cargo airport, with service by Ameriflight and UPS.

With a population of over 3.7 million, the Seattle MSA is home to a number of airports, including two that serve the air cargo needs of the region. Seattle-Tacoma International Airport (SEA) is the primary passenger service airport and is also the largest air cargo airport in the region, with service by 14 individual cargo airlines. Boeing Field (BFI) serves as a general aviation and air cargo airport, with service by six air cargo carriers.

Current Air Cargo Activity at 5T6

Doña Ana County International Jetport does not currently support any regularly scheduled air cargo activity. Nordstar previously based air cargo aircraft at Doña Ana County International Jetport for approximately 20 years. This air cargo aircraft were based out of 5T6 but rarely picked up or dropped off cargo at the airport. The majority of the time Nordstar ferried empty aircraft from 5T6 to El Paso International Airport to pick up loads, which is where the air cargo demand and support services exist. This service ceased in 2008 after accusations of air piracy by Mexican authorities. The owner of Nordstar, Mr. Terry Nord, has stated that he has not ruled out restarting the operation, but emphasized that there are many barriers to entry for a regional carrier and international operations face many challenges. Nordstar’s previous air cargo service was operated using DC-3 and Cessna Caravan aircraft. Mr. Nord still maintains two based aircraft at the 5T6 (Beech 18 and Super DC-3).

Competing Airports

Within the air cargo market area of 5T6, there are two competing airports with air cargo activity: El Paso International (ELP) and Las Cruces International (LRU). In adjacent market areas, there are three airports with significant air cargo activity: Albuquerque International Sunport (ABQ), Dallas-Ft. Worth International (DFW), and George Bush Intercontinental (IAH). Austin-Bergstrom International Airport

(AUS) and San Antonio International Airport (SAT) are also included since each serve market areas comparable in size and growth to El Paso-Las Cruces CSA.

El Paso International (ELP)

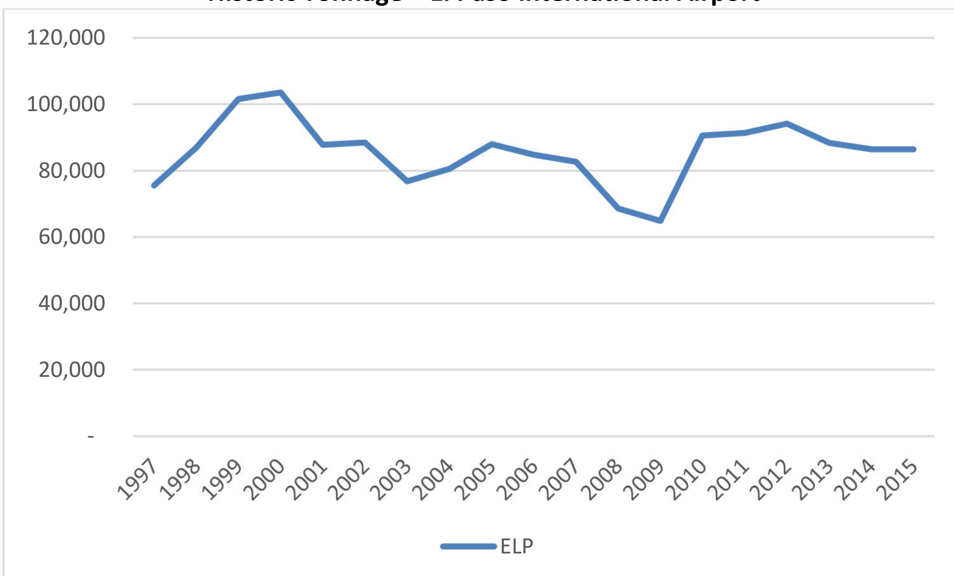
El Paso International Airport (ELP) is the primary airport for the region, serving commercial service passenger flights, general aviation operations, and significant levels of air cargo activity. ELP facilities include three runways, 4-22, 8R-26L and 8L-26R, and 117,000 square yards of apron. The airport is also in close proximity to a railway and Interstate 10. ELP has developed air cargo facilities to create the largest fully integrated transportation center on the U.S. - Mexico border. This development includes two 144,000-square foot air cargo buildings, over 34 acres of aircraft parking and 6.4 miles of roadways. Airport management touts that the $60 million investment has resulted in the largest state-of-the-art air cargo complex on the U.S. - Mexico border.

According to airport management, the 280,000-square foot cargo complex has an occupancy rate approaching 70 percent and has immediate expansion capabilities, putting El Paso at an advantage in border trade and associated economic development issues. These new facilities are centered in a future industrial park tailored to the "just-in-time" market in the U.S. - Mexico trade. The airport is also part of Foreign Trade Zone (FTZ #68), which provides several advantages for users including deferred or reduced customs duties on goods shipped within the zone. This is particularly useful for the international trade between businesses in El Paso and Ciudad Juárez, Mexico. However, it is important to point out that 5T6 is also within a Foreign Trade Zone – Doña Ana County FTZ #197.

Regularly scheduled air cargo carriers at ELP include integrators FedEx Express, DHL, and UPS. These carriers primarily operate domestic routes to their regional hubs within the U.S. However, international flights are not uncommon at ELP as one cargo carrier operates flights between ELP and Chihuahua carrying auto parts manufactured in the U.S. to auto manufacturing plants located in Mexico. Ameriflight operates as a contract feeder airline for UPS, operating out of ELP to serve several small market cities throughout New Mexico. Other carriers that have operated regularly or on an ad hoc basis over the past 12 months include: Amerijet, Ameristar Jet Charter, Atlas Air, Cargojet, Central Air Southwest, Charter Air Transport, Cherry Air, Encore Air Cargo, Freight Runners Express, Gemini Air Cargo, GTA Air, Kalitta Charters, Kolob Air Cargo, McNeely Charter Services, Mountain Air Cargo, National Cargo, Northern Air Cargo, Priority Air Charter, Royal Air Freight, USA Jet Airlines, and Vent Airlines.

Air cargo tonnage at ELP peaked in 2000, and since that time has been fluctuating. **Exhibit 5** illustrates the annual tonnage trends at ELP. As shown in Exhibit 5, there was a sharp increase in air cargo tonnage at ELP during 2010. Tonnage increased 40 percent in 2010 from 2009 levels. From 1997-2015 ELP tonnage has grown at a rate of 0.8 percent annually. Since 2010, tonnage has decreased by 0.9 percent annually.

Exhibit 5
Historic Tonnage – El Paso International Airport



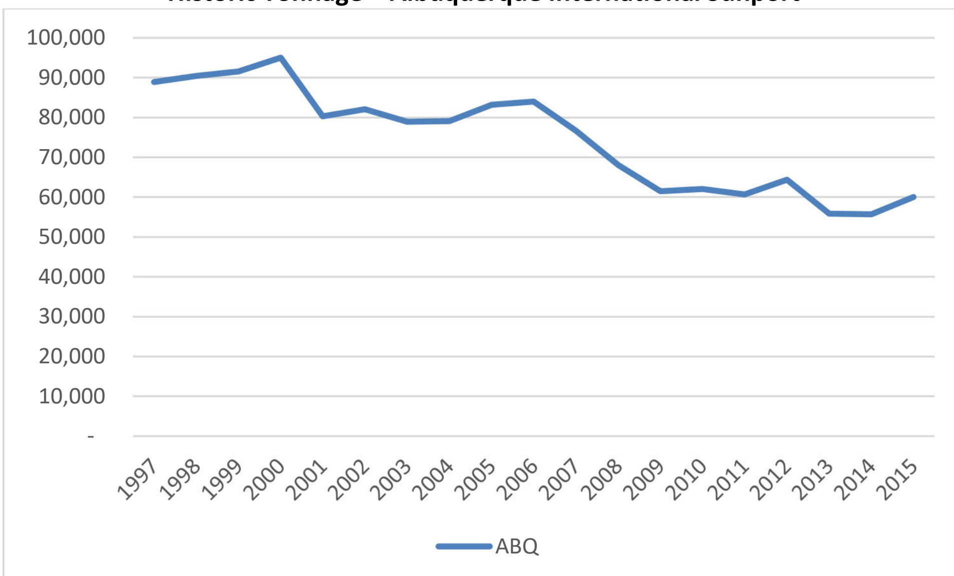
Source: Airport Records, Airports Council International – North America (ACI-NA)

Albuquerque International Sunport (ABQ)

Albuquerque International Sunport (ABQ) is the largest commercial service airport in New Mexico, serving Albuquerque and Santa Fe. ABQ is served by eight passenger airlines with nonstop service to 22 destinations. In 2015 ABQ experienced nearly 2.4 million passenger enplanements. ABQ is a joint civil-military airport that shares its three runways with Kirtland Air Force Base, one of the largest U.S. Air Force installations.

With regard to air cargo, ABQ serves the air cargo needs of the Central New Mexico market area with scheduled service by integrated express operators FedEx and UPS. Empire Airlines and Ameriflight operate as contracted feeder airlines for FedEx and UPS, connecting many smaller market cities around New Mexico and Colorado. From ABQ, FedEx operates to Lubbock, Memphis, and Oklahoma City, while UPS operates to Dallas/Fort Worth, El Paso, Louisville, Ontario (CA), and Phoenix. As shown in **Exhibit 6**, total air cargo tonnage has been on a steady decline since 1997. Average annual change in ABQ tonnage was -2.6 percent from 1997 to 2015, -3.2 percent from 2005 to 2015, and -0.7 percent from 2010 to 2015.

Exhibit 6
Historic Tonnage – Albuquerque International Sunport



Source: Airport Records, Airports Council International – North America (ACI-NA)

Las Cruces International (LRU)

Las Cruces is a busy general aviation airport situated just off Interstate 10 in Las Cruces, approximately 50 miles north of 5T6 in Doña Ana County. LRU has had a number of commercial passenger airlines come and go in its history, with the last ceasing operation in 2005. The air cargo needs of the Las Cruces area are primarily served through the integrated express carriers that operate at El Paso International, which is a 45-minute drive from downtown Las Cruces. LRU's only scheduled air cargo service is daily Ameriflight service to Albuquerque using twin-engine piston Piper Navajo (PA31) aircraft. This Ameriflight service is a feeder flight for UPS aircraft at ABQ.

No historic or current air cargo tonnage data is available for Las Cruces International.

Dallas/Fort Worth International (DFW)

In 2015, DFW was ranked as the 11th busiest cargo airport in North America by Airports Council International. Air carriers benefit from many of DFW's competitive advantages such as direct highway access, central North American location, 2 million square feet of cargo warehouse space, 24-hour customs clearance, seven runways, and continual facilities investment. The airport is also designated as a Foreign Trade Zone (FTZ #39), which provides several advantages such as direct airside access, convenient rail access, and deferred or eliminated customs tariffs.

In 1995, UPS completed a 340,000-square foot regional hub building at DFW that is capable of handling 46,000 parcels per hour on a state-of-the-art conveyor and sorting system. Since that time, UPS expanded the distribution center by 24,000 square feet. The facility is designed to accommodate 19 jet aircraft including Boeing 757s, 767s and 747s.

Dedicated cargo carriers at DFW include AirBridgeCargo Airlines, Air China Cargo, Air Transport International, Ameriflight, Asiana Cargo, ASL Airlines Belgium, Cargojet, Cargolux, Cathay Pacific Cargo, China Airlines Cargo, DHL, Empire Airlines, Eva Air Cargo, FedEx Express, Korean Air Cargo, Lufthansa Cargo, Martinaire, Nippon Cargo Airlines, Qantas Freight, Singapore Airlines Cargo, and UPS. These carriers represent over 180 weekly flights from DFW, to markets throughout North America, South America, Europe, and Asia. International destinations include Beijing, Hong Kong, Hanoi, Shanghai, Taipei, Seoul, Hanoi, Mumbai, Singapore, Mexico City, Manchester, Brussels, Frankfurt, Copenhagen, and Sharjah. Ameriflight and Empire Airlines serve as contract feeder airlines for UPS and FedEx, respectively. In 2014 Ameriflight relocated its headquarters from Bob Hope Burbank Airport to DFW to more effectively serve its customers.[8]

The Asian cargo market has played a significant role in the growth of air cargo at DFW and is becoming an increasingly important trade market. According to trade data, Asia accounts for 52 percent of all air cargo trade at DFW, and China represents 39 percent of all Asian cargo trade. The trade is driven by exports to Asia, as communications equipment, computers, and computer equipment account for 57 percent of the trade between the Asia and DFW.

In addition to the cargo carriers at DFW, numerous passenger airlines provide cargo lift capacity on routes operated with wide-body passenger aircraft. These aircraft have space designed to hold cargo containers in the belly of the aircraft and serve many international destinations in Europe, Latin America, Asia, and Australia.

The airport touts that DFW is one of the largest inland global distribution centers in the region, encompassing 18,076 acres of land. DFW's cargo facilities offer direct airside access within an interior airport road system that connects to four major interstate highways. DFW's marketing material indicates the airport has designated more than 2,000 acres of airport land for air cargo facility development.

Air cargo tonnage at DFW peaked between 1999 and 2000 and has shown little growth since then. **Exhibit 7** illustrates the annual air cargo tonnage at DFW. There was a steep decrease in annual tonnage that occurred beginning from 2000 until 2002. This was followed by a period of slow growth in cargo tonnage until 2007, at which point air cargo tonnage decreased until 2010. Average annual change in DFW tonnage was -1.3 percent from 1997 to 2015, -1.0 percent from 2005 to 2015, and 0.8 percent from 2010 to 2015.

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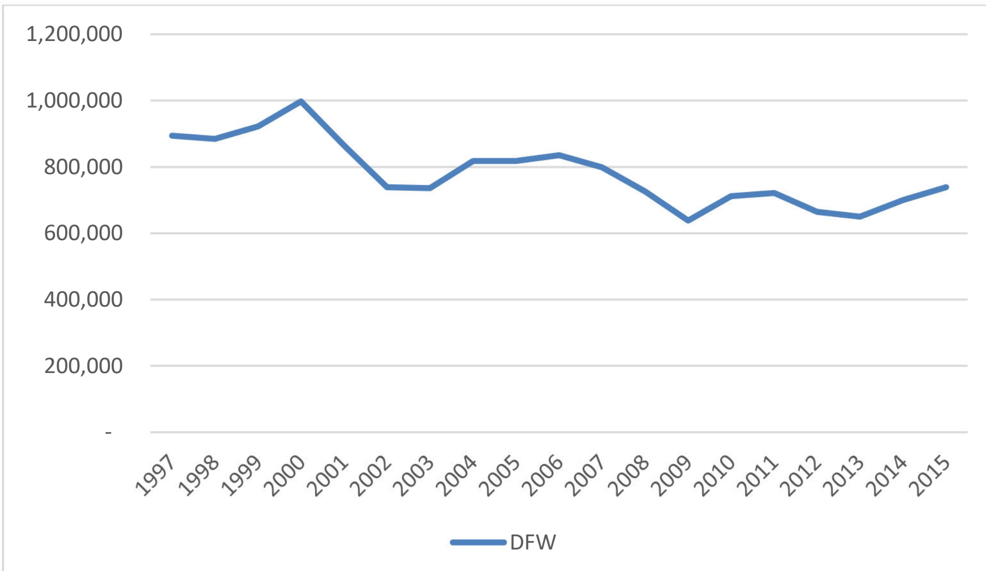
[8] http://aviationblog.dallasnews.com/2014/05/ameriflight-will-relocate-its-headquarters-to-dallasfort-worth-from-california.html/

Exhibit 7
Historic Tonnage – Dallas/Fort Worth International Airport



Source: Airport Records, Airports Council International – North America (ACI-NA)

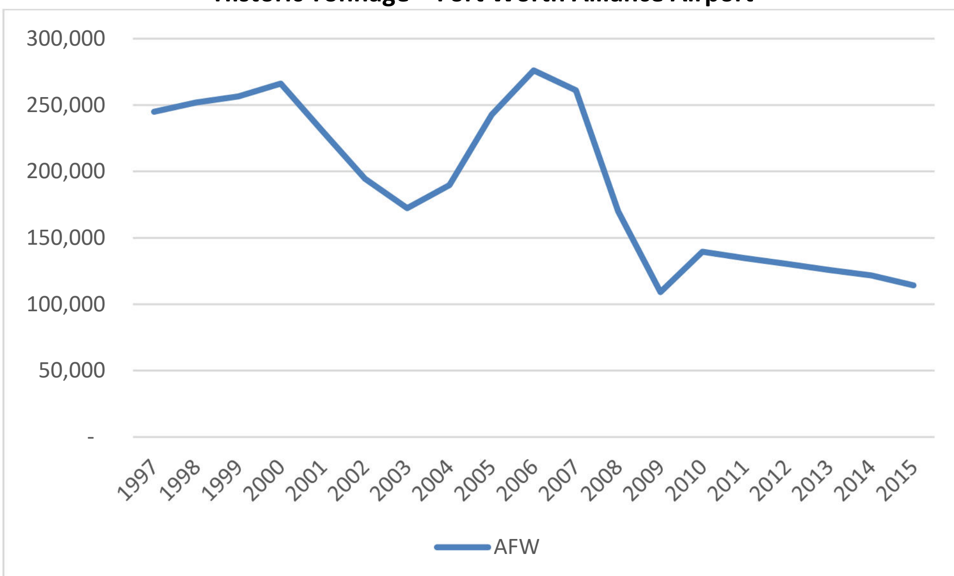
Fort Worth Alliance Airport (AFW)

Fort Worth Alliance Airport (AFW) is located 16 miles north of downtown Fort Worth and is situated on 1,198 acres of land. AFW features a 9,600-foot long primary runway and an 8,200-foot long parallel runway capable of accommodating all types of commercial aircraft. FedEx Express operates its southwest regional hub at AFW where it provides domestic cargo capacity to international gateway airports in the U.S., such as Atlanta, Chicago-O'Hare, Denver, Houston-Intercontinental, Los Angeles, Memphis, San Francisco, and Seattle.

AFW was home to an American Airlines maintenance base until the bankruptcy of its parent company in late 2011. GDC Technics currently occupies this space for its aircraft modifications business. The airport is home to several major tenants, including, ATX Air Services, Bell Helicopter, BNSF Railway intermodal facility, CEVA Logistics, Drug Enforcement Administration, DynCorp International, FAA Flight Standards Service Office, Tarrant County College Aviation Learning Center, and U.S. Customs and Border Protection. Special facilities at the airport include a Foreign Trade Zone (FTZ).

Exhibit 8 illustrates the air cargo tonnage for AFW from 1997 until 2015 (it should be noted that data was unavailable from 1997 to 1999, 2001, and from 2011 to 2012. Therefore the data was estimated where necessary). Air cargo tonnage at AFW increased steadily from 2003 until its peak in 2006, at which time total tonnage at AFW decreased dramatically until 2010. Average annual change in AFW tonnage was -3.8 percent from 1997 to 2015, -7.3 percent from 2005 to 2015, and -3.9 percent from 2010 to 2015.

Exhibit 8
Historic Tonnage – Fort Worth Alliance Airport



Source: Airport Records, Airports Council International – North America (ACI-NA)

George Bush Intercontinental Airport (IAH)

The George Bush Intercontinental Airport (IAH) is situated on 10,000 acres of land and has five runways, the longest of which measures 12,001 feet in length. The Houston Airport System (HAS) has dedicated over $180 million in improvements to IAH that have resulted in a new air cargo distribution center, bringing IAH's total to 1 million square feet of dedicated cargo space. Special cargo facilities include refrigerated storage space for perishables and specialized animal and plant inspection facilities. Improved runways, taxiways, and ground access resulted in more efficient movement of pallets and crates.

IAH is served by more than 33 passenger airlines, which serve approximately 150 destinations throughout the world. United Airlines, which merged with Continental Airlines in 2010, operates its largest passenger hub at IAH, providing service to many domestic and international cities. IAH has increased its services to become one of the fastest emerging U.S. airport gateways to Asia, and also one of the fastest growing in terms of international destinations.

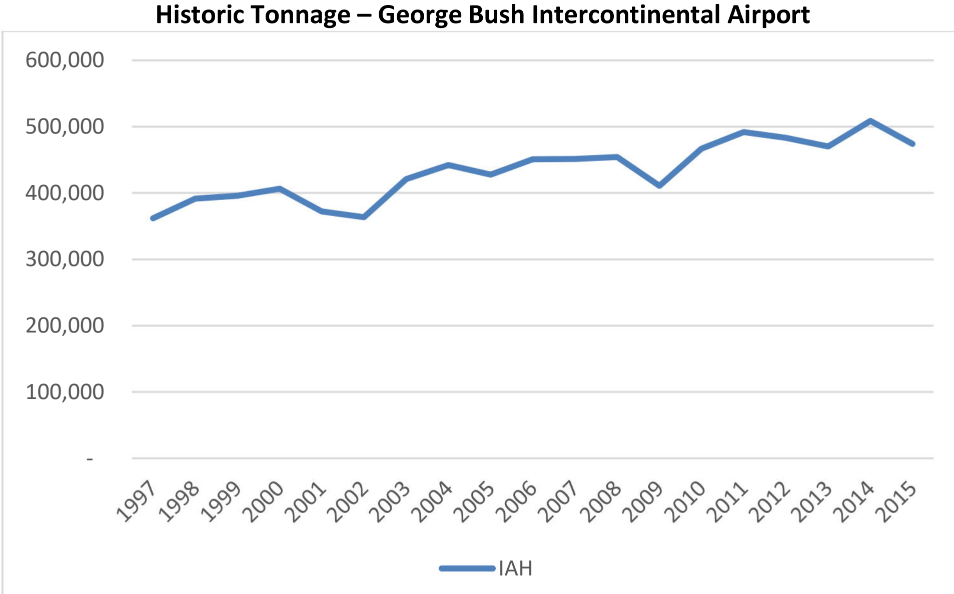
IAH is served by over 20 major cargo airlines and many more cargo support services. Operators include integrated express carriers such as FedEx Express, UPS, and DHL; as well as all cargo carriers such as Air France Cargo, Ameristar Air Cargo, Baron Aviation, Cargolux, Cathay Pacific Cargo, Centurion Air Cargo, China Airlines Cargo, Emirates SkyCargo, Lufthansa Cargo, Martinare, Qatar Airways Cargo, and Turkish Airlines Cargo.

In addition, numerous passenger airlines provide cargo lift capacity on routes operated with widebody aircraft. These aircraft have space designed to hold cargo containers in the belly of the aircraft. This cargo capacity is utilized primarily on international routes where widebody aircraft are necessary. IAH and its airlines serve the region with widebody flights to many international destinations in Europe, Latin America, and Asia. Air France, Air China, Air New Zealand, All Nippon Airways, British Airways, Emirates, KLM, Korean Air, Qatar Airways, Lufthansa, Singapore Airlines, Turkish Airlines, and United Airlines are examples of international widebody operators.

Common goods shipped through IAH include oilfield equipment, computers, auto parts, medical/biotech goods, and perishables/flowers. Air cargo growth at IAH can largely be attributed to the global expansion oil/gas exploration, where Houston has numerous corporate headquarters for oil and gas entities. Houston also has a significant high tech and bio/medical sector, which contributes to the air cargo demand.

Exhibit 9 illustrates the historic annual air cargo tonnage at IAH. From 1997 until 2015, tonnage has grown relatively steadily by 1.9 percent annually. The steepest increase in annual tonnage occurred in 2010 with a 14 percent increase from the previous year. From 2005 to 2015, tonnage grew by 1.0 percent annually, and most recently by 0.3 percent annually from 2010 to 2015.

Exhibit 9
Historic Tonnage – George Bush Intercontinental Airport



Source: Airport Records, Airports Council International – North America (ACI-NA)

Austin-Bergstrom International Airport (AUS)

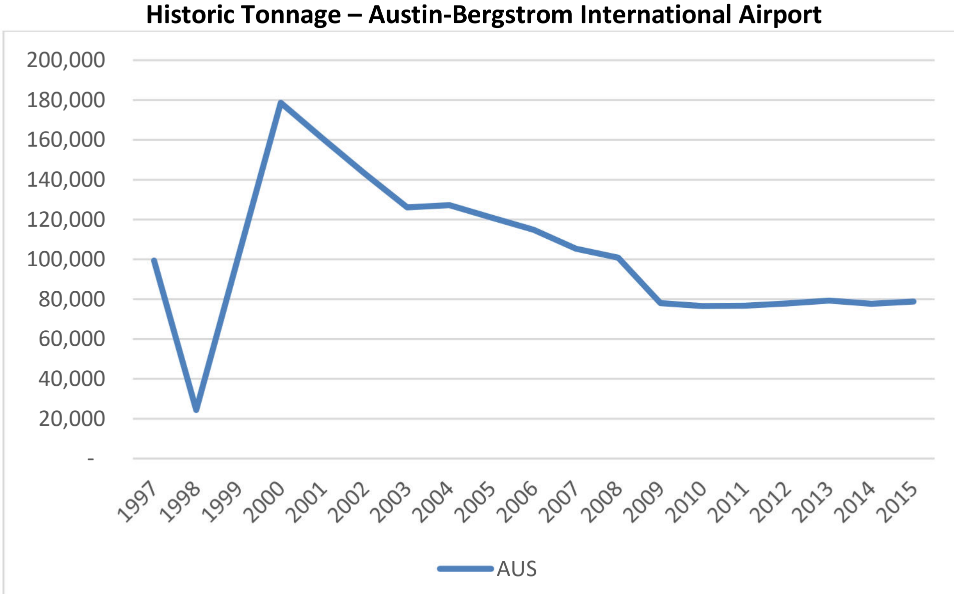
Air cargo operations commenced at Austin-Bergstrom International Airport (AUS) on June 30, 1997. Utilizing the 12,250-foot long runway, carriers serving the Austin area include Baron Aviation Service, DHL, FedEx Express, and UPS. The Austin area is home to one of the fastest growing high tech markets in the U.S. and is commonly referred to as the "Silicon Hills," which is similar to California's "Silicon Valley" high tech industry cluster. Samsung and Advanced Micro Devices (AMD) as well as Dell's world headquarters are located in Austin. In fact, DHL moved its air cargo operation to Austin-Bergstrom

International from San Antonio International to be in closer proximity to Austin's high tech industry. Although San Antonio is a larger market, DHL chose to locate their cargo jet in Austin to meet the early delivery needs of high tech customers. The airport is located on the site of the former Bergstrom Air Force Base, eight miles southeast of Austin's central business district at the intersection of U.S. Highway 183 and Texas Highway 71.

The airport's cargo warehouse facilities are located at the northern end of the property, allowing for quick access to Interstate 35 via State Highway 71. More than $25 million in private capital was invested in the air cargo facilities, which included substantial infrastructure improvements for the city, such as a portion of the aircraft parking ramp, roads, and storm water drainage. AUS is a good example of a successful public-private real estate and infrastructure development partnership with Lynxs a locally based air cargo facility real estate firm.

Air cargo tonnage at AUS peaked in 2000 as a result of the internet boom and air shipment of high tech commodities. Since the 2000 peak, air cargo tonnage declined steadily until 2009. During the boom, large volumes of computers, monitors, cables, modems, and other equipment were being shipped to meet the demand of the high tech sector. **Exhibit 10** illustrates the annual tonnage trends at AUS from 1997 to 2015. A steep decrease in annual tonnage occurred from 2001 until 2009. Since 2009 tonnage has leveled-off, indicating the market has stabilized. Average annual change in AUS tonnage was -1.4 percent from 1997 to 2015, -4.2 percent from 2005 to 2015, and 0.6 percent from 2010 to 2015.

Exhibit 10
Historic Tonnage – Austin-Bergstrom International Airport



Source: Airport Records, Airports Council International – North America (ACI-NA)

San Antonio International Airport (SAT)

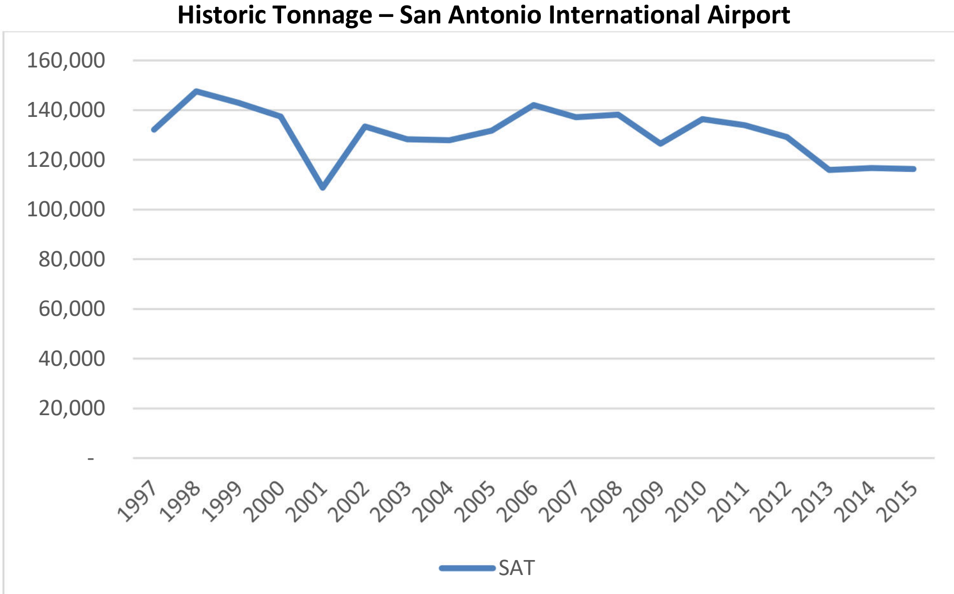
Existing air and landside facilities for SAT include three runways, 12R-30L, 3-21 and 12L-30R, 173,414 square yards of apron and 888,000 square feet of building space for the transfer and storage of freight. USDA and U. S. Customs Services are located at the airport; however, agents will go to the cargo facilities for inspections. Other attributes include two Foreign Trade Zone (FTZ) designated facilities and multimodal (highway and rail) access.

Thirteen passenger air carriers serve San Antonio International to various destinations throughout the U.S. and Mexico. International flights include routes from SAT to Mexico City, Cancun, Monterrey, and Guadalajara. The cargo needs of the San Antonio market are served by UPS and FedEx Express, who both operate flights to their respective hubs and throughout Texas from SAT. Martinaire and Ameriflight serve as contract feeder airlines for UPS and FedEx, connecting many smaller Texas markets to San Antonio.

SAT competes locally with Kelly Field Airport, which is located on the former Kelly Air Force Base. Operated by the Port Authority of San Antonio, Kelly Field Airport was established to serve as an aerospace complex. The 1,900 acre industrial complex is home to over 70 private and public organizations, employing 12,000 workers centered in the aerospace, logistics/manufacturing, and government/military sectors. Major aerospace firms include Boeing and Lockheed Martin. Kelly Field Annex has a FTZ designation, U.S. Customs Federal Inspection Service, and access to railroads and interstate highways.

Since 1997, San Antonio International's overall growth in annual air cargo tonnage has been relatively flat with a number of minor fluctuations. **Exhibit 11** illustrates the annual tonnage trends at SAT from 1997 to 2015. Average annual change in SAT tonnage was -0.7 percent from 1997 to 2015, -1.2 percent from 2005 to 2015, and -3.1 percent from 2010 to 2015.

Exhibit 11
Historic Tonnage – San Antonio International Airport



Source: Airport Records, Airports Council International – North America (ACI-NA)

A summary of historic air cargo tonnage trends are presented in **Table 3**.

Table 3
Summary of Historic Air Cargo Tonnage for Competing Airports

FAA ID	ABQ	AFW	AUS	DFW	ELP	IAH	SAT
1997	88,920	245,000	99,405	893,930	75,494	361,855	132,133
1998	90,438	251,861*	24,359	884,017	86,890	391,277	147,595
1999	91,585	256,541*	101,579	921,732	101,586	395,649	142,908
2000	95,028	266,164	178,633	997,584	103,549	406,199	137,406
2001	80,332	230,322*	160,609	864,305	87,778	372,407	108,797
2002	82,078	194,479	142,919	738,889	88,426	363,529	133,440
2003	78,924	172,365	126,112	735,874	76,797	421,001	128,345
2004	79,134	189,648	127,188	818,233	80,554	442,176	127,887
2005	83,157	242,655	120,882	817,699	87,985	427,465	131,708
2006	83,975	276,104	114,856	835,392	84,758	450,979	142,037
2007	76,719	261,110	105,367	798,227	82,632	451,058	137,116
2008	68,110	169,886	100,920	725,919	68,525	454,391	138,141
2009	61,508	109,117	78,023	638,134	64,852	410,789	126,449
2010	62,020	139,527	76,497	711,460	90,599	466,810	136,452
2011	60,696	134,816*	76,672	721,368	91,385	491,992	133,949
2012	64,359	130,264*	77,793	664,748	94,146	483,225	129,166
2013	55,876	125,866*	79,263	649,613	88,372	470,007	115,892
2014	55,693	121,617	77,704	699,964	86,460	508,707	116,667
2015	60,000	114,235	78,742	738,580	86,465	473,756	116,344
CAGR 1997-2015	-2.6%	-3.8%	-1.4%	-1.3%	0.8%	1.9%	-0.7%
CAGR 2005-2015	-3.2%	-7.3%	-4.2%	-1.0%	-0.2%	1.0%	-1.2%
CAGR 2010-2015	-0.7%	-3.9%	0.6%	0.8%	-0.9%	0.3%	-3.1%

*Note: Tonnage figures estimated for these years; data unavailable
Source: Airport Records, Airports Council International – North America (ACI-NA)

Air Cargo Demand

Data Collection Effort

With assistance from Airport Manager Bill Provance and Jerry Pacheco, President of the Border Industrial Association (BIA), the consultant worked to identify area businesses that could comprise the potential air cargo market for Doña Ana County International Jetport. Focus was placed on businesses that have a higher propensity to use air cargo, which typically are those that are involved in the manufacture, assembly, warehousing, transportation, or general business services involving goods/products that are conducive to air cargo. As discussed in the air cargo industry overview, goods/products that are conducive to air cargo are typically high value, relatively light weight, and/or time-sensitive.

Of the 40-plus BIA member businesses in Santa Teresa, 21 were identified as potential air cargo users. Mr. Pacheco aided in the identification of businesses and in making introductions by sending an announcement to all targeted BIA members. Several other non-BIA businesses in the market area viewed as potential users of air cargo services or key sources of pertinent information were also added to the list of targeted interviewees. An outreach effort was conducted to request each business' participation in face-to-face interviews to discuss their supply chain and logistics processes as well as current and potential utilization of air cargo services. In-person interviews took place from May 31st through June 2nd of 2016, while additional interviews and follow up efforts were conducted by phone and email.

Data Collection Findings

Information requested from each business revolved around their current logistics needs and whether or not potential air cargo services at Doña Ana County International Jetport would be of benefit to their operation. More specifically, discussions focused on obtaining information regarding types of commodities shipped, percentage shipped by mode (truck/rail/air), top points of origin or destination, current use of air cargo services, and logistical constraints related to inbound/outbound shipments. If air cargo services are currently a part of that organization's supply chain, then the extent was obtained in terms of annual tonnage by directional flow. Future projections of volume were also requested. Any business with a logistical supply chain to, from, or through the Santa Teresa market area – whether currently using air cargo or not – was asked to discuss the usefulness of an enhanced Doña Ana County International Jetport capable of accommodating air cargo operations.

Table 4 lists the 27 businesses targeted for an interview and includes a short company description and point of contact.

Table 4
Area Businesses Requested for Study Participation

Participation		Company	Company Description	Contact
Santa Teresa Industrial Park and Area Businesses/Organizations				
1	✓	Foxconn	Dell/HP Computer Assembly	Pancho Uranga
2	✓	CommScope	Telecommunications Equipment Mfg	Carlos Torres
3	✓	JH Rose Logistics	Third Party Logistics	Louie Navar
4	✓	Northwire	Wire and Cable Mfg	Javier Delgadillo
5	✓	Sterigenics	Sterilization Services (food products/medical devices)	Steve Ortiz
6	✓	IWG	Copper Wire Mfg	Lorenzo Rios
7	✓	CN Wire	Copper Wire Mfg	Tony Mobley
8	✓	Mallory Metal Products	Metal Fabrication Services	Alonso MalDoñado

Table 4
Area Businesses Requested for Study Participation

Participation		Company	Company Description	Contact
9	✓	Stanco Metal Products	Metal Fabrication Services	Jerry Slagel
10	✓	Continental Automotive Systems US	Motor Vehicle Parts: fuel systems	Hugo Leyva
11	✓	Francis Aviation	5T6 FBO	Scott Andre
12	✓	Chris Lyons	Real Estate Developer	Chris Lyons
13	✓	Nordstar Airlines	Former and potential future air cargo carrier	Terry Nord
14	✗	FXI	Flexible Polyurethane Foam Mfg (Automotive)	Jose Ramirez
15	✗	DA Inc	Plastic Injection Molding (Automotive)	Francisco Villaseñor
16	✗	ACME Mills	Warehouse/Distribution Industrial Textiles (Automotive)	Alexander Sierra
17	✗	Monarch Litho Inc	Printing: Lithographic	Guillermo Lopez
18	✗	ERO Intermodal Services	Rail-Related Maintenance Repair Services	Ernesto Olivas
19	✗	Georgia-Pacific	Cardboard Corrugated Panel Mfg	Dave Grim
20	✗	MCS	Picture Frames	Benjamin Carillo
21	✗	Rogers Foam Corporation	Automotive Plastic	Damian Dunne
22	✗	Expeditors	Logistics	Austin Bengochea
23	✗	Ferza	Logistics	Lorenzo Fernandez
24	✗	Omega Trucking	Logistics	Miriam Kotkowski
25	✗	LADD Distributors	Logistics	David Ortega
26	✗	Warren Green	727 operations from Midwest into MX and ELP	Warren Green
27	✗	Industrial Realty Group Inc	Industrial Real Estate Investment Firm	Brent Harris

Source: CDM Smith

As shown in Table 4, of the 27 businesses contacted a total of 13 were willing to participate in an interview. Of those 13, seven indicated that they currently use air cargo to some degree in their supply chain. However, four of these businesses stated that the quantity of air cargo was either minimal or inconsistent in quantity, and the frequency of air cargo shipments is irregular/only as needed. Only three of the interviewed business were determined to have strong potential to use air cargo services at Doña Ana County International Jetport. Foxconn, CommScope, and JH Rose Logistics were identified as the largest current air cargo users and/or the highest potential users of air cargo services at 5T6.

Each of the respondent businesses are presented in **Table 5** with a "level of air cargo use" rating (High/Medium/Low) and a short description of air cargo use. Northwire, Sterigenics, CN Wire, and

Continental Automotive Systems all reported minimal or infrequent dependence on air cargo services, but were supportive of the concept of air cargo service at 5T6. IWG, Mallory Metal Products, and Stanco Metal Products reported no air cargo use.

Table 5
Business Respondents' Air Cargo Potential

Participation		Company	Level of Air Cargo Use	Air Cargo Use Description
Santa Teresa Industrial Park and Area Businesses/Organizations				
1	✓	Foxconn	High	All inbound raw material flown into LAX
2	✓	CommScope	High	50% of outbound finished product flown out of ELP
3	✓	JH Rose Logistics	Medium	Auto parts from Chihuahua to Memphis currently; involved in former Nordstar operation. Believes demand exists currently
4	✓	Northwire	Low	Minimal - small overnight parcels
5	✓	Sterigenics	Low	Minimal - depends on customer needs
6	✓	IWG	None	None
7	✓	CN Wire	Low	Minimal - catch-up shipments if needed, prefer to avoid
8	✓	Mallory Metal Products	None	None
9	✓	Stanco Metal Products	None	None
10	✓	Continental Automotive Systems US	Low	Minimal
11	✓	Francis Aviation	N/A	n/a - but knows industry players who have shown interest in moving to 5T6; would-be ground handler
12	✓	Chris Lyons	N/A	n/a - resource for area developments and presentation data needs; strong supporter
13	✓	Nordstar Airlines	N/A	Carrier; former and possible future user

Source: CDM Smith

With Foxconn, CommScope, and JH Rose Logistics identified as the most likely potential users of air cargo services at 5T6, each was evaluated further to determine to what extent they might use air cargo services at 5T6. Potential air cargo volumes, directional flow, and origins/destinations are important considerations in determining adequate airport facility requirements. Brief descriptions of each business and the findings regarding their current and potential air cargo needs are provided in the following section.

Foxconn

Taiwan-based Foxconn (officially Hon Hai Precision Industries) is the world's largest electronics manufacturing services company, contracting with major consumer electronics brands such as Apple, Amazon, Google, Sony, Microsoft, Nokia, Dell, Nintendo, Toshiba, Hewlett-Packard, and many others. Not only is Foxconn one of the world's largest employers with approximately 1.3 million global employees, but it is also the largest maquiladora operating in Mexico with over 7,500 employees at its

San Jerónimo plant. This facility, situated on the U.S.-Mexico border approximately eight miles south of 5T6, opened in 2009 and assembles Hewlett-Packard (HP) and Dell computers for the U.S. market. About 90 percent of all HP/Dell laptops, desktops, and server stacks sold in the U.S. are assembled at this facility. The plant currently produces around 10 million units annually, or 27,000 units per day. Stated full production capacity of the plant is 50,000 units per day.

In order to learn about Foxconn's logistical needs, the consultant interviewed Corporate Vice President and Chief Business Operations Officer for Foxconn Latin America, Francisco "Pancho" Uranga, and Luis Castillo, Supply Chain Manager for the San Jerónimo plant. The consultant learned that only inbound raw materials are currently flown by air. All outbound finished products are trucked into the U.S. for delivery. All inbound shipments are controlled by the parts suppliers, and outbound shipments of finished product are controlled by either HP or Dell. Computers are built and shipped within a 9-14 day delivery schedule, making Foxconn wholly dependent on just-in-time shipments from suppliers, rapid assembly, and speedy delivery to consumers.[9]

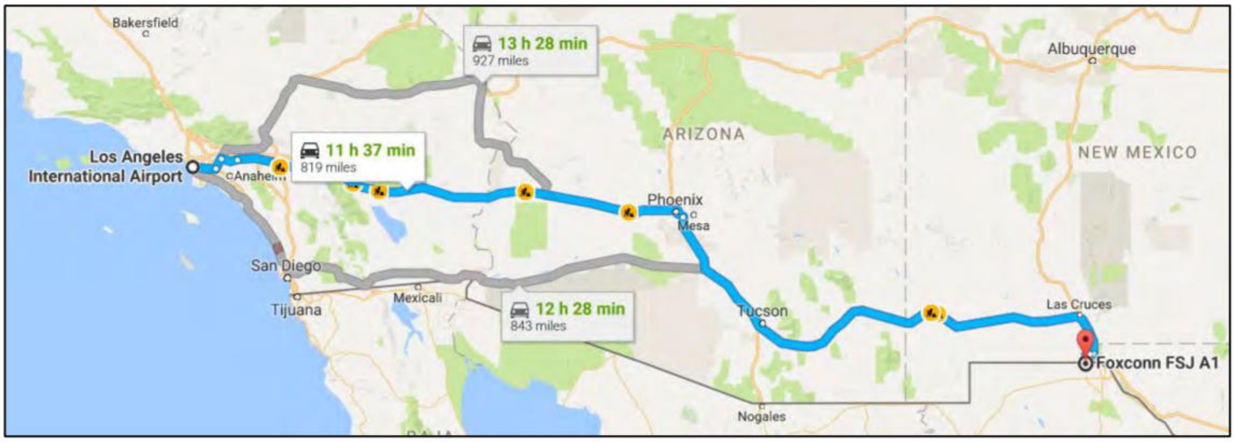
What is of possible interest to 5T6 are the raw materials that are flown into Los Angeles International Airport (LAX) from China, offloaded for customs clearance, and then trucked the 800-plus miles to the San Jerónimo plant via Interstate 10. Raw materials include physical computer components such as chips, hard drives, processors, graphic cards, motherboards, memory, fans, and frames. Foxconn's two primary suppliers are located near the Chinese cities of Tianjin and Wuhan. Approximately 52 percent of flights carrying Foxconn shipments originate from Tianjin's airport, and the remaining shipments originate from Wuhan's airport. Since there are very few, if any, nonstop flights from these cities to LAX, the palletized shipments are flown to larger airports with connectivity to LAX, such as Beijing, and Shanghai. From here, the shipments are transferred to LAX-bound flights.

These items are palletized for shipment and flown on all three types of air cargo carriers: all-cargo carriers, integrated express carriers, and passenger widebody aircraft. The shipment of these pallets are arranged by forwarders hired by Foxconn's suppliers, including DB Schenker, DHL Global, Wen-Parker Logistics, Morrison Express, UPS Supply Chains Services, and Express International.

Nonstop air travel time from China to LAX ranges from 11-12 hours depending on the specific point of origin. Upon arrival at LAX, the pallets are offloaded and cleared by customs before being trucked east. After customs clearance, which can take 6-12 hours, transit time from LAX to the Foxconn plant is approximately 12 hours. If trucks arrive in El Paso outside of normal operating hours (6:00 AM – 12:00 AM), shipments are held in a Foxconn-leased warehouse off of Interstate 10 in Northwest El Paso near Texas State Highway 178 (Artcraft Road). **Exhibit 12** illustrates the 800-mile truck route from LAX to Foxconn's plant via Interstate 10, while **Exhibit 13** shows the final 14-mile leg from Interstate 10 to the plant via Artcraft Road, which passes by 5T6.

[9] http://www.abqjournal.com/200914/expansion-plans-for-taiwanese-electronics-maquila-could-intensify-zones-rapid-growth.html

Exhibit 12
Current Foxconn Inbound Shipment Truck Route
LAX to Foxconn Plant



Source: Google Maps

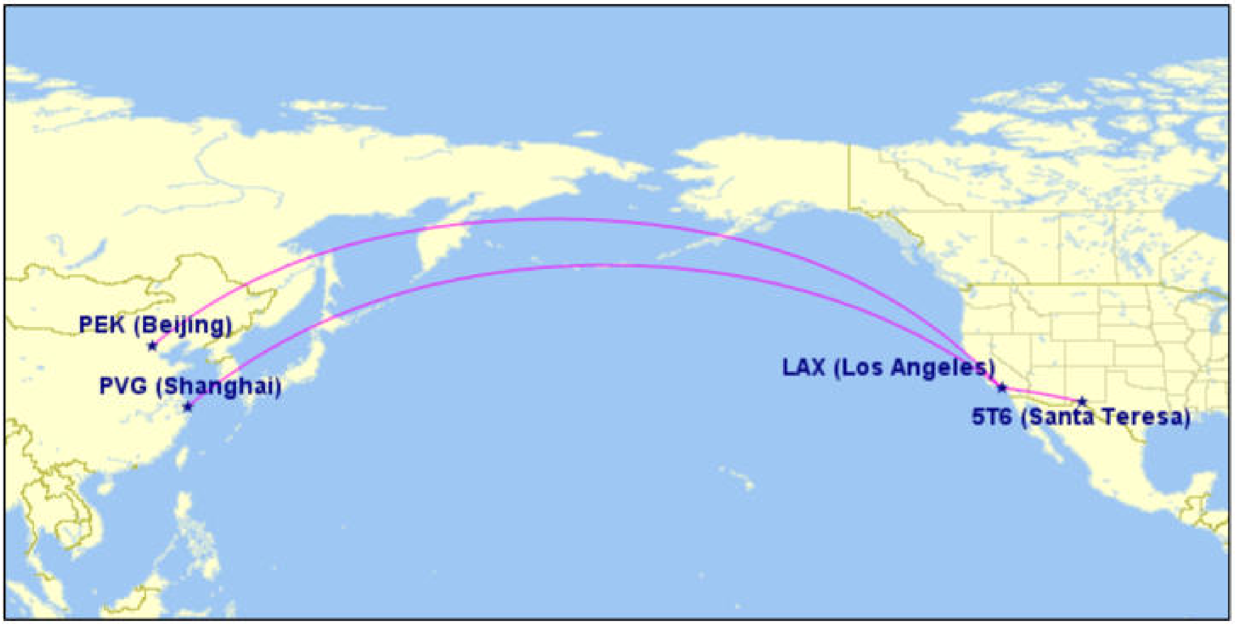
Exhibit 13
Current Foxconn Inbound Shipment Truck Route
Interstate 10 to Foxconn Plant

Source: Google Maps

Although this system works for Foxconn, delays in getting the raw materials are the biggest choke point in the manufacturing process. Mr. Uranaga and Mr. Castillo expressed interest in the possibility of flying these inbound shipments into 5T6 from LAX instead of trucking them in. In fact, 5T6 was a factor in the decision to locate the plant nearby in San Jerónimo. It is important to note that the raw materials are owned by the suppliers until they arrive at the Foxconn assembly plant, and the finished products become property of Dell/HP once they depart the factory. Therefore, Foxconn does not directly control its inbound or outbound supply chain flow – nor does it need to. Despite this fact, Foxconn stated they have regular input into supplier shipment decisions. Were the opportunity for air cargo service at 5T6 available, Foxconn would work with their suppliers and freight forwarders to pursue this option in the interest of significant time/cost savings in the production cycle.

With 5T6 situated less than 10 miles from Foxconn's plant, this concept could shave considerable time off the supply chain. A narrowbody cargo freighter operating from LAX to 5T6 would provide an advantage to their operation. This potential air cargo route to serve Foxconn's inbound shipments from Asia is presented in **Exhibit 14**, which depicts an additional air cargo leg from LAX to 5T6.

Exhibit 14
Potential Foxconn Inbound Shipment Air Route



Source: Great Circle Mapper

The shortest distance between LAX to 5T6 is about 700 miles, which would take approximately 90 minutes for a commercial jet aircraft to fly this distance. The concept of flying Foxconn's inbound raw material shipments directly into 5T6 from LAX would eliminate no less than 10 hours off total transit time. This time savings would result in a more efficient order fulfillment process and ultimately translate to significant cost savings for Foxconn, their suppliers, and their customers.

Potential Baseline Air Cargo Tonnage

Since 2009, Foxconn production has grown significantly as the facility reaches towards production goals. Foxconn tracks individual inbound palletized shipments by the flights and trucks they arrive on. In 2015, Foxconn records show there were shipments of nearly 12,000 pallets on 1,462 flights, averaging about eight pallets per flight. Weight per pallet varies widely depending on the specific component and is not explicitly tracked by Foxconn, but average weight is estimated at about 1,187 pounds. Through July of 2016, Foxconn has seen a 40 percent increase in inbound shipments over 2015. Year-end projections place total annual inbound shipments at over 17,000 pallets, good for a 48 percent increase over 2015. Foxconn's current inbound shipments statistics are presented in **Table 6.**

Table 6
Foxconn Inbound Shipments Statistics and Potential Baseline Air Cargo

Measure	2015	2016 (Aug-Dec Estimate)
Annual Inbound Flights w/Foxconn Pallets	1,462	2,158
Average Pallets per Flight	8	8
Annual Pallets	11,696	17,264
Annual Inbound Tons (Avg. 1,187 pounds per pallet)	6,942	10,246
Average Daily Inbound Pounds	53,397	78,817
Potential Baseline Air Cargo		**78,817**

Source: Foxconn, CDM Smith

In 2017 and 2018, Foxconn expects production to remain flat due to waning global demand for personal computers. As a result, the current year (2016) estimate of annual inbound shipment volume of 10,250 tons is identified as the baseline tonnage for potential air cargo service at 5T6 associated with Foxconn. 2018 is identified as the base year for the start of this air cargo service, which should allow adequate time for potential airport improvements to be made in order to accommodate this service.

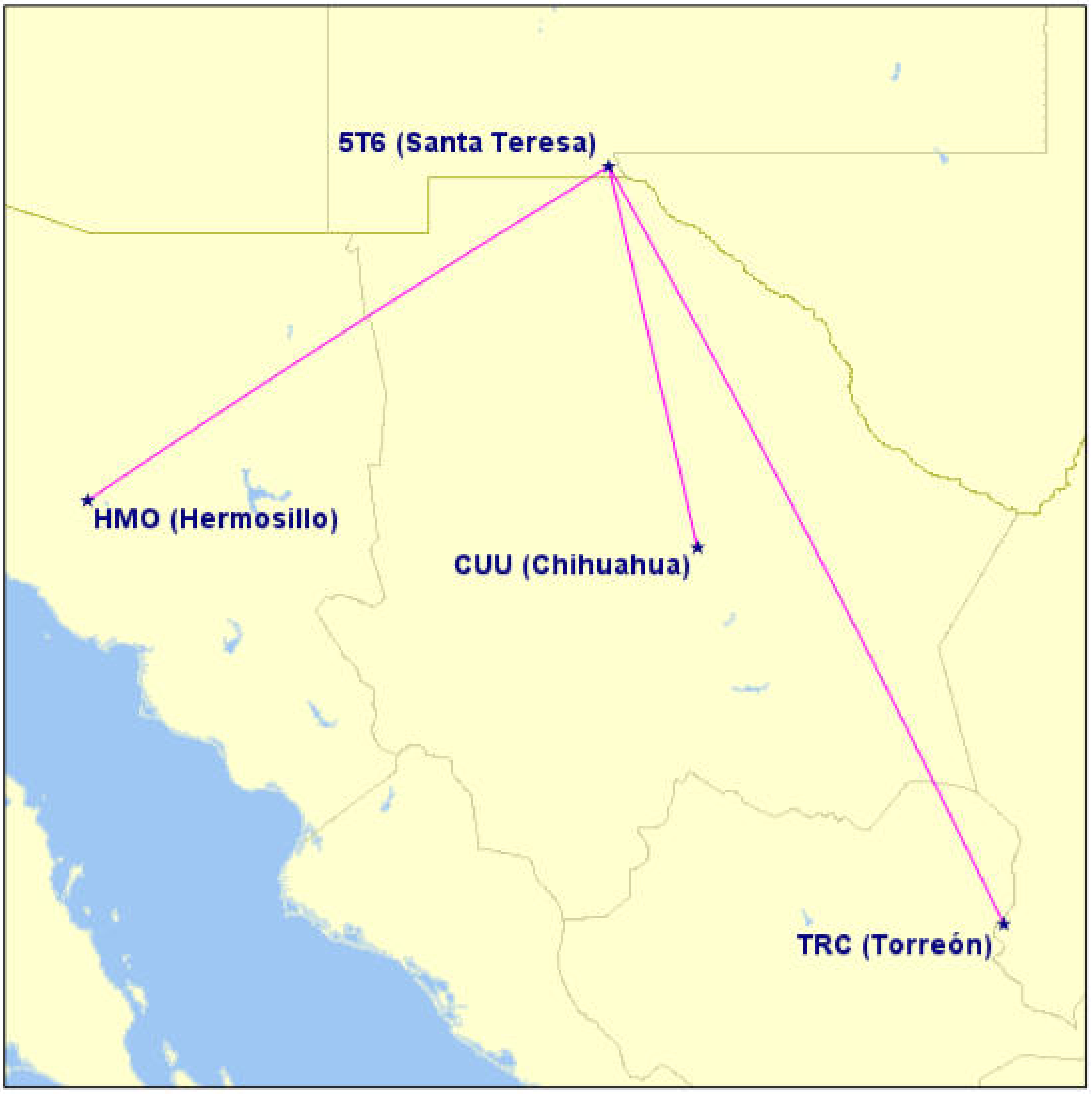
Foxconn has two other maquiladoras in Juárez that manufacture smartphones and television set-top boxes. According to Mr. Castillo, these business lines are slated to be consolidated into the San Jerónimo facility over the next several years, further growing Foxconn's presence right across the border from 5T6. This reorganization has the potential to add to the demand for inbound raw materials, creating a larger potential air cargo market for 5T6. However, to what degree this will impact production and inbound shipments is unknown.

JH Rose Logistics

JH Rose Logistics is a third party logistics (3PL) firm that provides transportation, warehousing, and distribution services with a 70,000-square foot warehouse and distribution center with a rail trans-loading facility at the nearby industrial park. With regards to air cargo, JH Rose Business Development Manager Louie Navar feels that there is strong demand for regional air cargo service at 5T6 and would utilize such service were it to commence in the future. JH Rose occasionally performs air cargo charters from Chihuahua to Memphis on an ad hoc basis and, in fact, JH Rose was involved in the former Nordstar air cargo service operated by Mr. Terry Nord in the mid-2000s. JH Rose had an air cargo market study done and learned there was demand, which was briefly demonstrated by the Nordstar service. This operation involved a Douglas DC-3 with loads up to 2,500 pounds of cargo in each direction. This freight was not only automotive but also aerospace parts, machinery components, and various other raw materials and finished products.

Mr. Navar believes that there is still strong demand for air cargo service at 5T6, primarily to serve the automotive parts supply chain between the U.S. and Mexico, but also to serve the maquiladora industry. Mr. Navar stated that in the past, Ford expressed interest in shipping parts out of 5T6 to its Hermosillo Stamping & Assembly plant, and pharmaceutical shipments have also been discussed. Between the numerous maquiladoras in Juárez who truck goods into the U.S. and the auto manufacturers in Chihuahua and Hermosillo, "without a doubt" there is a need and demand. Another potential air cargo market from 5T6 suggested by Mr. Navar was Torreón, Coahuila, which has significant textile, clothing, and metals processing industries. One single air cargo route would be anticipated initially. **Exhibit 15** illustrates the three potential routes discussed by Mr. Navar.

Exhibit 15
Potential JH Rose Air Cargo Routes



Source: Great Circle Mapper

Since operating out of ELP is expensive and time intensive getting in and out of the airport relative to what 5T6 could offer, an opportunity exists for carriers to operate more efficiently out of 5T6 to serve this market segment. However, establishing this service would require a significant effort on the part of 5T6 stakeholders to attract carriers by marketing the airport's ease of use in comparison with ELP. As a third party logistics firm, JH Rose would be an integral player in getting new air cargo service at 5T6 started and working with its contacts to support it by filling the aircraft.

Potential Baseline Air Cargo Tonnage

Mr. Navar is confident his firm could fill an aircraft today with commodities to and from Mexico, and estimates the potential demand at a level similar to what was seen during the Nordstar operation. This places the estimated potential peak demand[10] at approximately 2,000 pounds each way initially (five times per week), with future potential demand upwards of 5,000 pounds. This level of demand could be accommodated by a number of small turboprop aircraft within the B-II ARC. With growing demand the carrier can either up-gauge to a larger aircraft or add frequency as the need arose. **Table 7** summarizes the potential baseline air cargo demand for JH Rose Logistics.

Table 7
JH Rose Logistics Potential Baseline Air Cargo

Measure	Former Nordstar Operation	Baseline for Potential JH Rose Operation
Average Daily Pounds One-Way	2,000	2,000
Average Weekly Pounds One-Way (5 Weekly Rotations)	10,000	10,000
Annual One-Way Tons	260	260
Total Annual Tons (Inbound + Outbound)	520	520

Source: JH Rose Logistics, CDM Smith

One of the potential air cargo market segments under discussion for 5T6 is currently served, at least in part, by Contract Air Cargo with regularly scheduled flights between El Paso International (ELP) and General Roberto Fierro Villalobos International (CUU) in Chihuahua using Convair 580 twin-turboprop aircraft. Ameriflight formerly operated between ELP and Hermosillo International Airport (HMO), but now serves HMO from Phoenix Sky Harbor International Airport (PHX).

Possible carriers for this service include McNeely, Kalitta Charters, USA Jet, C&M, Ameriflight, Contract Air Cargo, Sierra West. Possible aircraft for this level of air cargo would include Beechcraft Baron, Beechcraft King Air, Cessna Caravan, Piper Chieftain, Fairchild Swearingen Metroliner, Shorts 360, Saab 340, SOCATA TBM 700, Embraer 120, or Beechcraft 1900. All of these aircraft can currently operate at 5T6 with its existing ARC of B-III. At one round trip operation per day, an aircraft serving this air cargo demand would result in 520 annual operations. In a scenario where this is the only air cargo service to come to fruition, B-III would remain the airport's ARC.

CommScope

CommScope is a multinational telecommunications equipment manufacturer that acquired TE Connectivity in January 2015. The CommScope facility (formerly TE Connectivity) in the nearby industrial park is a distribution and manufacturing center, focusing on fiber optic cables, sensors, connectors, and other equipment for telecommunications, enterprise, and wireless networks. CommScope customers include a wide range of industries, including consumer electronics, energy, healthcare, automotive, aerospace, and communications networks. With over 300 employees, CommScope is the largest employer of Santa Teresa's Industrial Parks.

According to Transportation Manager Carlos Torres, CommScope uses air cargo primarily for its outbound shipments of finished goods. All inbound raw material is trucked into the plant; however, a

[10] Peak daily one-way demand/utilization is the driver of capacity and is what spurs any changes in an air cargo carrier's operation. In this case, either inbound or outbound

significant portion of finished goods are shipped by air. The decision to ship by air depends on the particular customer needs and geographic location, therefore the volume is inconsistent and ultimate destination varies widely. Air cargo shipments of finished products are trucked to El Paso International and flown out on one of the three integrated express carriers (DHL, FedEx, UPS) to their hub facilities for sorting and final delivery.

CommScope manufactures relatively lightweight, bulky finished goods that are conducive to shipping by air. This, coupled with the fact that shipments can vary in distance both domestically and internationally, requires flexibility in its delivery system. Integrated Express carriers provide this flexibility since they provide door-to-door delivery under a single network that includes several modes – including air. CommScope customers are both international and domestic.

Given traffic issues, pickup from the Santa Teresa facility typically occurs between 4:30 PM and 5:00 PM each day in order to make the 6:30 PM delivery time at ELP. Meeting this deadline is rarely an issue, but Mr. Torres stated that given El Paso traffic during rush hour, a later cutoff would be beneficial. By eliminating the approximately 30-mile cross-town commute to ELP during rush-hour, the concept of air cargo service at 5T6 would afford CommScope an additional two hours of production flexibility by extending the shipment cutoff time to around 6:30 PM.

Air cargo service at 5T6 would be beneficial to CommScope but would only provide marginal benefit since the current setup is not a major obstacle to their business operation. Also, since outbound destination shipments vary so widely and are unpredictable, dedicated air cargo service would not be well suited since the carrier would want a consistent stream of freight in single directional flow. The integrators currently used by CommScope are unlikely to base an aircraft at 5T6 when the majority of their tonnage is centered on El Paso International.

Potential Baseline Air Cargo Tonnage

In 2015 CommScope' shipped a total of 14,430 tons of product from its Santa Teresa facility. Of this, 2,165 tons were shipped by air, which represents approximately 15 percent of total outbound shipments. Mr. Torres stated that CommScope's business is stable and future expectations revolve around a similar volume. Unless they have significant business decisions and further merger restructuring in the near future, volume expectations for 2016 and should be similar to what was seen in 2015. **Table 8** summarizes CommScope's outbound shipment statistics and potential baseline air cargo.

Table 8

CommScope Outbound Shipments Statistics and Potential Baseline Air Cargo

Measure	Outbound Air Cargo Shipments	Total Outbound Shipments
2015 Average Monthly Tons	180	1,203
2015 Total Annual Tons	2,165	14,430
2015 Average Weekly Pounds	83,269	555,000
2015 Average Daily Pounds (5 Weekly Flights)	16,654	111,000
Possible Westbound Daily Pounds (10% of total outbound)	1,665	n/a
Possible Westbound Pounds Per Flight (5 weekly ops)	8,327	n/a
Possible Annual Westbound Tons	217	n/a

Source: CommScope, CDM Smith

The 2,165 tons of product shipped by air in 2016 translates to an average daily demand of 16,654 pounds. This figure would normally be a good baseline demand for potential air cargo service at 5T6; however, the nature of CommeScope's air shipments indicate otherwise. CommScope employs integrators for their ability to accommodate widely varying shipment volumes and destinations through their extensive networks. This daily volume is likely too small to dedicate an entire aircraft to, and not all parcels within a daily outbound shipment are headed in the same direction. It is possible that a small percentage of westbound daily demand could fill the Foxconn aircraft returning to LAX, but this percentage is unknown and likely fluctuates significantly. CommScope's existing relationships with the integrators also makes this an unlikely concept. Their existing logistics setup is adequate for their needs and the potential benefit of air cargo service at 5T6 (later cutoff times) is negligible. Additionally, Santa Teresa's proximity to Los Angeles may not justify the cost to fly outbound shipments. Given that CommScope trucks goods to Houston and Dallas, it is likely that shipments are currently trucked to Los Angeles.

For these reasons, the small amount of CommScope's possible westbound demand identified is unlikely to occur and is not included in the baseline demand.

Summary of Potential Air Cargo Demand

Prior to forecasting potential air cargo tonnage and aircraft operations, a baseline tonnage must be established. This baseline can derived from the information provided by the three potential user firms regarding their inbound/outbound logistical needs. Since 5T6 does not currently have air cargo service, 2018 was selected as the baseline year for commencing air cargo activity and tonnage. This lag-start of air cargo service allows for 5T6 to construct upgraded facilities and market itself to potential users.

Foxconn, CommScope, and JH Rose Logistics all currently use air cargo to some degree and/or have expressed interest in using air cargo services at 5T6. Foxconn represents the strongest opportunity identified for air cargo services based on the volume of existing air cargo use, projected growth, and close proximity to 5T6. The value and volume of Foxconn's inbound shipments currently trucked from LAX are significant enough to warrant flying them in, which would positively benefit Foxconn, its suppliers, and its customers. JH Rose Logistics believes there is existing demand for a new regional air cargo service that carries goods between the U.S. and Mexico's maquiladoras. JH Rose would likely play a key role in establishing and supporting this service. While CommScope was also identified as a potential user firm for air cargo services at 5T6, the irregularity of its outbound shipment volumes and destinations limit the likelihood of successfully supporting air cargo service. Therefore CommScope's identified potential demand is not included in the assessment of baseline demand for 5T6.

As summary of the potential baseline air cargo demand identified for 5T6 is presented in **Table 9**.

Table 9
Summary of Potential Baseline Air Cargo Demand

Measure	Foxconn	JH Rose Logistics	CommScope
Peak Daily One-Way Demand (pounds)	78,817	2,000	-
Total Daily Demand (pounds)	78,817	4,000	-
Total Annual Tons	10,246	520	-

Source: Foxconn, JH Rose Logistics, CommScope, CDM Smith

Air Cargo Facilities Inventory

The purpose of this section is to outline the existing air cargo facilities and current aircraft capability at 5T6.

Airside Facilities

The current runway at 5T6, Runway 10-28, is an asphalt runway that measures 9,550 by 100 feet. The runway is capable of accommodating aircraft with an airport reference code (ARC) of up to B-III. Pavement strength for Runway 10-28 is 20,000 pounds single wheel loading (SWL). Taxiway A is a full-length parallel taxiway for Runway 10-28 and is 75 feet wide. There are six connecting taxiways between Runway 10-28 and Taxiway A. Taxiway C connects Taxiway A to the main apron, west heavy apron, and other apron areas adjacent to the FBO and hangar developments. **Exhibit 16** shows the airfield layout and environs of 5T6.

Exhibit 16
Airfield Layout and Components

Source: BHI

The west heavy apron is identified as 300 feet by 800 feet, giving it a total area of 240,000 square feet. The west heavy apron has been preserved for the purposes of aircraft parking and loading/offloading operations for any potential future air cargo operations. It is currently used by Customs and Border Protection to hold aircraft during processing as well as helicopters to minimize dust kick-up near the museum. A portion of the west heavy apron is highlighted in **Exhibit 17**, below. The highlighted portion shown in Exhibit 17 measures approximately 135,000 square feet. This provides a relative scale of the apron area that would correspond to a potential air cargo facility on the adjacent vacant land. This vacant land is currently unimproved.

Exhibit 17
West Heavy Apron

Source: Google Earth

The airport does not have any traditional ground-based instrument approach equipment, but an RNAV GPS approach with visibility minimums as low as one mile is published for Runway 10. The airfield is also equipped with a Super Automated Weather Observing System (AWOS), which is in the process of being upgraded to an AWOS III to provide certified weather.

Landside Facilities

A new Customs and Border Protection facility, which was opened in 2014, is located just east of the War Eagles Museum. This 2,000-square foot facility is used by U.S. Customs to process passengers and baggage on international flights arriving into 5T6, which had been discontinued by 2011. The facility includes baggage sensors, x-ray machines, an interrogation room, a holding cell, a waiting area, bathrooms, a search room, agricultural lab, and general office space.

Francis Aviation is the Fixed Based Operator (FBO) for the airport. The FBO has a fleet of ground service equipment (GSE) including electric tugs capable of towing aircraft weighing up to 100,000 pounds and ground power units (GPU). Other services include oxygen and nitrogen, potable water, lavatory services, and a forklift for cargo operations. Based on discussions with Mr. Scott Andre, President of Francis Aviation[11], the FBO would be interested in providing aircraft loading/offloading

[11] Scott Andre is the former president of Francis Aviation. He was president at the time of the interview.

services to a potential air cargo user in addition to standard aircraft line services. A courtesy crew car is available, and Enterprise car rental services can also be arranged.

Vehicle access to the airport is provided by Pete V. Domenici Memorial Highway, which is slated for improvements to address poor roadway conditions. Vehicle parking is available adjacent to most airport buildings; however, there is no dedicated parking on the vacant land adjacent to the west heavy apron.

Emergency services at the airport are provided by the County Sheriff and local firefighters as needed; however, none are stationed at the airport. No on-site firefighting is available, but it is planned in the future. Airport security fencing is present around most facilities that require security, and another restricted access gate is planned to further enhance airfield safety. Apron security lighting is in good condition and covers a large portion of the apron – attached to buildings or on poles.

Air Cargo Forecast

Projecting future aviation demand is a critical element in the overall master planning process. In order to determine whether facilities at 5T6 are adequate for future air cargo service, future air cargo demand must first be projected. Despite the fact that 5T6 does not currently accommodate scheduled air cargo activity, some potential demand has been identified as outlined in the air cargo market assessment section of this document. Based on this identified potential demand, air cargo tonnage and air cargo aircraft operations are forecasted. It must be recognized, however, that there are always short-term fluctuations in an airport's activity due to a variety of factors that cannot be anticipated. The forecasts developed for air cargo provide a meaningful framework to guide the analysis of future airport development needs and alternatives.

Forecast Scenarios

In addition to incorporating the estimated growth provided by each potential user firm, this forecast analysis considered numerous variables to associate with the future activity projections. The following growth factors were evaluated for this air cargo forecast (only a few were used):

- Historic Population Growth of the El Paso-Las Cruces CSA
- Future Population Growth Projection for the El Paso-Las Cruces CSA
- Historic Per Capita Income Growth for the El Paso-Las Cruces CSA
- Historic Annual Residential Building Permits for El Paso County
- Historic Air Cargo Tonnage Growth for El Paso International Airport
- *FAA Aerospace Forecast FY 2016-2036* – All Cargo Carrier: Domestic RTMs
- *FAA Aerospace Forecast FY 2016-2036* – All Cargo Carrier: International RTMs
- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Intra-North America
- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Asia-North America

Since this air cargo forecast is considering future air cargo use of 5T6 by two different potential users, it was determined that each potential user firm should have its own set of forecast scenarios. One preferred forecast for each of the two potential user firm will be selected from their respective set of scenarios, after which each preferred scenario will be summed to establish a single air cargo activity forecast.

Foxconn is importing raw materials from China for the assembly of personal computers destined for the U.S. domestic market; and JH Rose Logistics works to arrange transportation services that meet local and regional logistics needs. Each firm is generating potential air cargo demand that is tied to specific market trends in different geographies and demographic areas. Therefore, each potential user firm must incorporate forecast growth scenarios most strongly associated with their particular business activity/characteristics. After considering all relevant variables, it was determined that the two potential user firms would have the following sets of forecast scenarios:

JH Rose Logistics Forecast Scenarios

- *FAA Aerospace Forecast FY 2016-2036* – All Cargo Carrier: Domestic RTMs
- Future Population Growth Projection for the El Paso- Las Cruces CSA
- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Intra-North America

Foxconn Forecast Scenarios

- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Intra-North America
- *FAA Aerospace Forecast FY 2016-2036* – All Cargo Carrier: International RTMs
- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Asia-North America

Since 5T6 does not currently have air cargo activity, one challenge is establishing a baseline tonnage and year. Since this forecast revolves around two potential user firms, the baseline tonnage is estimated based on the information provided by each firm during the interview process. The year 2018 was selected as the baseline for commencing air cargo activity and tonnage. This lag-start of potential air cargo service allows for any requisite facility enhancements to be constructed prior to the start of service. From the estimated baseline tonnage, future growth is projected using company assessments (if provided) and the selected forecast growth rate scenarios. Once preferred forecasts are identified for each potential user firm, the projected air cargo tonnage and aircraft operations will be combined to determine facility requirements.

JH Rose Logistics Forecast Scenarios

As discussed in the air cargo market assessment section, JH Rose Logistics' potential air cargo demand at 5T6 primarily revolves around trans-border shipments between the U.S. and Mexico to serve the demand associated with the numerous maquiladoras and automotive plants in Mexico. This demand is tied primarily to trends in U.S. domestic consumption of goods produced in Mexico. The forecast scenarios chosen for JH Rose Logistics were:

- *FAA Aerospace Forecast FY 2016-2036* – All Cargo Carrier: Domestic RTMs
- Future Population Growth Projection for the El Paso- Las Cruces CSA
- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Intra-North America

As shown in **Table 10**, the three forecast scenarios resulted in air cargo tonnage forecasts ranging from 580 tons in the FAA Domestic RTMs scenario to 740 tons in the Boeing Intra-North America RTMs scenario for the out-year of the planning period, 2035. The average annual growth rates range from 0.57 percent to 2.1 percent.

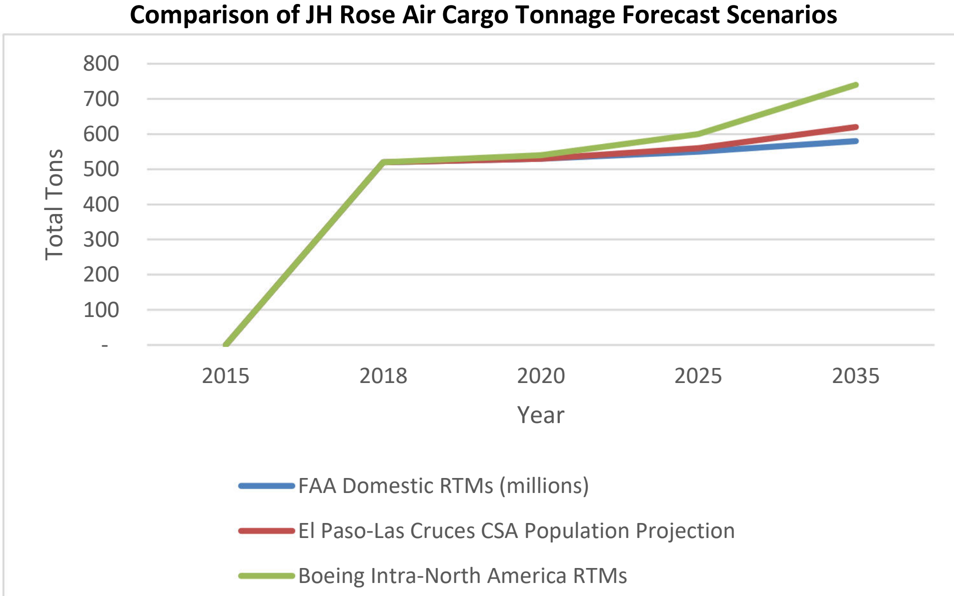
Table 10
JH Rose Air Cargo Tonnage Forecast Scenarios

Tonnage Forecast Scenarios	JH Rose Logistics					
	Low		Medium		High	
Year	FAA Domestic RTMs (millions)	Tons	El Paso-Las Cruces CSA Population Projection	Tons	Boeing Intra-North America RTMs*	Tons
2015	11,672	-	1,055,282	-		-
2018	12,296	520	1,085,598	520		520
2020	12,653	530	1,114,895	530		540
2025	12,917	550	1,173,157	560		600
2035	13,072	580	1,274,597	620		740
CAGR	**0.57%**	**0.57%**	**0.95%**	**0.95%**	**2.10%**	**2.10%**

*Boeing Intra-North America RTMs figures unavailable; only domestic U.S. RTMs readily available from BTS data
Source: FAA, US Census, New Mexico Economic Development Department, Texas Demographic Center, Boeing, CDM Smith

Exhibit 18 graphically depicts a comparison of air cargo tonnage forecast scenarios associated with JH Rose's potential air cargo demand.

Exhibit 18
Comparison of JH Rose Air Cargo Tonnage Forecast Scenarios



Source: FAA, US Census, New Mexico Economic Development Department, Texas Demographic Center, Boeing, CDM Smith

Preferred Air Cargo Forecast Scenario

The preferred air cargo tonnage projection for JH Rose's potential air cargo use of 5T6 is based on the FAA Domestic RTMs growth scenario. In this scenario, tonnage associated with JH Rose grows from 520 tons in 2018 to 580 tons in 2035, representing an increase of 0.57 percent annually. This scenario was chosen as it is reasonable, conservative, and is tied to the FAA's forecast for the relevant geography. This forecast scenario is also the most in line with growth estimates speculated by JH Rose regarding potential air cargo service at 5T6.

Aircraft Operations Forecast

Based on the preferred air cargo tonnage forecast for JH Rose, aircraft operations can be projected. In order to project aircraft operations, annual tons need to be broken down into a peak daily one-way pounds figure in order to determine the aircraft type and frequency of operation. In this case, the initial estimate of potential air cargo demand provided by JH Rose was originally presented in terms of daily demand, which was then used to calculate the baseline annual tonnage. The baseline figure of 2,000 peak daily one-way pounds is based on JH Rose's past experience with air cargo and estimated/likely potential demand and represents half of total daily demand. In reality, peak daily one-way demand will occur on either inbound or outbound flights. Since air cargo markets typically lean towards being consumer or producer markets, it is rare for a carrier to experience equal utilization in both directions. The potential air cargo demand identified by JH Rose for 5T6 would likely favor the inbound flow as the peak. For the purposes of this analysis, total daily demand is estimated at 4,000 pounds, or twice the peak daily one-way demand.

Aircraft size is dictated by peak one-way demand, which determines aircraft capacity utilization. For example, even if outbound utilization dropped to zero percent, a carrier would "up-gauge" aircraft size if inbound air cargo demand grew significantly enough to warrant it. It is estimated that in order to accommodate the potential peak daily one-way demand of 2,000-pounds, as identified by JH Rose, several aircraft with B-II ARCs would be sufficient. Potential B-II aircraft include Cessna Caravan (C208), Socata TBM 700, Beechcraft Baron (BE99), Pilatus PC-12, and Cessna 402. Each of these aircraft are capable of accommodating the current and forecasted peak daily one-way demand with a single daily round trip.

The preferred forecast scenario for JH Rose is presented in **Table 11**, broken out by annual tons, weekly tons, weekly pounds, peak daily one-way pounds, and annual aircraft operations.

Table 11
JH Rose Preferred Air Cargo Tonnage Forecast Detail
Annual Aircraft Operations – 5 Days of Operation

Detail	Year	Total Annual Tons (Inbound + Outbound)	CAGR	Total Weekly Tons	Total Weekly Pounds	Total Daily Pounds (5 Days of Operation)	Peak Daily One-Way Pounds	Annual Aircraft Operations (Takeoffs + Landings)
Base Year	2015	-		-	-	-	-	-
	2016	-		-	-	-	-	-
Forecast Years								
Lagged-start of air cargo service	2018	520	0.57%	10	20,000	4,000	2,000	520
	2019	520	0.57%	10	20,000	4,000	2,000	520
5-year	2020	530	0.57%	10	20,385	4,077	2,038	520
10-year	2025	550	0.57%	11	21,154	4,231	2,115	520
20-year	2035	580	0.57%	11	22,308	4,462	2,231	520

Source: FAA, CDM Smith

As shown, a B-II aircraft with a payload capacity of approximately 2,500 pounds can accommodate the projected annual tonnage with 520 annual takeoffs and landings (one round-trip per day). 5T6 facilities are currently designed to B-II standards.

Foxconn Forecast Scenarios

Foxconn's potential air cargo demand revolves around the inbound shipment of raw materials that are currently flown into LAX from China and trucked to its San Jerónimo assembly plant across the U.S.-Mexico border from 5T6. In discussions with Foxconn representatives, this inbound raw material was identified as potential demand for air cargo services at 5T6. Flying this inbound material from LAX to 5T6 would provide Foxconn with a more efficient supply chain. This demand is tied to consumer demand of consumer electronics; however, since the current and potential supply chain involves air cargo market segments addressed by both FAA and Boeing forecasts, the following forecast scenarios were used for Foxconn:

- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Intra-North America
- *FAA Aerospace Forecast FY 2016-2036* – All Cargo Carrier: International RTMs
- *Boeing World Air Cargo Forecast 2013-2033* – Total RTMs Asia-North America

Table 12 presents the three forecast scenarios for Foxconn. Starting with the baseline annual tonnage of 10,250 (assumed to start in 2018), by the out-year of the planning period (2035) the forecast scenarios range from 14,600 tons in the Boeing Intra-North America RTMs scenario to 25,080 tons in the Boeing Asia-North America RTMs scenario. The average annual growth rates ranged from 2.1 percent to 5.4 percent.

Table 12
Foxconn Air Cargo Tonnage Forecast Scenarios

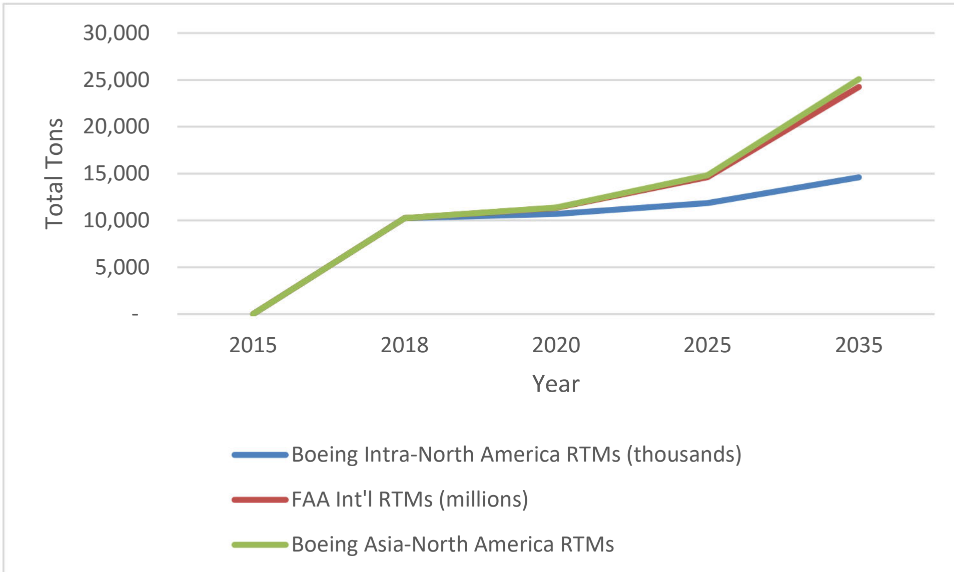
Tonnage Forecast Scenarios	Foxconn					
	Low		Medium		High	
Year	Boeing Intra-North America RTMs*	Tons	FAA Int'l RTMs (millions)	Tons	Boeing Asia-North America RTMs*	Tons
2015		-	16,403	-		-
2018		10,250	19,807	10,250		10,250
2020		10,690	22,234	11,340		11,390
2025		11,860	28,684	14,610		14,820
2035		14,600	45,206	24,250		25,080
CAGR	**2.10%**	**2.10%**	**5.20%**	**5.20%**	**5.40%**	**5.40%**

*Boeing Intra-North America RTMs figures unavailable; only domestic U.S. RTMs readily available from BTS data
Source: FAA, US Census, New Mexico Economic Development Department, Texas Demographic Center, Boeing, CDM Smith

Exhibit 19 graphically depicts a comparison of air cargo tonnage forecast scenarios associated with Foxconn's potential air cargo demand.

Exhibit 19

Comparison of Foxconn Air Cargo Tonnage Forecast Scenarios



Source: FAA, US Census, New Mexico Economic Development Department, Texas Demographic Center, Boeing, CDM Smith

Preferred Air Cargo Forecast Scenario

The preferred air cargo tonnage projection for Foxconn's potential air cargo use of 5T6 is based on Boeing's Intra-North America RTMs scenario. In this scenario, potential inbound Foxconn tonnage grows from 10,250 tons in 2018 to 14,600 tons in 2035, representing an average annual growth rate of 2.1 percent. This scenario was chosen since it represents the market segment that the potential air cargo service would serve. This forecast scenario is also the most in line with mid-term growth projections for Foxconn's future business.

Critical Design Aircraft

In order to determine aircraft operations, the air cargo demand must be reconciled against the capacity of a specific aircraft to determine number of daily operations required to meet the demand. Due to physical limitations in the environs of the airport, for all practical purposes Runway 10-28 is limited to its existing length of 9,550 feet. Since a runway extension is not practicable, the maximum ARC the existing runway could be upgraded to is C-III through runway widening and strengthening. A common air cargo aircraft in this design group is a Boeing 737-400 Freighter (B73F). Although not as common in the U.S. as the Boeing 757 Freighter, the B73F provides 92 percent of the cargo capacity at 63 percent of maximum takeoff weight (MTOW). The lower MTOW of the B73F means it can operate on runways of lesser strength. The capacity and MTOW difference between the B73F and B75F are presented in **Table 13**.

Table 13
Foxconn Air Cargo Tonnage Forecast Scenarios

Aircraft Type	ARC	Capacity in Pounds (80% bulk-out)	MTOW
Boeing 737-400 Freighter	C-III	41,608	150,000
Boeing 757-200 Freighter	C-IV	45,304	240,000

Source: Boeing

These facts make the B73F an ideal critical design aircraft for mid-size air cargo demand at smaller airports such as 5T6. Therefore, the daily demand associated with Foxconn's needs will be evaluated through the lens of B73F capacity. Additionally, Foxconn has stated that in their consideration for this potential air cargo scenario, they determined that the B73F would be useful for their needs. The B73F has a payload of about 41,608 pounds, which represents 80 percent of the aircraft's full payload to account for what is called "bulking out" since air cargo aircraft typically max-out, volume-wise, at 80 percent of their full weight payload. U.S. based operators of the B73F include Southern Air, Alaska Airlines, Kalitta Charters, and Northern Air Cargo. As passenger airlines retire older aircraft in favor of newer, more fuel-efficient fleets, the B73F is becoming an increasingly common freighter conversion.

Aircraft Operations Forecast

From the preferred air cargo tonnage forecast, aircraft operations can be projected. A peak daily one-way demand figure must first be calculated in order to determine the appropriate aircraft type capable of accommodating the demand. However, daily demand is dependent on the number of days the demand is spread across. Weekly demand distributed across seven days of operation will result in a lower daily demand than five days of operation. For this analysis, daily demand will be calculated by dividing weekly demand by five days of operation. **Table 14** breaks down Foxconn's preferred forecast of annual inbound tons into daily inbound pounds at five weekly operations.

Table 14
Foxconn Preferred Air Cargo Tonnage Forecast Detail
Peak Daily One-Way Demand – 5 Days of Operation

Detail	Year	Total Annual Inbound Tons	CAGR	Annual Inbound Tons Flown (100%)	Weekly Inbound Tons Flown	Weekly Inbound Pounds Flown	Daily Inbound Pounds (5 Weekly Ops)
Base Year	2015	6,942		-	-	-	-
Full-Year Estimate	2016	10,250	47.66%	-	-	-	-
Forecast Years							
Lagged-start of air cargo service	2018	10,250	0.00%	10,250	197	394,231	78,800
	2019	10,470	2.10%	10,470	201	402,692	80,500
5-year	2020	10,690	2.10%	10,690	206	411,154	82,200
10-year	2025	11,860	2.10%	11,860	228	456,154	91,200
20-year	2035	14,600	2.10%	14,600	281	561,538	112,300

Source: Boeing, CDM Smith

As shown in Table 14, weekly inbound pounds increase from over 394,000 in 2018 to nearly 562,000 in 2035. Spreading this demand out across five weekly operations results in a daily inbound demand of 78,800 pounds in 2018 and 112,300 pounds by 2035. To assess the number of total annual aircraft operations, daily demand must be compared against aircraft capacity. **Table 15** presents the percentage of daily demand met by a single B73F, and consequently how many daily rotations and annual operations required to meet 100 percent of Foxconn's inbound demand.

Table 15
Foxconn Preferred Air Cargo Tonnage Forecast Detail
Annual Aircraft Operations to Meet 100% of Demand – 5 Days of Operation

Year	Total Annual Inbound Tons	Daily Inbound Pounds (5 Days of Operation)	Boeing B73F Capacity (80%)	Percent of Daily Demand Met (5 Weekly Ops)	Daily B73F Rotations Needed to Meet Demand	Annual Rotations (Takeoffs + Landings) Needed to Meet Demand	Annual Tonnage Forecast	Annual Operations Forecast
2015	6,942	53,400	41,608	78%	2	1,040	-	-
2016	10,250	78,800	41,608	53%	2	1,040	-	-
2017	10,250	78,800	41,608	53%	2	1,040	-	-
2018	10,250	78,800	41,608	53%	2	1,040	10,250	1,040
2019	10,470	80,500	41,608	52%	2	1,040	10,470	1,040
2020	10,690	82,200	41,608	51%	2	1,040	10,690	1,040
2025	11,860	91,200	41,608	46%	3	1,560	11,860	1,560
2035	14,600	112,300	41,608	37%	3	1,560	14,600	1,560

Source: Boeing, CDM Smith

As shown in Table 15, the capacity of a B73F meets approximately 53 percent of Foxconn's daily demand. Based on the preferred forecast, meeting 100 percent of this demand would require two daily rotations from 2018 through 2020, then three daily rotations by 2025 and through 2035. These levels of aircraft rotations required to meet all of Foxconn's inbound demand translate to 1,040 annual aircraft operations from 2018 through 2020, and 1,560 operations from 2025 through 2035.

It is possible that Foxconn's suppliers and freight forwarders may elect to fly only one daily rotation and truck the remainder – presumably the less-time critical shipments. This would only occur if the supply chain and manufacturing process is flexible enough to identify and accommodate different rates of raw material shipments. In the event of this scenario, annual aircraft operations would remain at 520 throughout the planning period, but, as expected, the percent of daily inbound demand requiring trucking would increase from 47 percent in 2018 to 63 percent in 2035, as shown in **Table 16**.

Table 16
Foxconn Preferred Air Cargo Tonnage Forecast Detail
Percent of Demand Met by 5 Weekly Rotations (Remainder Trucked)

Year	Annual Tonnage Forecast	Annual Operations Forecast (Single Daily Rotation 5 Days per week)	Daily Inbound Demand Flown (pounds)	Remainder of Daily Inbound Demand Trucked (pounds)	Percent of Remainder of Daily Inbound Demand Trucked
2015	-	-	-	-	-
2016	-	-	-	-	-
2017	-	-	-	-	-
2018	10,250	520	41,608	37,200	47%
2019	10,470	520	41,608	38,900	48%
2020	10,690	520	41,608	40,600	49%
2025	11,860	520	41,608	49,600	54%
2035	14,600	520	41,608	70,700	63%

Source: CDM Smith

Despite this possibility, it is unlikely that Foxconn and its suppliers would find this scenario suitable for their needs. Therefore, it is recommended that 5T6 plan for Foxconn and its suppliers arranging air cargo service that will sufficiently meet 100 percent of daily demand. In either scenario, the B73F would be the critical design aircraft for the airport since it exceeds 500 annual operations.

Summary of Preferred Forecast Scenarios

Several other scenarios predicting future air cargo tonnage figures could have been presented in this exercise. However, the range of the growth rates presented represent the most realistic growth patterns considering each company's respective business market and focus.

When combining the preferred forecast scenarios for JH Rose and Foxconn, the potential total annual tonnage for 5T6 starts at 10,770 tons in 2018 and increases by an average annual rate of 2.04 percent to 15,180 tons by the out-year, 2035. Based on peak daily one-way demand, this annual tonnage translates to 1,560 annual aircraft operations in 2018, increasing to 2,080 operations by 2035. This assumes each operator for JH Rose and Foxconn operate five weekly rotations. Since the potential air cargo demand associated with Foxconn is assumed to require greater than 500 annual operations by a Boeing 737-400 Freighter (C-III ARC), this is identified as the critical design aircraft. **Table 17** summarizes the preferred forecast scenarios by potential user firm along with projections of their annual tonnage and aircraft operations.

Table 17
Summary of Preferred Forecast Scenarios

Preferred Forecasts	JH Rose (FAA Domestic RTMs)		Foxconn (Boeing Intra-North America RTMs)		Combined		
Year	Annual Tons	Annual Operations	Annual Tons	Annual Operations	Annual Tons	Annual Operations	Annual Operations by Design Aircraft
2015	-	-	-	-	-	-	-
2018	520	520	10,250	1,040	10,770	1,560	1,040
2020	530	520	10,690	1,040	11,220	1,560	1,040
2025	550	520	11,860	1,560	12,410	2,080	1,560
2035	580	520	14,600	1,560	15,180	2,080	1,560
CAGR	**0.57%**	**0.00%**	**2.10%**	**2.41%**	**2.04%**	**1.71%**	**2.41%**

Source: FAA, Boeing, CDM Smith

Air Cargo Facility Requirements

The purpose of this section is to identify improvements needed at the Doña Ana County International Jetport.

Air Cargo Facility Planning and Development Model Estimates

To determine whether existing airport facilities are sufficient to accommodate current and forecast air cargo tonnage, space requirements have been developed based on industry throughput ratios collected by the consultant. The ratios are a calculation of average tons per square feet based on data from surveys of numerous existing air cargo facilities at airports across the U.S. Specific building, apron, equipment storage, truck parking, and truck dock/door ratios have been developed for each cargo carrier type and are the output of the cargo facilities model. These include:

- Integrated express: air cargo carriers that provide door-to-door package deliveries
- Passenger airline belly cargo
- All-cargo carrier: air cargo carriers that ship only cargo
- Combi-carriers: cargo carriers that use aircraft configured to carry both passengers and cargo on the main deck

When applying these ratios to the current and forecast cargo demand, facility requirements can be determined for 5T6.

Methodology

The model used in this analysis is designed to estimate space utilization for air cargo facilities on airports. The model is flexible in that it can estimate spatial utilization for aggregated cargo areas on an airport as well as specific buildings and aprons on an airport. It is designed with two types of airports in mind: airports serving primarily domestic air cargo demand and airports serving international air cargo demand. Since the tonnage throughput associated with the identified potential air cargo demand is expected to be carried by contract all-cargo carriers, 5T6 is modeled as an all-cargo carrier facility handling primarily domestic air cargo. The throughput ratios used in the model are based on industry averages from airports across the country collected as part of *ACRP Report 143: Guidelines for Air Cargo Facility Planning and Development*. The throughput ratio ratios used in the model are shown in **Table 18**.

Table 18
Tons to Square Feet Throughput Ratios

Area	All-Cargo Carrier (Domestic)
Aircraft Parking Apron	0.40 or by aircraft type (ARC)*
Warehouse/Cargo Building	0.81
GSE Storage	1.11
Truck Parking	1.80

*Apron area estimated based on a) tonnage or b) aircraft type, whichever is greater
Source: CDM Smith

When applying these ratios the forecast of tonnage throughput and aircraft types, the air cargo facility requirements can be estimated. The space requirements for apron area, cargo building area, truck/auto parking area, and truck docks/doors necessary to meet the potential air cargo throughput at 5T6 are presented by forecast year in **Table 19**.

Table 19
Air Cargo Facilities Size Calculator

Facility Component	Year	2018	5-Year	10-year	20-year
	Tonnage	10,770	11,220	12,410	15,180
	Existing Space Used for Cargo	Required Space to Meet Demand	Forecasted Required Space	Forecasted Required Space	Forecasted Required Space
Warehouse/Cargo Building Space (sf)	-	13,247	13,801	15,264	18,671
Total Apron (sf)*	240,000	55,893	56,298	57,369	59,862
Truck and Auto Parking (sf)	-	23,845	24,841	27,476	33,609
Total Space in Square Feet (sf)	-	92,985	94,940	100,109	112,142
Total Space in Acres	-	2.1	2.2	2.3	2.6
Total Truck Docks/Doors	-	9	9	10	12

*Includes GSE storage
Source: CDM Smith

Warehouse/Cargo Building

When utilizing the all-cargo carrier facility throughput ratio it is estimated that 5T6's baseline of 10,770 total tons estimated for 2018 would require a cargo building 13,247 square feet in area. With the preferred forecast for the airport's cargo tonnage projected to increase to 15,180 total tons by 2035, a building with an area of 18,671 square feet would be adequate to accommodate this level of throughput.

Foxconn has stated that although a warehouse would be beneficial to potential air cargo service, the lack of an on-airport warehouse facility would not preclude air cargo service from commencing operations. In the event of an aircraft arriving outside of the Santa Teresa Port of Entry's normal operating hours, a warehouse would be useful for holding shipments. Since Foxconn currently has leased warehouse space near Interstate 10 specifically for this purpose, a warehouse should not be considered an immediate need. It should, however, be planned for in the event of air cargo service growth – by the identified potential service or otherwise. Also, due to the typically dry weather conditions of the region, it is likely the majority of ground handling for both Foxconn's and JH Rose's potential operations would occur outdoors on the apron. JH Rose previously used a Nordstar hangar when needed.

With Francis Aviation's expressed interest in providing ground handling services to a potential air cargo operator, depending on the specific operator, the airport's FBO may adequately serve this need.

Apron Area

The two air cargo aircraft anticipated to operate at 5T6 have airport reference codes (ARC) of B-II and C-III. For planning purposes it should be assumed that both cargo aircraft will be present at 5T6 simultaneously during peak hour. According to ACRP Report 143, B-II aircraft should have a dedicated apron area of 10,100 square feet for cargo aircraft parking, while C-III aircraft should have 36,100 square feet of apron area. This indicates that a total of 46,200 square feet of apron space is required to sufficiently accommodate the B-II and C-III aircraft expected to operate at 5T6 simultaneously. This space requirement remains constant throughout the planning period assuming aircraft ARC remains constant. Although Foxconn's estimated air cargo demand exceeds the available capacity on the aircraft anticipated for use, the operator would likely make multiple daily rotations with the same aircraft if required to fully meet demand.

Based on anticipated aircraft type/ARC, it is estimated that the west heavy apron is currently sufficient to accommodate demand throughout the planning period. In 2018, the 10,770 total annual tons would require approximately 55,893 square feet of apron area and by 2035 the projected 15,180 annual tons would require 59,862 square feet. These figures include space required for aircraft apron parking and paved ground service equipment (GSE) storage, which constitutes approximately one-quarter of total estimated required apron area. The existing west heavy apron of approximately 240,000 square feet (300' X 800') is sufficient to accommodate forecasted air cargo volumes and aircraft types. Should carriers operate more than one of each aircraft type, the apron should still be sufficient.

Truck/Automobile Parking

At 2018 levels of total annual tonnage throughput, it is estimated that 23,845 square feet of truck/automobile parking is required. This figure factors in employee automobile parking requirements in addition to truck parking requirements. As tonnage increases in the future, so too will truck/auto parking area required. By 2035, 33,609 square feet of truck parking area will be necessary to sufficiently accommodate the 15,180 tons of total cargo throughput.

Truck Docks/Doors

Assuming the airport will have security fencing and airside access control, any air cargo warehouse should have truck docks/doors to allow for the movement of freight between airside and landside. The estimated number of truck docks/doors required to meet the baseline tonnage throughput for 2018 is nine, and then 12 by 2035.

Runways, Taxiways, Fencing, and Navaids

Based on the demand identified as part of Foxconn's potential air cargo scenario, the critical design aircraft is identified as a Boeing 737-400 Freighter (B73F), which has an ARC of C-III. As such, Runway 10-28 should be widened to 150 feet and strengthened to withstand 1,560 annual takeoffs and landings by the B73F. Based on Boeing aircraft performance charts, the B73F has an estimated takeoff weight of 135,000 pounds and an estimated gross landing weight of 130,000 pounds.

Taxiway A, Taxiway B, and all relevant taxiway connectors should be upgraded as needed to meet the critical aircraft design requirements. Perimeter fencing with airside security/access control is recommended to provide additional safety for the air cargo carriers that may potentially operate at 5T6. With regard to Navaids, given the airport's good year-round weather and visibility, an approach with vertical guidance (APV) should be sufficient for operations by the critical aircraft. Most GPS approaches are capable of providing vertical guidance; however, the airport's GPS is not currently published as having vertical guidance. It is recommended that the airport pursue vertical guidance for its GPS approach. A precision approach is not a requirement for air cargo operations and would likely not have a positive benefit-cost ratio; therefore, it is not recommended.

The officers employed at the airport's new Customs and Border Protection (CBP) facility are capable of inspecting any air cargo that may arrive into 5T6 from Mexico under the JH Rose scenario. However, since air cargo was not a consideration when the facility was originally designed and constructed, expansion of the existing facility or construction of a dedicated air cargo inspection facility could be needed to adequately serve this demand should it arise. According to CBP officers, depending on the type of aircraft used in this scenario it is possible for inspections to occur on the aircraft without offloading cargo. In the Foxconn scenario inbound shipments from China will continue to arrive into LAX, where they will be processed by Customs upon arrival. Therefore the current capacity and hours of operation for the CBP facility are expected to be adequate for through the planning period.

Summary/Conclusion

Doña Ana County International Jetport has potential to serve a niche role as a secondary air cargo airport for a growing multinational border community market area of 2.5 million people. Due to its location near a heavily used border crossing for freight shipments between the U.S. and Mexico at the western edge of the El Paso metropolitan area, the airport is well positioned to serve the air cargo logistics needs of several area businesses. Within the airport's immediate vicinity, two potential air cargo users have been identified: JH Rose Logistics and Foxconn. JH Rose could facilitate air cargo services to support the demand for goods carried between the U.S. and the many maquiladoras in Mexico, while Foxconn has expressed a desire to enhance the efficiency of their supply chain by flying computer components originating from China into 5T6 from LAX instead of trucking them. Combined, both of these potential user firms could generate significant air cargo throughput at the airport.

Given the appropriate facility enhancements, primarily centered on a widening and strengthening of Runway 10-28, the critical aircraft is identified as a Boeing 737-400 Freighter to serve the inbound shipment needs of Foxconn. The airport currently has adequate space to accommodate all projected facility requirements that this aircraft calls for. In the event that the enhanced airport facilities identified in this analysis are deemed worthy of pursuing, 5T6 stakeholders must work to market the airport to potential users before, during, and after completion of improvement projects. Although Foxconn has expressed their support for this air cargo concept at 5T6, it is important for airport stakeholders to maintain a relationship with Foxconn to keep abreast of their needs. Establishing this and the JH Rose air cargo service would require a significant effort on the part of 5T6 stakeholders to attract carriers by marketing the airport's competitive advantages.

It is worth noting that since this analysis only considered potential users in the immediate vicinity of the airport, it is possible for more potential demand to exist unidentified by this analysis. If the airport becomes capable of supporting larger air cargo aircraft and support services, it is possible for 5T6 to gain not only new service, but possibly existing service that is relocated from another airport.

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APPENDIX C

Grant Funding History

Capital Improvement Program Report

New Mexico Department of Transportation - Aviation Division
SANTA TERESA - DONA ANA COUNTY
Report Filter - Types: All, Statuses: All

All Projects

Year	Project Name	Status	FAA	State	Local	Total
2000						
	Prepare environmental assessment for airport expansion	Closed	0.00	180,000.00	20,000.00	$200,000.00
		SubTotal:	$0.00	$180,000.00	$20,000.00	$200,000.00
2001						
	Upgrade runway, taxiway and apron areas	Closed	2,203,662.00	122,425.00	122,426.00	$2,448,513.00
		SubTotal:	$2,203,662.00	$122,425.00	$122,426.00	$2,448,513.00
2002						
	Upgrade airport operating surfaces	Closed	1,908,630.00	106,035.00	106,035.00	$2,120,700.00
		SubTotal:	$1,908,630.00	$106,035.00	$106,035.00	$2,120,700.00
2003						
	Upgrade taxiway system including lighting	Closed	1,150,000.00	72,220.00	63,889.00	$1,286,109.00
		SubTotal:	$1,150,000.00	$72,220.00	$63,889.00	$1,286,109.00
2005						
	Runway and taxiway improvements, install AWOS hardware	Closed	1,150,000.00	30,263.00	30,263.00	$1,210,526.00
		SubTotal:	$1,150,000.00	$30,263.00	$30,263.00	$1,210,526.00
2010						
	DNA-10-001 - Phase 3-Extend Runway 10-28 to East	Closed	2,645,383.00	115,500.00	115,500.00	$2,876,383.00
		SubTotal:	$2,645,383.00	$115,500.00	$115,500.00	$2,876,383.00
2011						
	DNA-11-01 - Customs Building Remodel, Beacon Upgrade	Closed	0.00	247,000.00	13,000.00	$260,000.00
		SubTotal:	$0.00	$247,000.00	$13,000.00	$260,000.00
2012						
	DNA-12-01 - Improve Runway 10-28 Safety Area	Closed	270,000.00	15,000.00	15,000.00	$300,000.00

Year	Project Name	Status	FAA	State	Local	Total
		SubTotal:	$270,000.00	$15,000.00	$15,000.00	$300,000.00
2013						
	5T6-13-01 CBP Building-Construction-State only	Funded - State AVI	0.00	600,000.00	150,000.00	$750,000.00
	5T6-13-02 Runway 10-28 - Pavement Maintenance and RSA grading	Closed	914,700.00	50,816.00	50,817.00	$1,016,333.00
		SubTotal:	$914,700.00	$650,816.00	$200,817.00	$1,766,333.00
2014						
	5T6-14-01 Maintenance and Expendable Materials	Funded - State AVI	0.00	3,789.00	421.00	$4,210.00
		SubTotal:	$0.00	$3,789.00	$421.00	$4,210.00
2015						
	2015 Maintenance and Expendable Materials	CIP	0.00	10,000.00	1,111.00	$11,111.00
	5T6-15-01 TAXIWAY A & C CRASCKSEAL CONNECTORS	Funded - State AVI	0.00	138,101.00	15,345.00	$153,446.00
	5T6-15-02 MULTI-MODAL MASTER PLAN	Funded - State AVI	0.00	207,045.00	23,005.00	$230,050.00
	Apron and taxiways pavement maintenance	CIP	450,000.00	25,000.00	25,000.00	$500,000.00
	Reconstruct Runway 10-28, phase 1 - Environmental	CIP	225,000.00	12,500.00	12,500.00	$250,000.00
	West Taxiways, Phase 1 - Design/Environmental-State Only	CIP	0.00	30,000.00	30,000.00	$60,000.00
	Wildlife Hazard Site Visit	CIP	9,000.00	500.00	500.00	$10,000.00
		SubTotal:	$684,000.00	$423,146.00	$107,461.00	$1,214,607.00
All Projects			$10,926,375.00	$1,966,194.00	$794,812.00	$13,687,381.00

Grant History

Region : SW ADO : LANM State : NM Grant Step : REL

Worksite	Santa Teresa, NM	Locid	5T6	Worksite Name	Dona Ana County at Santa	Current Service Level	Current Hub Type -

Grant Number	FY	Project Code	Descr	Entitlement	Discretionary	Total
001-1982	1982	CA AP CO	Construct Apron	0.00	211,434.00	211,434.00
		CA TW CO	Construct Taxiway	0.00	58,432.00	58,432.00
		ST OT IM	Improve Airport Drainage	0.00	66,463.00	66,463.00
		CA RW CO	Construct Runway	0.00	720,481.00	720,481.00
		CA GT AC	Improve Access Road	0.00	90,000.00	90,000.00
	Grant Total			0.00	1,146,810.00	1,146,810.00
002-1983	1983	ST OT IM	Improve Airport Drainage	0.00	237,443.00	237,443.00
003-1983	1983	ST RW LI	Install Runway Lighting	0.00	95,875.00	95,875.00
004-1984	1984	CA AP EX	Expand Apron	0.00	109,920.00	109,920.00
		CA TW CO	Construct Taxiway	0.00	399,139.00	399,139.00
	Grant Total			0.00	509,059.00	509,059.00
005-1985	1985	ST OT IM	Improve Airport Drainage	0.00	1,800.00	1,800.00
		ST TW CO	Construct Taxiway	0.00	305,598.00	305,598.00
	Grant Total			0.00	307,398.00	307,398.00
006-1986	1986	CA AP EX	Expand Apron	0.00	304,260.00	304,260.00
		CA TW CO	Construct Taxiway	0.00	28,542.00	28,542.00
		ST AP LI	Install Apron Lighting	0.00	36,531.00	36,531.00
	Grant Total			0.00	369,333.00	369,333.00
007-1988	1988	ST OT IM	Improve Airport Drainage	0.00	20,000.00	20,000.00
		ST TW IM	Extend Taxiway	0.00	70,000.00	70,000.00
		ST RW IM	Extend Runway	0.00	857,535.00	857,535.00
	Grant Total			0.00	947,535.00	947,535.00
008-1990	1990	PL PL MA	Conduct Airport Master Plan Study	0.00	81,900.00	81,900.00
009-1992	1992	ST AP CO	Construct Apron	0.00	609,000.00	609,000.00
		ST TW CO	Construct Taxiway	0.00	291,641.00	291,641.00
	Grant Total			0.00	900,641.00	900,641.00
010-1999	1999	SP RW VI	Install Runway Vertical/Visual Guidance System	80,928.00	0.00	80,928.00
011-2001	2001	ST TW IM	Extend Taxiway	150,000.00	2,036,863.00	2,186,863.00
012-2002	2002	ST TW IM	Strengthen Taxiway	150,000.00	1,295,646.00	1,445,646.00
013-2003	2003	ST TW CO	Construct Taxiway	0.00	706,083.00	706,083.00
		ST TW LI	Install Taxiway Lighting	150,000.00	0.00	150,000.00
	Grant Total			150,000.00	706,083.00	856,083.00
014-2004	2004	EN PL MA	Conduct Environmental Study	79,000.00	39,760.00	118,760.00
		PL PL MS	Conduct Miscellaneous Study	71,000.00	0.00	71,000.00
	Grant Total			150,000.00	39,760.00	189,760.00
015-2005	2005	CA RW EX	Extend Runway	0.00	1,000,000.00	1,000,000.00
		ST EQ WX	Install Weather Reporting Equipment	150,000.00	0.00	150,000.00
	Grant Total			150,000.00	1,000,000.00	1,150,000.00
Worksite Total				830,928.00	9,674,346.00	10,505,274.00

Grant History

Region : SW ADO : LANM State : NM Grant Step : REL

Worksite	Santa Teresa, NM	Locid	5T6	Worksite Name	Dona Ana County at Santa	Current Service Level	Current Hub Type	-

Grant Number	FY	Project Code	Descr	Entitlement	Discretionary	Total
011-2001	2001	ST TW IM	Extend Taxiway	$150,000.00	$2,036,863.00	$2,186,863.00
012-2002	2002	ST TW IM	Strengthen Taxiway	$150,000.00	$1,295,646.00	$1,445,646.00
013-2003	2003	ST TW CO	Construct Taxiway	$0.00	$706,083.00	$706,083.00
		ST TW LI	Install Taxiway Lighting	$150,000.00	$0.00	$150,000.00
014-2004	2004	EN PL MA	Conduct Environmental Study	$79,000.00	$39,760.00	$118,760.00
		PL PL MS	Conduct Miscellaneous Study	$71,000.00	$0.00	$71,000.00
015-2005	2005	CA RW EX	Extend Runway	$0.00	$1,000,000.00	$1,000,000.00
		ST EQ WX	Install Weather Reporting Equipment	$150,000.00	$0.00	$150,000.00
Worksite Total				$750,000.00	$5,078,352.00	$5,828,352.00

FY 2016 Grants Awarded

Region	ADO	State	LOCID	Airport	Service Level	Grant Seq Number	AIP Federal Funds	Entitlement	Discretionary	Brief Description of Work
SW	LANM	NM	5V5	Shiprock Airstrip	GA	3	$ 360,058.00	$ 360,058.00	$ -	Rehabilitate Runway - 02/20
SW	LANM	NM	SVC	Grant County	GA	17	$ 2,490,128.00	$ 340,128.00	$ 2,150,000.00	Rehabilitate Runway - 08/26
SW	LANM	NM	SAF	Santa Fe Municipal	P	45	$ 262,955.00	$ 262,955.00	$ -	Rehabilitate Runway - 02/20
SW	LANM	NM	GNT	Grants-Milan Municipal	GA	15	$ 261,196.00	$ 261,196.00	$ -	Rehabilitate Runway - 13/31
SW	LANM	NM	TCS	Truth Or Consequences Municipal	GA	16	$ 627,514.00	$ 627,514.00	$ -	Construct Fuel Farm
SW	LANM	NM	SRR	Sierra Blanca Regional	GA	25	$ 91,590.00	$ 91,590.00	$ -	Rehabilitate Runway - 06/24
SW	LANM	NM	E26	Lea County/Jal/	GA	8	$ 79,061.00	$ 79,061.00	$ -	Install Perimeter Fencing
SW	LANM	NM	DMN	Deming Municipal	GA	17	$ 509,899.00	$ 509,899.00	$ -	Rehabilitate Runway - 08/26
SW	LANM	NM	GUP	Gallup Municipal	GA	25	$ 3,474,689.00	$ 3,474,689.00	$ -	Rehabilitate Runway - 06/24
SW	LANM	NM	TCC	Tucumcari Municipal	GA	17	$ 442,394.00	$ 442,394.00	$ -	Rehabilitate Parking Lot
SW	LANM	NM	N19	Aztec Municipal	GA	4	$ 600,000.00	$ 600,000.00	$ -	Rehabilitate Apron
SW	LANM	NM	TCC	Tucumcari Municipal	GA	18	$ 77,729.00	$ 77,729.00	$ -	Acquire Emergency Generator
SW	LANM	NM	E14	Ohkay Owingeh	GA	13	$ 297,653.00	$ 297,653.00	$ -	Construct Snow Removal Equipment Building
SW	LANM	NM	HOB	Lea County Regional	P	25	$ 5,675,205.00	$ 2,319,629.00	$ 3,355,576.00	Rehabilitate Runway - 12/30
SW	LANM	NM	SAF	Santa Fe Municipal	P	43	$ 937,500.00	$ 937,500.00	$ -	Acquire Friction Measuring Equipment, Acquire Snow Removal Equipment
SW	LANM	NM	LSB	Lordsburg Municipal	GA	16	$ 59,327.00	$ 59,327.00	$ -	Construct Taxiway
SW	LANM	NM	LAM	Los Alamos	CS	13	$ 534,316.00	$ 534,316.00	$ -	Rehabilitate Runway - 09/27
SW	LANM	NM	F37	Carrizozo Municipal	GA	7	$ 201,654.00	$ 201,654.00	$ -	Rehabilitate Runway - 06/24
SW	LANM	NM	ABQ	Albuquerque International Sunport	P	49	$ 299,363.00	$ 299,363.00	$ -	Rehabilitate Runway - 12/30
SW	LANM	NM	ONM	Socorro Municipal	GA	15	$ 135,347.00	$ 135,347.00	$ -	Install Runway Vertical/Visual Guidance System - 15/33
SW	LANM	NM	HOB	Lea County Regional	P	24	$ 818,066.00	$ 818,066.00	$ -	Install Perimeter Fencing
SW	LANM	NM	ONM	Socorro Municipal	GA	16	$ 277,911.00	$ 277,911.00	$ -	Rehabilitate Runway - 06/24, Rehabilitate Taxiway
SW	LANM	NM	ROW	Roswell International Air Center	P	30	$ 2,140,000.00	$ 790,000.00	$ 1,350,000.00	Rehabilitate Runway - 03/21
SW	LANM	NM	E89	Conchas Lake	GA	6	$ 339,348.00	$ 339,348.00	$ -	Rehabilitate Runway - 09/27
SW	LANM	NM	ATS	Artesia Municipal	GA	15	$ 3,787,986.00	$ 1,967,272.00	$ 1,820,714.00	Rehabilitate Runway - 12/30
SW	LANM	NM	SAF	Santa Fe Municipal	P	46	$ 180,541.00	$ 180,541.00	$ -	Conduct Miscellaneous Study
SW	LANM	NM	ABQ	Albuquerque International Sunport	P	50	$ 87,016.00	$ 87,016.00	$ -	Rehabilitate Runway - 08/26
SW	LANM	NM	FSU	Fort Sumner Municipal	GA	11	$ 281,528.00	$ 281,528.00	$ -	Rehabilitate Runway - 03/21, Rehabilitate Runway - 08/26, Rehabilitate Taxiway
SW	LANM	NM	SXU	Santa Rosa Route 66	GA	15	$ 113,016.00	$ 113,016.00	$ -	Install Perimeter Fencing
SW	LANM	NM	CAO	Clayton Municipal Airpark	GA	17	$ 402,413.00	$ 402,413.00	$ -	Rehabilitate Runway - 02/20
SW	LANM	NM	CNM	Cavern City Air Terminal	GA	25	$ 228,915.00	$ 228,915.00	$ -	Rehabilitate Runway - 08/26
SW	LANM	NM	T16	Reserve	GA	6	$ 408,686.00	$ 408,686.00	$ -	Rehabilitate Runway - 06/24
SW	LANM	NM	FMN	Four Corners Regional	CS	40	$ 236,643.00	$ 236,643.00	$ -	Improve Airport Erosion Control
SW	LANM	NM	5V5	Shiprock Airstrip	GA	4	$ 158,174.00	$ 158,174.00	$ -	Conduct Aeronautical Survey for RNAV Approach
SW	LANM	NM	E06	Lea County-Zip Franklin Memorial	GA	8	$ 143,481.00	$ 143,481.00	$ -	Install Perimeter Fencing
SW	LANM	NM	SAF	Santa Fe Municipal	P	44	$ 171,478.00	$ 171,478.00	$ -	Rehabilitate Taxiway
							$ 27,192,780	$ 18,516,490	$ 8,676,290	

Service Level Description:
P - Primary CS - Commercial Service R - Reliever GA - General Aviation

APPENDIX D

Wind Analyses

Appendix D

Afton Weather Station: 18Jun2014 - 18Jun2016 wind data (24 months/2 complete years)

Possible Runway 1-19 Alignment with Existing Runway 10-28 - Wind Coverage

	10.5 knots	13 knots	16 knots	20 knots
Runway 10-28	83.73%	89.44%	94.58%	98.23%
Runway 1-19	85.85%	92.09%	97.15%	99.39%
COMBINED	92.52%	96.61%	99.00%	99.92%

Possible Runway 2-20 Alignment with Existing Runway 10-28 - Wind Coverage

	10.5 knots	13 knots	16 knots	20 knots
Runway 10-28	83.73%	89.44%	94.58%	98.23%
Runway 2-20	89.49%	94.94%	98.54%	99.72%
COMBINED	94.90%	98.27%	99.62%	99.97%

Possible Runway 3-21 Alignment with Existing Runway 10-28 - Wind Coverage

	10.5 knots	13 knots	16 knots	20 knots
Runway 10-28	83.73%	89.44%	94.58%	98.23%
Runway 3-21	92.85%	96.66%	99.09%	99.83%
COMBINED	97.07%	99.17%	99.85%	99.99%

Possible Runway 4-22 Alignment with Existing Runway 10-28 - Wind Coverage

	10.5 knots	13 knots	16 knots	20 knots
Runway 10-28	83.73%	89.44%	94.58%	98.23%
Runway 4-22	94.39%	97.11%	99.16%	99.82%
COMBINED	97.72%	99.18%	99.78%	99.97%

Possible Runway 5-23 Alignment with Existing Runway 10-28 - Wind Coverage

	10.5 knots	13 knots	16 knots	20 knots
Runway 10-28	83.73%	89.44%	94.58%	98.23%
Runway 5-23	94.52%	96.95%	99.00%	99.76%
COMBINED	97.17%	98.73%	99.57%	99.92%

Wind Direction Versus Wind Speed

Station: Afton, Doña Ana County — Period of Record: 18 Jun 2014 - 18 Jun 2016

	Observations of Wind Speed										Average	
	Knots											
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41+			
Direction	MPH									Total	Knots	MPH
True	0-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47+			
010	111	382	247	63	8					811	6.8	7.9
020	88	262	203	30	4	1				588	6.6	7.5
030	87	242	202	35	13	2				581	7.0	8.1
040	76	271	265	109	20	4	1			746	8.6	9.9
050	92	397	375	192	126	63	1	1		1247	11.2	12.9
060	112	682	669	760	529	334	28			3114	15.3	17.6
070	138	831	1070	1446	846	246	6	1		4584	15.0	17.3
080	172	840	969	655	230	46				2912	11.0	12.6
090	175	847	704	307	58	7				2098	8.5	9.8
100	165	775	539	268	49	3	1			1800	8.3	9.6
110	150	730	506	253	50	1				1690	8.4	9.6
120	156	679	508	168	22	1				1534	7.6	8.7
130	158	686	464	160	15					1483	7.4	8.5
140	160	635	466	153	14	2				1430	7.4	8.5
150	142	737	431	161	23	9				1503	7.6	8.7
160	130	641	357	196	53	4				1381	8.3	9.6
170	124	538	314	170	56	10	2			1214	8.6	9.9
180	122	499	261	195	86	11	2			1176	9.4	10.8
190	111	573	345	232	123	33	6			1423	10.2	11.7
200	147	679	434	329	194	89	14	7		1893	11.4	13.1
210	176	809	420	355	287	96	13	1		2157	11.5	13.3
220	208	866	480	526	342	130	8			2560	12.1	14.0
230	258	1022	637	665	497	199	17			3295	12.8	14.7
240	282	1104	789	803	626	261	20	1		3886	13.3	15.3
250	283	930	746	857	454	197	45	2		3514	13.1	15.1
260	257	774	612	502	227	75	35	4		2486	11.3	13.0
270	245	859	486	236	55	11	1			1893	7.9	9.0
280	285	919	348	131	19	3	1			1706	6.4	7.4
290	259	868	258	74	8	3	1			1471	5.8	6.7
300	254	862	281	67	6	1				1471	5.7	6.6
310	190	735	22	68	9					1024	5.4	6.2
320	190	955	389	152	41	6				1733	7.1	8.2
330	159	801	495	178	56	8				1697	7.9	9.0
340	144	806	644	180	27	6				1807	7.7	8.9
350	200	746	490	160	30	3				1629	7.4	8.5
360	129	582	338	83	12	2				1146	6.8	7.9
Total	6135	25564	16764	10919	5215	1867	202	17	0	66683	10.1	11.6

Observations every 15 minutes

True = Magnetic -8

APPENDIX E

Business Jet Runway Length Requirements

Business Jet Runway Length Requirements

Business Jets	Airport Reference Code	Max Take-off lbs.	Take-off Distance
Cessna 551 Citation II/SP	B-II	12,500	4,300
Cessna 501 Citation I/SP	B-I	10,600	4,590
Cessna 500 Citation	B-I	11,850	4,751
Cessna 550 Citation II	B-II	13,300	4,847
Cessna 525 CitationJet (CJ-1)	B-I	10,400	4,992
Cessna 552/T-47A	B-II	16,300	5,153
Cessna 560 Citation V Ultra	B-II	16,300	5,153
Learjet 31	C-I	16,500	5,522
Cessna 525A CitationJet II (CJ-2)	B-II	12,500	5,538
Sabreliner 60	C-I	20,200	5,667
Cessna 560 Citation Encore	B-II	16,830	5,763
Cessna 560 Citation Excel	B-II	20,000	5,812
Cessna 550 Citation Bravo	B-II	14,800	5,828
Raytheon 390 Premier	B-I	12,500	6,136
Learjet 23	C-I	12,500	6,471
BeechJet 400A/T/ T-1A Jayhawk	C-I	16,100	6,743
Learjet 45	C-I	20,200	6,825
Mitsubishi MU-300 Diamond	B-I	14,630	6,953
Sabreliner 75a/80	C-II	24,500	7,210
Dassault Falcon 900	B-II	45,500	7,564
Dassault Falcon 50	B-II	37,480	7,620
Cessna 650 Citation VII	C-II	23,000	7,837
Sabreliner 40	B-I	18,650	7,918
Dassault Falcon 900 EX	C-II	48,300	8,054
Learjet 35/36	C-I	18,300	8,079
Cessna 750 Citation X	C-II	36,100	8,304
Cessna 650 Citation III/VI	C-II	21,000	8,320
Dassault Falcon 2000	B-II	35,800	8,464
Raytheon/Hawker 125-1000 Horizon	C-II	36,000	8,481
Astra 1125	C-II	23,500	8,561
Learjet 55	C-I	21,500	8,577
Learjet 60	D-I	23,500	8,657
Raytheon/Hawker 125-800	C-I	28,000	8,690
Gulfstream IV	D-II	71,780	8,802
Sabreliner 65	C-II	24,000	8,802
Sabreliner 75	C-I	23,300	8,882
Galaxy 1126	C-II	34,850	8,882
Bombardier CL-600/601 Challenger	C-II	41,250	9,204
Gulfstream V	D-III	89,000	9,670
Bombardier BD-700 Global Express	C-III	96,000	10,169

Note: Airport Elevation 4112.8 feet MSL; Temp 94 degrees F; Maximum difference in runway elevation three feet

APPENDIX F

FAA Communication

From: Charles.R.Erickson@faa.gov [mailto:Charles.R.Erickson@faa.gov]
Sent: Monday, June 12, 2017 1:50 PM
To: Allan.Will@faa.gov; William Provance <williamp@donaanacounty.org>; Ron.A.Sanders@faa.gov
Subject: RE: Identifier change 5T6 to KDNA - KDNA - DONA ANA COUNTY INTL JETPORT, SANTA TERESA, NM

Mr Provance,

Airport Name and 3 Letter ID change will become effective on 6/22/2017.

Thanks,
Charles R. Erickson
Flight Procedures South Team Lead
Central Region (IA, KS, MO, NE) and Southwest Regions (AR, LA, MO, NM, OK, TX)
(817) 222-5825

FAA, ATO Central Service Center
Operations Support Group AJV-C24
(817) 321-7737

Link to Central Service Center Website

Feedback to Central Service Center mailto:9-ATO-CSC/ASW/FAA@FAA

From: Will, Allan (FAA)
Sent: Monday, June 12, 2017 12:46 PM
To: William Provance; Sanders, Ron A (FAA); Erickson, Charles R (FAA)
Subject: RE: Identifier change 5T6 to KDNA

Mr. Provance,

I will need to refer you back to your CFPT rep Mr. Sanders. Thank you for your inquiry

R
Allan Will
Manager, Sub-Team B, AJV-5412
ANF-1--Bldg 5, Room 120
6500 S MacArthur Blvd
Oklahoma City, OK 73169
(405) 954-6103 Office
Visit Aeronautical Information Services here

From: William Provance [mailto:williamp@donaanacounty.org]
Sent: Monday, June 12, 2017 12:32 PM
To: Will, Allan (FAA)
Subject: Identifier change 5T6 to KDNA

Allan,

Would you tell me if the identifier change from 5T6 to KDNA and name change to Doña Ana County International Jetport will be effective? Will it be in the 1707 data cycle in June or did it slip to 1709 cycle in August?

Thanks.

William (Bill) Provance
Dona Ana County
International Jetport Manager
8014 Airport Road
Santa Teresa, NM 88008
Cell: 575-644-2358
Email: williamp@donaanacounty.org

FAA SOUTHWEST REGION
MODIFICATION OF AIRPORT STANDARDS

BACKGROUND

1. AIRPORT:	2. LOCATION (CITY, STATE):	3. LOC ID:
Doña Ana County Jetport	Santa Teresa, NM	5T6
4. EFFECTED RUNWAY/TAXIWAY: Runway 10 Arrival RPZ/Runway 28 Departure RPZ	5. APPROACH (EACH RUNWAY): ☐ PIR ☒ NPI 1-mile Runway 10 ☐ VISUAL	6. AIRPORT REF. CODE (ARC): B-III (FAA approved ALP), C-II current activity, C-III ultimate (draft ALP)
7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY): Gulfstream G280 (C-II family)	8. DATE OF LATEST FAA SIGNED ALP: 6/25/2012	

MODIFICATION OF STANDARDS

9. TITLE OF STANDARD BEING MODIFIED (CITE REFERENCE DOCUMENT):

AC 150/5300-13A, paragraph 310 and APP-1 memo September 27, 2012 "Interim Guidance on Land Uses Within a Runway Protection Zone"

10. STANDARD/REQUIREMENT:

Memo table 1 public roads/highways in an RPZ requires coordination with APP-400 when there is a proposed change to the RPZ size.

AC paragraph 310d does not include public roads as a permissible land use.

There is an existing IAP to Runway 10 – RNAV (GPS) RWY 10.

The ultimate Runway 10 Approach RPZ for an Instrument Approach Procedure 1-mile visibility ARC C-III and the ultimate Runway 28 Departure RPZ for an Instrument Approach Procedure ¾ mile visibility ARC C-III are the same size with a 1,700' length, 500' inner width, and a 1,010' outer width.

These ultimate RPZs overlay a public road totaling 0.44 acres. The overlap area is located at the far end of the RPZ within the Controlled Activity Area of the RPZ (see attached sketch).

The public road was studied under ASNs 2011-ASW-2032-NRA through -2040 and is the primary access to the Santa Teresa Rail facility. This road does not provide access beyond the railroad facility.

The Airport Layout Plan studied under ASN 2011-ASW-3035-NRA, ADO approved 6/25/2012, shows the existing Runway 10 RPZ 1,000' length, 500' inner width, and a 700' outer width (no overlap of the road); and the ultimate RPZ 2,500' length, 1,000' inner width, and a 1,750' outer width (overlaps this road and the adjacent railroad tracks).

11. DESCRIBE PROPOSED MODIFICATION:

Allow the ultimate Runway 10 Approach RPZ and Runway 28 Departure RPZ to overlap the public road.

12. EXPLAIN WHY STANDARD CANNOT BE MET (FAA ORDER 5300.1F):

The standard can be met with the establishment of a displaced threshold on Runway 10 and the establishment of declared distances for both Runways 10 and 28.

The Runway 10 threshold would be displaced ~185' to remove these RPZ overlays of a public road.

– CONTINUED: SEE NEXT SHEET –

Addendum to Doña Ana County Jetport (5T6/DNA) Modification of Standards for Runway 10 Arrival RPZ/Runway 28 Departure RPZ

2/6/2017

Prepared by: Bohannan-Huston, Inc., coordinated with the Doña Ana County Jetport Manager.

As requested by ASW-641 2/6/2017, the following additional information is provided.

12. EXPLAIN WHY STANDARD CANNOT BE MET (FAA ORDER 5300.1F):

The standard can be met with the establishment of a displaced threshold on Runway 10 and the establishment of declared distances for both Runways 10 and 28.

To meet the standard, the Runway 10 threshold would be displaced ~185' to remove these RPZ overlays of a public road.

With the establishment of a displaced threshold on Runway 10, the airport's only IAP (RNAV (GPS) 1-mile visibility) would be lost until a new approach can be developed. A VGS (PA & APV)/NVGS survey would be required per AC 150/5300-13A Table 3-4) and the new IAP would need to be flight checked. Loss of the only IAP has a significant impact to the airport charter and air taxi operators who are both based and use the airport. The timeframe and cost for establishment of a new IAP is unknown.

To establish the displaced threshold, additional threshold lights would be required at the displacement location, the Runway 10 Runway End Identifier Lights (REIL) and Precision Approach Path Indicator (PAPI) systems would have to be relocated. Due to the age of these systems, replacement would be required. Flight check of these new/relocated systems would be required. The assumption is made the existing light spacing will support the displacement without the need to relocate the runway edge lights to meet the spacing requirements.

The runway markings would have to be remarked to the new threshold (Runway 10 is marked NPI). Removal of the existing markings where they conflict with the new markings would require reapplication of ~2,000' of the runway slurry seal due to damage from the typical marking removal methods. The marking work would require at least a partial closure of the western ~2,600' which will impact the airport operations as Runway 10-28 is the only runway at the airport.

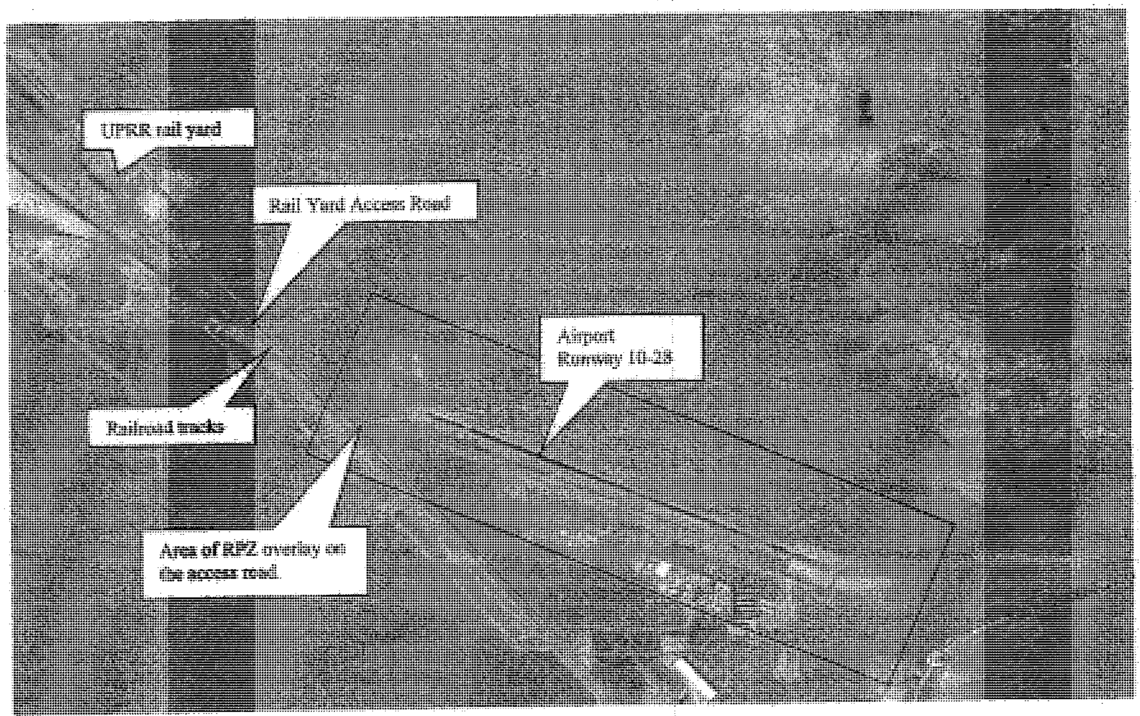
The existing connector taxiway at the Runway 10 threshold would not be relocated to the displaced threshold location.

The prevailing wind runway is Runway 28. A ~185' displacement on the 9,550' Runway 28 would reduce the TORA impacting the ability of larger/heavier aircraft from using this runway in the summer due to density altitude (field elevation is: 4114', not usual to have a density altitude of 6,200' during the summer). The loss of ~185' on Runway 10 should not impact the landing/take-off operations.

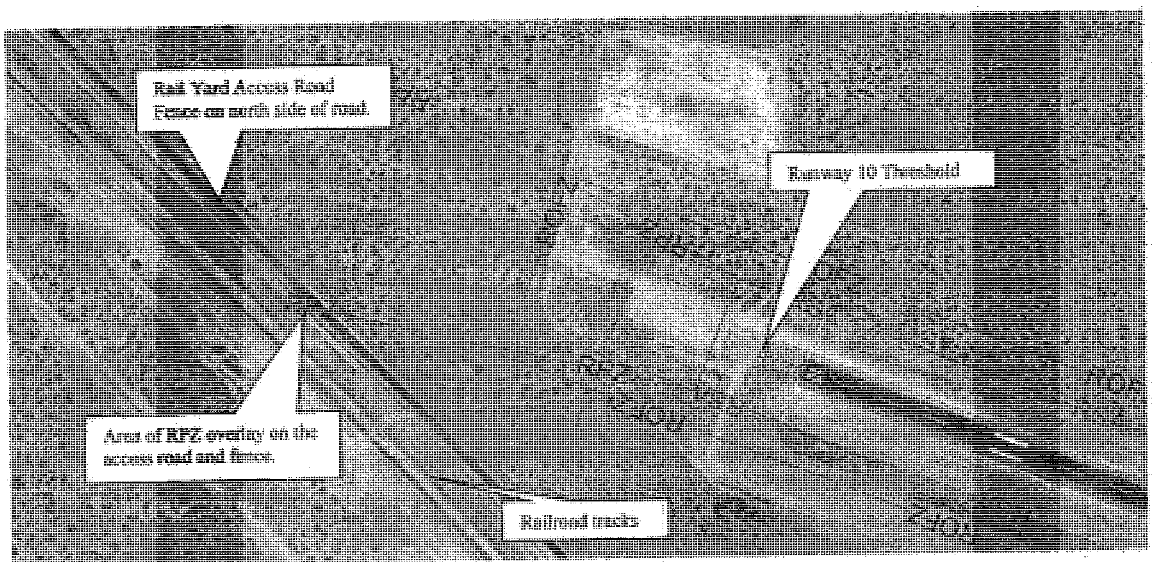
The cost for the threshold lights, REIL, PAPI, flight checks, and runway marking changes is estimated at $200,000. Due to the estimated costs, this project would have to be competitive bid.

13. DISCUSS VIABLE ALTERNATIVES (FAA ORDER 5300.1F):		
1. Approve this Modification of Standards. This action would continue the minor RPZs overlay (located in the Controlled Activity Area of the RPZ) on the public road and would not require the establishment of a new IAP for Runway 10. 2. Displace the Runway 10 threshold and establish declared distances for Runways 10 and 28; establish a new IAP for the Runway 10 approach. → EXPLAIN ISSUE WITH THIS		
14. STATE WHY MODIFICATION WOULD PROVIDE ACCEPTABLE LEVEL OF SAFETY FOR MODIFICATION TO AIRPORT DESIGN STANDARDS OR ACCEPTABLE FINISHED PRODUCT WILL PERFORM FOR INTENDED DESIGN LIFE FOR MODIFICATIONS TO MATERIAL, CONSTRUCTION OR EQUIPMENT STANDARDS OR NECESSARY TO CONFORM TO LOCAL LAWS (FAA ORDER 5300.1F): The proposed Modification of Standards is to allow an existing public road in a minor area in the Controlled Activity area of the RPZ. The traffic pattern for Runway 10 is left hand traffic which places the majority of the traffic away from this area.		
ATTACH ADDITIONAL SHEETS AS NECESSARY – INCLUDE SKETCH/PLAN		
15. SIGNATURE OF ORIGINATOR:	16. ORIGINATOR'S ORGANIZATION: Bohannan Huston, Inc	17. TELEPHONE: 505-798-7853
18. SIGNATURE OF SPONSOR (Authorized Representative)		19. TELEPHONE: 575-525-5803
Typed Name of Sponsor Julia T. Brown		

Doña Ana County Jetport - general area



Doña Ana County Jetport detail of Runway 10 RPZ



Dona ana County International Jetport
Modification of Standards for Runway 10 Runway Safety Area

NM 136@Airport
12/9/2014
Pre-UPRR Yard Traffic
Peak Hour Analysis From 14:45 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 15:00

	Airport Rd								NM 136		Total on Airport Road, all directions
	Eastbound				Westbound				Northbound	Southbound	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Right	
Car	241	122	10	373	38	23	3	64	3	80	520
Truck	45	16	5	66	6	18	0	24	5	23	118
										Total	638

NM 136@Airport
1/20/2011
Post-UPRR Yard Traffic
Peak Hour Analysis From 13:45 to 17:30 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 15:00

	Airport Rd								NM 136		Total on Airport Road, all directions
	Eastbound				Westbound				Northbound	Southbound	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Right	
Car	170	115	2	287	38	20	0	58	3	28	374
Truck	20	5	1	26	5	7	0	12	2	33	73
										Total	447

Difference - pre and post UPRR traffic, assumed traffic west of Industrial Park/Airport

	Airport Rd								NM 136		Total on Airport Road, all directions
	Eastbound				Westbound				Northbound	Southbound	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Right	
Car	71	7	8	86	0	3	3	6	2	52	146
Truck	25	11	4	40	1	11	0	12	3	0	55

difference was negative, zero entered

Total 201

Peak Hour traffic counts are for a one hour period

Vehicles per minute during peak hour	3
Cars	2
Trucks	1

FAA SOUTHWEST REGION
MODIFICATION OF AIRPORT STANDARDS

20. ADO RECOMMENDATION:	21. SIGNATURE:	22. DATE:
Concur w/ Overlap	[signature]	2/6/2017

23. FAA DIVISIONAL REVIEW (AT, AE, FS):

ROUTING SYMBOL	SIGNATURE	DATE	CONCUR	NON-CONCUR
ASW-622	Lara Logan	3/6/17	1) ✓	
ASW-611	Roman Rim	~~8~~5/6/17	2) ✓	

COMMENTS:

1) ASW-620 has no objection to limited use public road being in corner of RPZ. Passing off to ASW-610 for routing up to APP,

2) ASW-611 HAS NO OBJECTION. PROPOSAL OF M.O.S. IS NOT NEW DEVELOPMENT. THEREFORE IF OPPORTUNITY COMES ABOUT TO MOVE THRESHOLD ON RWY 4/22 TO ~~OBU~~ OBTAIN FREE & CLEAR RPZ, SPONSOR SHOULD BE ENCOURAGED TO DO SO. THIS M.O.S. DOES NOT NEED APP COORDINATION.

24. AIRPORTS' DIVISION FINAL ACTION:

☐ UNCONDITIONAL APPROVAL	☐ CONDITIONAL APPROVAL	☐ DISAPPROVAL

DATE:	SIGNATURE:	TITLE:

CONDITIONS OF APPROVAL:

APPENDIX G

FAA ALP Checklist

APPENDIX A. ALP REVIEW CHECKLIST

The following checklist shall be used in lieu of FAA AC 150/5070-6B, Appendix F, Airport Layout Plan Drawing set. This checklist is intended for use when submitting a new or updated ALP to the FAA for review and approval. Consultants and/or sponsors should indicate "Yes," "No" or "N/A" (not applicable) for every item on the checklist. The same checklist shall be provided to FAA for review and verification. For all reviewers: It is important that each item listed be shown on the respective plan.

Airport Identification (to be completed by Sponsor or Consultant)			
Airport	Doña Ana County International Jetport		
City and State	Santa Teresa, NM	Location Identifier	DNA
Airport Owner	Doña Ana County, NM		

ALP Submission Information (to be completed by Sponsor or Consultant)		
ALP Prepared by	Bohannan Huston	
	Name of Consulting Firm	
	Mark Huntzinger	
	Name of Individual	Date
	505-798-7853	
	Telephone	
	mhuntzinger@bhinc.com	
	Email address	
Consulting QA/QC Review		
	Name and Title of Individual	Date
Sponsor Review		
	Name and Title of Individual	Date

FAA Review (to be completed by FAA)	
Name and Title of Individual	Date

Critical Design Aircraft or Family of Aircraft:

	Make	Model	Annual Itinerant Operations
Existing	Gulfstream	280	C-II Family of aircraft over 500 itinerant ops in 2016
Future	Boeing	767	Ultimate/Long-term protection (over 500 itinerant)

Forecasted Year: 2025 and beyond

Airport Reference Code (ARC): Remain C-II (forecast)/ Upgrade to C-III & C-IV (Contingency Protection)

Runway Design Code (RDC) & Runway Reference (RRC):

Runway	RDC	RRC
10-28 (interim)	C-II-5000	N/A – RRC deleted in AC 150/5300-13A change 1
3-21 (ultimate)	C-IV-2400	NA

Approach Minimums:

Rwy End	Minimum	Rwy End	Minimum
10 (existing and interim)	1 mile	21 (future – ultimate)	½ mile
28 (existing)	Visual		
3 (future initial and ultimate)	1 mile		
21 (future – initial)	¾ mile		

Runways (Existing and Future):

Runway	Existing		Future		Departure Surface (Y or N/A)
	Length (ft)	Width (ft)	Length (ft)	Width (ft)	
10-28	9550	100	same	same	28 Future
3-21 (future-initial)			6400	100	NA
3-21 (future-ultimate)			12000	150	21 future

For the balance of the checklist, enter a mark (✔ or X) to confirm inclusion.

A.1. Narrative Report

Narrative Report					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Executive Summary – A concise summary of the findings/ recommendations of the master planning effort or changes to the ALP. This should include a description of planned projects, an implementation plan/timeline, and identification of benchmarks or actions that will be conducted to either verify the original planning assumptions or proceed with project implementation.	From AC 150/5070-6, Section 202: An accompanying ALP Narrative Report should explain and document those changes and contain at least the following elements: – Basic aeronautical forecasts. – Basis for the proposed items of development. – Rationale for unusual design features and/or modifications to FAA Airport Design Standards. – Summary of the various stages of airport development and layout sketches of the major items of development in each stage. – An environmental overview to document environmental conditions that should be considered in the identification and analysis of airport development alternatives and proposed projects.	×			
1. Identify Projects along with description				×	
2. Create a Timeline for each Project				×	
3. Identify and List:				×	
a. Proposed Projects (e.g., Hangar development)				×	
b. Milestones/ Triggering Events (e.g., 1. All hangars are full, 2. There is a waiting list long enough to fill a new development, 3. Hangars have reached their useful life, etc.)				×	
c. Action items/Next Steps (e.g., 1. Maintain log and gather data, 2. Discuss plan with ADO, 3. Coordinate with ADO regarding potential for inclusion in FAA ACIP (Airports Capital Improvement Program), 4. Identify funding sources.)				×	
d. Funding Plan	Capital Improvement Plan for the forecast horizons. See AC 150/5070-6, Chapter 11. Only a rough, order-of-magnitude report is needed in the executive summary.			×	

Narrative Report					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
B. Basic aeronautical forecasts (0-5, 6-10, 11-20 years): Basic aeronautical forecasts (0-5, 6-10, 11-20 years):	Forecasts of future levels of aviation activity as approved by the FAA. These projections are used to determine the need for new or expanded facilities. See AC 150/5070-6, Chapter 7.	×			
1. Total annual operations	Total local and itinerant aircraft operations at the airport.	×			
2. Annual itinerant operations by all aircraft	Itinerant operations by aircraft that leaves the local airspace, generally 25 miles or more from the airport. See AC 150/5070-6, Chapter 7, Section 702.a. and Figure 7-2.	×			
3. Annual itinerant operations by current critical aircraft		×			
4. Annual itinerant operations by future critical aircraft		×			
5. Number of based aircraft	Aircraft that use the subject airport as a home base, i.e., have hangar or tie-down space agreements. See AC 150/5070-6, Chapter 7, Section 702.a. and Figure 7-2.	×			
6. Annual instrument approaches	Number of instrument approaches expected to be executed during a 12-month period. See AC 150/5070-6, Chapter 7, Section 702.a. and Figure 7-2.	×			
7. Number of enplanements	See AC 150/5070-6, Chapter 7, Section 702.a. and Figure 7-2.			×	

Narrative Report					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
8. Critical Aircraft (also referred as "design aircraft" or "critical design aircraft)	The critical aircraft is the most demanding aircraft identified in the forecast that will use the airport. Federally funded projects require that the critical aircraft will make substantial use of the airport in the planning period. Substantial use means either 500 or more annual itinerant operations or scheduled service. The critical aircraft may be a single aircraft or a composite of the most demanding characteristics of several aircraft. Provide the aircraft, AAC, and ADG. (e.g. Boeing 737-400, C-III) See AC 150/5300-13A, Paragraph 105(b) and FAA Order 5090.3C, 3-4.	×			
9. Runway Design Code (RDC)	Describe the RDC for each runway. For the purpose of airport geometric design, each runway will contain a RDC which signifies the design standards to which the runway is to be built. The RDC consists of three parameters: Aircraft Approach Category (AAC), Airplane Design Group (ADG) and the approach visibility minimums. These parameters represent the aircraft that are intended to be accommodated by the airport, regardless of substantial use. See AC 150/5300-13A, Paragraph 105(c).	×			
10. Runway Reference Code (RRC)	Describe the RRC for each runway. The RRC describes the current operational capabilities of a runway where no special operating procedures are necessary. The RRC consists of the same three components as the RDC, but is based on planned development and has no operational application. See AC 150/5300-13A, Paragraph 318.			×	
C. Alternatives/Proposed Development					

Narrative Report					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
11. Explanation of proposed development items	Specific projects can be described as project listings on a master table, on individual project data sheets, or in projects booklets.	×			
12. Discuss near-term and future Approach Procedure Requirements or effects (e.g., LPV, Circling, etc.)	Based on existing or forecast usage. See FAA Order 7400.2, Figures 6-6-3 and 6-3-9.			×	
13. Navigational Aids or Other Equipment Needs (e.g., Approach Lights, Wind Cones, AWOS, etc.)	The need for new or additional navigational aids is a function of the fleet mix, the percentage of time that poor weather conditions are present, and the cost to the users of not being able to use the airport while it is not accessible.	×			
14. Wind coverage. Is it adequate for existing and future runway layouts? Has wind data been updated?	This analysis determines if additional runways are needed to provide the necessary wind coverage. Reference AC 150/5300-13A, Appendix 2 for guidance on wind coverage analysis techniques.	×			
D. Modification to Standards.	Any approved nonconformance to FAA standards, other than dimensional standards for RSAs and OFZs, require FAA approval. A description of all approved modification to standards shall be provided. See AC 150/5300-13A, Paragraph 106(b) and FAA Order 5300.1.	×			
E. Obstruction Surfaces (14 CFR Part 77 and Threshold Siting Surface)	Reference 14 CFR Part 77 and AC 150/5300-13A, Paragraph 303.	×			
F. Runway Protection Zone	A description of any incompatible land uses inside the RPZ shall be provided. Prior to including new or modified land use in the RPZ, the Regional and ADO staff must consult with the National Airport Planning and Environmental Division, APP-400. This policy is exempt from existing land uses in the RPZ. See AC 150/5300-13A, Paragraph 310 and FAA memorandum dated September 27, 2012.	×			

Narrative Report					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
G. Development summary (including sketches, schedules, and cost estimates) for stages of construction for: Development summary (including sketches, schedules, and cost estimates) for stages of construction for:	Documentation provided should include any electronic spreadsheets and files to facilitate in modifying the financial plan on an as-needed basis.	×			
15. Development Projects Completed Since Last ALP		×			
16. 0-5 years		×			
17. 6-10 years		×			
18. 11-20 years		×			
H. Shadow or line-of-sight study for towered airports (negative or positive statements are required).	Reference FAA Order 6480.4. This can be from the Airway Facilities Tower Integration Laboratory (AFTIL) or simpler GIS-generated studies.			×	
I. Letters of coordination with all levels of government, as needed.	Affected private and/or governmental groups, agencies, commissions, etc., that may have input on the plans. See AC 150/5070-6, Chapter 3.		×		
J. Wildlife Hazard Management Issues Review (in narrative).	Reference AC 150/5200-33.			×	
K. Preliminary Identification of Environmental Features	Potential or known features only. Further environmental analysis will be necessary. Reference FAA Order 5050.4B. Begin framework for NEPA analysis.	×			
19. Major airport drainage ditches			×		
20. Wetlands		×			
21. Flood Zones		×			
22. Historic or Cultural features		×			
23. Section 4(f) features		×			
24. Flora/Fauna		×			

Narrative Report					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
25. Natural Resources		×			
26. Etc. (other features identified in Order 5050.4B)		×			
L. Note Action Items from Runway Safety Program Office	List and note status of items from Runway Safety Program Office or Runway Safety Action Plan.			×	
M. Declared Distance (DD)	The narrative on declared distances is used to aid in understanding the maximum distances available and suitable for meeting takeoff, rejected takeoff, and landing distances performance requirements for turbine powered aircraft. The narrative shall also provide clarification on why declared distances have been implemented. Declared distances data must be listed for all runway ends. The TORA, TODA, ASDA, and LDA will be equal to the runway length in cases where a runway does not have displaced thresholds, stopways, or clearway, and have standard RSAs, ROFAs, RPZs, and TSS. Reference AC 150/5300-13A, Paragraph 323.			×	

Remarks

A. Executive Summary limited to scope of work. Overview of findings provided, but details limited.

B.10 RRC not applicable, RRC deleted by change 1 to AC 150/5300-13A

A.2. Title Sheet

- The scale of the Title Sheet should be developed to include the items listed below.
- The minimum size for the final drawing set is 22” X 34” (ANSI D) and 24” X 36” (ARCH D). Coordinate use of 34” x 44” (ANSI E) and 26” X 48” (ARCH E) with FAA. Color drawings may be acceptable if they are still usable if reproduced in grey scale.

Title Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Title and revision blocks	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	✕			
B. Airport sponsor approval block	Provide an approval block for the sponsoring authority’s representative to sign. Include space for name, title, and date.	✕			
C. Date of ALP (date the airport sponsor signs the ALP)	The month and year of signature prominently shown near the title.	✕			
D. Index of sheets (including revision date column)	Airport Layout Drawing, Airport Airspace Drawing, Inner Portion of the Approach Surface Drawing, Terminal Area Drawing, Land Use Drawing, Airport Property Map, Airport Departure Surface, etc.	✕			
E. State Aeronautics Agency Approval Block (as needed)	Provide an approval block for the sponsoring authority’s representative to sign. Include space for name, title, and date.			✕	
F. State outline with county boundaries. County in which airport is located should be highlighted.	Provide as needed.	✕			
G. Location map (general area)		✕			
H. Vicinity map (specific airport area)		✕			
Remarks					

A.3. Airport Data Sheet

- For smaller airports, some of the ALP sheets may be combined if practical and approved FAA.

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Title and Revision Blocks	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	×			
B. Wind Rose (all weather and IFR) with appropriate airport reference code and runway orientation depicted, crosswind coverage, and combined coverage, source of wind information and time period covered (for IFR runways applicable minimums should be included):	Assembly and analysis of wind data to determine ultimate runway orientation and also provides the operational impact of winds on existing runways. If instrument procedures are present or will be requested then both all-weather and instrument meteorological condition wind roses are required. See AC 150/5300-13A, Appendix 2.	×			
1. 10.5, 13, 16, 20 knots wind rose (based on appropriate airport reference code)	When a runway orientation provides less than 95 percent wind coverage for any aircraft forecasted to use the airport on a regular basis, a crosswind runway is recommended. The 95 percent wind coverage is computed on the basis of the crosswind not exceeding 10.5 knots for Airport Reference Codes A-I and B-I, 13 knots for Airport Reference Codes A-II and B-II, 16 knots for Airport Reference Codes A-III, B-III, and C-I through D-III, and 20 knots for Airport Reference Codes A-IV through D-VI. See also AC 150/5300-13A, Paragraph 302(c)(3) and AC 150/5300-13A, Appendix 2.	×			
2. Percentage of wind coverage/crosswind		×			
3. Source of data	Wind data may be obtained from NOAA at http://www.ncdc.noaa.gov/ Reference AC 150/5300-13A, Appendix 2, Paragraph A2-5 and A2-6.	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
4. Age of data (last 10 consecutive years of data with most current data no older than 10 years)	Data must be from the latest 10-year period from the reporting station closest to the airport. Reference AC 150/5300-13A, Appendix 2, Paragraph A2-5.	×			
C. Airport Data Table					
1. ARC for Airport	List the Airport Reference Code (ARC) for airport. 5300-13AARC is an airport designation that signifies the airport's highest Runway Design Code (RDC), minus the third (visibility) component of the RDC. Reference AC 150/5300-13A.	×			
2. Mean maximum temperature of hottest month	List the mean maximum temperature and the hottest month for the airport location as listed in "Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree-Days" (Climatography of the United States No. 81). See AC 150/5325-4, 506.b.	×			
3. Airport elevation (highest point of the landing areas, nearest 0.1 foot) – using North American Vertical Datum of 1988 (NAVD88)	List the Airport Elevation, the highest point on an airport's usable runway expressed in feet above mean sea level (MSL). Use NAVD88. Reference AC 150/5300-13A, Paragraph 102(g) All elevations shall be in NAVD88. A note shall be put on the Airport Layout Drawing that denotes that the NAVD88 vertical control datum was used.	×			
4. Airport Navigational Aids, including ownership (NDB, TVOR, ASR, Beacon, etc.)	List the electronic aids available at the airport.	×			

Airport Data Sheet					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
5. Airport reference point coordinates, nearest second (existing, future if appropriate, and ultimate) - NAD83	List the Airport Reference Point, the latitude and longitude of the approximate center of the airport. Use the North American Datum of 1983 (NAD83) coordinate system. See AC 150/5300-13A, Paragraph 207. All latitude/longitude coordinates shall be in NAD83. A note shall be put on the Airport Layout Drawing that denotes that the NAD83 coordinate system was used.	×			
6. Miscellaneous facilities (taxiway lighting, lighted wind cone(s), AWOS, etc.) [Including type/model and any facility critical areas]	List any other facilities available at the airport.	×			
7. Airport Reference Code and Critical Aircraft (existing & future)	List the existing and ultimate Airport Reference Code and Critical Aircraft, the most demanding aircraft identified in the forecast that will use the airport. Federally funded projects require that critical design airplanes have at least 500 or more annual itinerant operations at the airport (landings and takeoffs are considered as separate operations) for an individual airplane or a family grouping of airplanes. See AC 150/5325-4, 102.a.(8) and AC 150/5070-6, 702.a. Indicated dimensions for wingspan and undercarriage, along with approach speed.	×			
8. Airport magnetic variation, date and source	Magnetic declination may be calculated at http://www.ngdc.noaa.gov/geomag-web/#declination. This model is using the latest World Magnetic Model which has an Epoch Year of 2010. See FAA Order 8260.19, "Flight Procedures and Airspace." Chapter 2, Section 5, for further information.	×			
9. NPIAS service level (GA, RL, P, CS, etc.)	See FAA Order 5090.3C.	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
10. State equivalent service role	As applicable pursuant to State Aviation Department System Plan.	×			
D. Runway Data Table	The Runway Data Table should show information for both existing and ultimate runways.	×			
1. Runway identification (Include identifying runways that are "utility")	A column for each runway end should be present. List the runway end number and if pavement strength is less than 12,500 pounds (single-wheel), then note as utility.	×			
2. Runway Design Code (RDC)	5300-13AThe first component, depicted by a letter, is the AAC and relates to aircraft approach speed (operational characteristics). 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 more restrictive. The third component relates to the visibility minimums expressed by RVR values in feet of 1200, 1600, 2400, and 4000. List the RDC for each runway. See AC 150/5300-13A, Paragraph 105(c).	×			
3. Runway Reference Code (RRC)	The RRC describes the current operational capabilities of a runway where no special operating procedures are necessary. Like the RDC, it is composed of three components: AAC, ADG, and visibility minimums. List the RRC for each Runway. See AC 150/5300-13A, Paragraph 318.			×	
4. Pavement Strength & Material Type	Indicate the runway surface material type, e.g., turf, asphalt, concrete, water, etc.	×			
a. Strength by wheel loading	List the existing and ultimate design strength of the landing surface. See AC 150/5320-6, Chapter 3.	×			
b. Strength by PCN	See AC 150/5335-5.	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
c. Surface treatment	Note any surface treatment: grooved, PFC, etc.	×			
5. Effective Runway Gradient (%) Author to note maximum grade within runway length. Note to included statement that the runway meets line of sight requirements	List the maximum longitudinal grade of each runway centerline. See AC 150/5300-13A, Paragraph 313.	×			
6. Percent (%) Wind Coverage (each runway)	List the percent wind coverage for each runway for each Aircraft Approach Category. See AC 150/5300-13A, Appendix 2.	×			
7. Runway dimensions (length and width)	Dimensions determined for the Critical Design Aircraft by using graphical information in AC 150/5325-4.	×			
8. Displaced Threshold	Provide the pavement elevation of the runway pavement at any displaced threshold. See AC 150/5300-13A, Paragraph 303(2).			×	
9. Runway safety area dimensions (actual existing and design standard)	List the existing and ultimate dimensions of the Runway Safety Area (RSA). See AC 150/5300-13A, Paragraph 307.	×			
10. Runway end coordinates (NAD83) (include displaced threshold coordinates, if applicable) to the nearest 0.01 second and 0.1 foot of elevation.	Show the latitude and longitude of the threshold center and end of pavement (if different) to the nearest .01 of a second and 0.1 foot of elevation.	×			
11. Runway lighting type (LIRL, MIRL, HIRL)	List the existing and ultimate type of runway lighting system for each runway, e.g., Reflectors, Low Intensity Runway Lighting (LIRL), Medium Intensity Runway Lighting (MIRL), or High Intensity Runway Lighting (HIRL). LIRLs will typically not be shown for new systems. See AC 150/5340-30, Ch. 2.	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
12. Runway Protection Zone (RPZ) Dimensions	List the existing and ultimate Runway Protection Zone (RPZ) dimensions. See AC 150/5300-13A, Paragraph 310. Prior to including new or modified land use in the RPZ, the Regional and ADO staff must consult with the National Airport Planning and Environmental Division, APP-400. This policy is exempt from existing land uses in the RPZ. See AC 150/5300-13A, Paragraph 310 and FAA memorandum dated September 27, 2012.	×			
13. Runway marking type (visual or basic, non-precision, precision)	Indicate the existing and ultimate pavement markings for each runway. See AC 150/5340-1, Section 2.	×			
14. 14 CFR Part 77 approach category (50:1; 34:1; 20:1) Existing and Future	List the existing and ultimate approach surface slope. See FAA Order 7400.2, Figures 6-6-3 and 6-3-9.	×			
15. Approach Type (precision, non-precision, visual)	List the existing and ultimate Part 77 Approach Use Types. See FAA Order 7400.2, Figures 6-6-3 and 6-3-9.	×			
16. Visibility minimums (existing and future)	List the existing and ultimate visibility minimums for each runway. See AC 150/5300-13A, Table 1-3.	×			
17. Type of Aeronautical Survey Required for Approach (Vertically Guided, not Vert. Guided)	List the type of aeronautical survey required for the visibility minimums given. See AC 150/5300-18, Section 2.7 and AC 150/5300-13A, Table 3-4 and Table 3-5.	×			
18. Runway Departure Surface (Yes or N/A)"	Determine applicability of 40:1 Departure Obstacle Clearance Surface (OCS) as defined in Paragraph 303(c) of AC 150/5300-13A.	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
19. Runway Object Free Area	List the existing and ultimate dimensions of the Runway Object Free Area (OFA). See AC 150/5300-13A, Paragraph 309. Objects non-essential for air navigation or aircraft ground maneuvering purposes must not be placed in the ROFA, unless a modification to standard has been approved.	×			
20. Obstacle Free Zone	The OFZ clearing standard precludes aircraft and other object penetrations, except for frangible NAVAIDs that need to be located in the OFZ because of their function. Modification to standards does not apply to the OFZ. List the Runway OFZ, Inner-approach OFZ, Inner-transitional OFZ, and Precision OFZ if applicable.	×			
21. Threshold siting surface (TSS)	List the existing and ultimate threshold siting surface (i.e. approach and departure surfaces). Identify any objects penetrating the surface. If none, state “No TSS Penetrations”. Reference AC 150/5300-13A, Paragraph 303.	×			
22. Visual and instrument NAVAIDs (Localizer, GS, PAPI, etc.)	List the existing and ultimate visual navigational aids serving each runway.	×			
23. Touchdown Zone Elevation	List the highest runway centerline elevation in the existing and ultimate first 3000 feet from landing threshold. See FAA Order 8260.3, Appendix 1.	×			
23. Taxiway and Taxilane width	List the existing and ultimate width of the taxiways and taxilane. Reference AC 150/5300-13A, Paragraph 403 and Table 4-2.	×			
24. Taxiway and Taxilane Safety Area dimensions	List the existing and ultimate taxiway and taxilane safety area dimensions. Reference AC 150/5300-13A, Paragraph 404(c) and Table 4-1.	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
25. Taxiway and Taxilane Object Free Area	List the existing and ultimate taxiway and taxilane object free area dimensions. Reference AC 150/5300-13A, Paragraph 404(b) and Table 4-1.	×			
26. Taxiway and Taxilane Separation	List any objects located inside the Taxiway/Taxilane Safety Area and Taxiway/Taxilane Object Free Area. Also provide the distance from the taxiway/taxilane centerline to the fixed or movable object. Reference Paragraph 404(a) and Table 4-1.	×			
27. Taxiway/Taxilane lighting	List the existing and ultimate type of taxiway lighting system, e.g., Reflectors, Low Intensity Taxiway Lighting (LITL), Medium Intensity Taxiway Lighting (MITL), or High Intensity Taxiway Lighting (HITL). LITLs will typically not be shown for new systems. See AC 150/5340-30, Chapter 4.	×			
28. Identify the vertical and horizontal datum	All latitude/longitude coordinates shall be in North American Datum of 1983 (NAD 83). A note shall be put on the Airport Layout Drawing that denotes that the NAD 83 coordinate system was used. All elevations shall be NAVD88. A note shall be put on the Airport Layout Drawing that denotes that the NAVD88 vertical control datum was used.	×			
E. Modification to Standards Approval Table (if applicable, a separate written request, including justification, should accompany the modification to standards). Show: Approval Date/ Airspace Case No. / Standard to be Modified / Description	Provide a table to list all FAA approved Modifications to Standards. See AC 150/5300-13A, Paragraph 106(b), and FAA Order 5300.1. List “None Required” on the table if no Modifications have yet been proposed or approved.	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
F. Declared Distances Table	Required even if Declared Distances are not in effect. Declared distances are only to be used for runways with turbine-powered aircraft. The TORA, TODA, ASDA, and LDA will be equal to the runway length in cases where a runway does not have displaced thresholds, stopways, or clearways, and have standard RSAs, ROFAs, RPZs, and TSS. Reference AC 150/5300-13A, Paragraph 323.	×			
1. Take Off Run Available (TORA)	List the runway length declared available and suitable for the ground run of an airplane taking off, i.e., Take Off Run Available (TORA). The TORA may be reduced such that it ends prior to the runway to resolve incompatible land uses in the departure RPZ, and/or to mitigate environmental effects. Reference AC 150/5300-13A, Paragraph 323(d)(1).	×			
2. Take Off Distance Available (TODA)	List the length of remaining runway or clearway (CWY) beyond the far end of the TORA ADDED TO the TORA. The resulting sum is the Take Off Distance Available (TODA) for the runway. The TODA may be reduced to mitigate penetrations to the 40:1 instrument departure surface, if applicable. The TODA may also extend beyond the runway end through the use of a clearway Reference AC 150/5300-13A, Paragraph 323(d)(2).	×			
3. Accelerate Stop Distance Available (ASDA)	5300-13A List the length the length of runway plus stopway (if any) declared available and suitable for satisfying accelerate-stop distance requirements for a rejected takeoff. Additional RSA and ROFA can be obtained by reducing the ASDA. Reference AC 150/5300-13A, Paragraph 323(d)(3).	×			

Airport Data Sheet					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
4. Landing Distance Available (LDA)	5300-13A List the length of runway declared available and suitable for satisfying landing distance requirements. The LDA may be reduced to satisfy the approach RPZ, RSA, and ROFA requirements. Reference AC 150/5300-13A, Paragraph 323(e).	×			
G. Legend	Provide a Legend that identifies all symbols and line types used on the drawing. Lines must be clear and readable with sufficient scale and quality to discern details.				
Remarks 3. RRC deleted with AC 150/5300-13A change 1. 8. No displaced threshold planned 21. no longer called TSS, Approach/Departure Surface					

A.4. Airport Layout Plan Drawing

- For smaller airports, some of the ALP sheets may be combined if practical and approved by FAA.
- Two, or more, sheets may be necessary for clarity, existing and proposed. The reviewer should be able to differentiate between existing, future, and ultimate development. If clarity is an issue, some features of this drawing may be placed in tabular format. North should be pointed towards the top of the page or to the left. (scale 1”=200’ to 1”=600’)

Airport Layout Plan Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Title and Revision Blocks	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	×			
B. Space for the FAA approval stamp	Leave a blank four-inch by four-inch area for the FAA approval stamp.	×			
C. Layout of existing and proposed facilities and features:	To assure full consideration of future airport development in 14 CFR Part 77 studies, airport owners must have their plans on file with the FAA. The necessary plan data includes, as a minimum, planned runway end coordinates, elevation, and type of approach for any new runway or runway extension. See AC 150/5300-13A, Paragraph 106.	×			
1. True and magnetic North arrow with year of magnetic declination	Magnetic declination may be calculated at http://www.ngdc.noaa.gov/geomag-web/#declination. This model is using the latest World Magnetic Model which has an Epoch Year of 2010. See FAA Order 8260.19, "Flight Procedures and Airspace." Chapter 2, Section 5, for further information.	×			
2. Airport reference point – locate by symbol a Lat./Long. To nearest second (existing, future, and ultimate) NAD 83	List the Airport Reference Point, the latitude and longitude of the approximate center of the airport. Use the NAD 83 coordinate system. See AC 150/5300-13A, Paragraph 207.	×			
3. Wind cones, segmented circle, beacon, AWOS, etc.	Show as applicable pursuant to AC 150/5300-13A, Chapter 6.	×			

Airport Layout Plan Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
4. Contours (showing only significant terrain differences)	Topography, budget, and future uses of the base mapping, will dictate what intervals of topographical contours to use on the maps. Topographic issues may be important in the alternatives analysis, which may require that reduced contour intervals be used. See AC 150/5070-6, 1005.	×			
5. Elevations: All NAVD88	All latitude/longitude coordinates shall be in NAD83/NAVD88.	×			
a. Runway – existing, future, and ultimate ends (nearest 0.1 ft.)	Show the latitude and longitude of the threshold center and end of pavement.	×			
b. Touchdown Zone Elevation (highest point in first 3,000 ft. of runway)	List the highest runway centerline elevation in the existing and ultimate first 3000 feet from landing threshold. See FAA Order 8260.3, Appendix 1.	×			
c. Runway high/low points (existing and future)	For all runways identify high and low points (centerline) and provide elevation information.	×			
d. Label runway/runway intersection elevations	Label the pavement elevation of runway intersections where the centerlines cross.			×	
e. Displaced Thresholds (if any)	Label the pavement elevation and coordinates of the runway pavement at any displaced threshold. See AC 150/5300-13A, Paragraph 303(a)(2).			×	
f. Roadways & Railroads (where they intersect Approach surfaces, the extended runway centerline, and at the most critical points)	Provide elevation information for the traverse ways' centerline elevation where they intersect the Part 77 Approach surfaces (existing and ultimate). Note whether this elevation is the actual elevation or the traverseway elevation plus the traverseway adjustment (23' for railways, 17' for interstate highways, 15' for other public roads, or 10' for private roads). See also 14 CFR Part 77.		×		

Airport Layout Plan Drawing

Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
g. Structures, Buildings, and Facilities	All buildings on the Airport Layout Drawing should be identified by an alphanumeric character. List these identifiers in a table and give a description of the building. If no Terminal Area drawing is done, also include the top of structure elevation in MSL. If any of the structures violate any airport or approach surfaces give an ultimate disposition to remedy the violation. Don’t forget navigation aid shelters, AWOS/ASOS, RVRs, PAPIs, Fueling systems, REILs, etc. Also identify the structure use (hangar, FBO, crew quarters, etc.), as needed. Some lesser objects may be identified by symbols in the legend.		×		
h. Define features to include: trees streams, water bodies, etc.	Provide information and delineate trees, streams, water bodies, etc., on or near airport property and approach surfaces.			×	
6. Runway Details					
a. Runway Design – runway length, runway width, shoulder width, blast pad width, blast pad length, and cross wind component. (existing, future, and ultimate)	AC 150/5325-4 describes procedures for establishing the appropriate runway length. AC 150/5300-13A, Table 3-4 and Table 3-5 provides the minimum runway length. AC 150/5300-13A, Table 3-8 provides the standard dimensions of the runway width, shoulder width, blast pad width, blast pad length, and crosswind component based on RDC. Clearly denote the runway numbers at the thresholds. Show location of existing and future threshold lights.	×			
b. Orientation – true bearing to nearest 0.01 second (and runway numbers)	Show the true bearing to the nearest .01 of a degree of the runway centerline.				

Airport Layout Plan Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
c. End Coordinates – existing, future, and ultimate degrees, minutes, seconds (to the nearest 0.01 second)	Show the latitude and longitude of the threshold center and end of pavement (if different) to the nearest .01 of a second.	×			
d. Runway Safety Areas (RSA) – actual, existing, future, and ultimate (including dimensions)	Show the extents of the existing and ultimate RSA 5300-13A. Reference AC 150/5300-13A, Paragraph 307.	×			
e. Runway Object Free Areas (ROFA)	Show the extents of the existing and ultimate ROFA. Reference AC 150/5300-13A, Paragraph 309.	×			
f. Precision Obstacle Free Zone (POFZ)	Show the extents of the existing and ultimate POFZ. Reference AC 150/5300-13A, Paragraph 308(d).	×			
g. Obstacle Free Zone (OFZ)	Show the extents of the existing and ultimate OFZ. Reference AC 150/5300-13A, Paragraph 308.	×			
h. Clearways and Stopways	Show any/all clearways and stopways/overruns and the markings used to denote these areas. See AC 150/5300-13A, Paragraph 311 and 312; and AC 150/5340-1, Section 2, Paragraph 14.			×	
i. Runway Protection Zone (RPZ) - Dimensions (existing, future, and ultimate)	Show existing and ultimate RPZ. See AC 150/5300-13A, Paragraph 310. Show the existing and ultimate protective area/zone type of ownership. Identify any incompatible objects and activities inside the RPZ. Prior to including new or modified land use in the RPZ, the Regional and ADO staff must consult with the National Airport Planning and Environmental Division, APP-400. This policy is exempt from existing land uses in the RPZ. See AC 150/5300-13A, Paragraph 310 and FAA memorandum dated September 27, 2012.	×			

Airport Layout Plan Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
j. 14 CFR Part 77 Approach Surfaces	Show the portion of the existing and ultimate approach surfaces that are over airport and adjacent property and identify the approach surface dimensions and slope. See FAA Order 7400.2, Figure 6-3-9.		×		
k. Threshold Siting Criteria: Approach/Departure Surface (existing, future, and ultimate) 5300-13A	Determine and identify pursuant to AC 150/5300-13A, Paragraph 303(b) and 303(c).		×		
l. Terminal Instrument Procedures (TERPS)surface and TERPS GQS, if applicable.	Determine and identify pursuant to AC 150/5300-13A, Paragraph 303(a)(4)(a), Table 3-4, and Table 3-5. Reference FAA Order 8260.3.			×	
m. Navigation Aids (NAVAIDS) – PAPI, ILS, GS, LOC, ALS, MALSR, REIL, etc., (plus facility critical area's)	Show all NAVAIDS and provide clearance distances from runways, taxiways, etc. Reference AC 150/5300-13A, Chapter 6.	×			
n. Marking – thresholds, hold lines, etc.	Show on the runway the type and location of markings, existing and ultimate. See AC 150/5340-1, Section 2.	×	×		
o. Displaced threshold coordinates and elevation	Show the latitude, longitude, and the pavement elevation of the runway pavement at any displaced threshold. See AC 150/5300-13A, Paragraph 303(a)(2).5300-13A.			×	
p. Runway centerline separation distances	Show the runway centerline separation distances to parallel runway centerline, holding position, parallel taxiway/taxilane centerline, aircraft parking area, and helicopter touchdown pad, if applicable. Reference AC 150/5300-13A, Paragraph 321 and Table 3-8.		×		
7. Taxiway Details	Show the taxiway centerline separation distances to parallel taxiway/taxilane centerlines, fixed or movable objects.		×		

Airport Layout Plan Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
a. Dimensions – width (existing & ultimate)	Taxiway width based on Taxiway Design Group (TDG). See AC 150/5300-13A, Table 4-2.		×		
b. Taxiway Edge Safety Margin (TESM)	TESM dimension based on TDG. See AC 150/5300-13A, Table 4-2.		×		
c. Taxiway Shoulder Width	Taxiway shoulder width based on TDG. See AC 150/5300-13A, Table 4-2.		×		
b. Taxiway/Taxilane Object Free Area (TOFA)	TOFA width based on Taxiway Design Group (TDG). TOFA extend the entire length of taxiway. See AC 150/5300-13A, Table 4-1.		×		
c. Taxiway/Taxilane Safety Area (TSA)	TSA width based on TDG. TSA extend the entire length of taxiway. See AC 150/5300-13A, Table 4-1.		×		
d. Taxiway/Taxilane Centerline Separation from:					
i. Runway centerline	Show the distance from centerline of runway to centerline of taxiway. See AC 150/5300-13A, Table 4-1.		×		
ii. Parallel taxiway	Show the distance from centerline of taxiway to centerline of parallel taxiway. See AC 150/5300-13A, Table 4-1.		×		
iii. Aircraft parking	Show the distance from centerline of taxiway to marked aircraft parking/tie downs. See AC 150/5300-13A, Table 4-1.		×		
iv. Fixed or Movable Objects	Show the distance from centerline of taxiway to airport objects such as buildings, facilities, poles, etc. See AC 150/5300-13A, Table 4-1.		×		
8. Fences (identify height)	Show the location of existing and ultimate fences and identify height.		×		

Airport Layout Plan Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
9. Aprons					
a. Dimensions (square footage, dimension, or length and width)	Include dimensions of apron and distance from runway and taxiway centerlines. Apron should be sized using activity forecast and the apron design spreadsheet. See AC 150/5300-13A, Chapter 5 and FAA Engineering Brief No. 75.		×		
b. Identify aircraft tie-down layout	Show proposed tie-down layout on the apron area. See AC 150/5300-13A, Figure A5-1, AC 20-35, and AC 150/5340-1.		×		
c. Identify Special Use Areas (e.g., deicing or aerial application areas on or near apron)	Show as applicable and pursuant to representative ACs.	×			
10. Roads	Label all roads.	×			
11. Legend	Provide a Legend that identifies all symbols and line types used on the drawing. Lines must be clear and readable with sufficient scale and quality to discern details.				
12. Items to be identified with distinct line types	Use distinct line types to identify different items and differentiate between existing and ultimate.				
a. NAVAID Critical Areas (Glide Slope, Localizer, AWOS, ASOS, VOR, RVR, etc.)	Show the critical area outline for all Instrument Landing System and other electronic Navigational Aids located on the airport. See AC 150/5300-13A, Chapter 6 for general guidance and FAA Order 5750.16 for critical area dimensions.	×			
b. Building Restriction Lines 5300-13A(BRL)	The BRL is the line indicating where airport buildings must not be located, limiting building proximity to aircraft movement areas. See AC 150/5300-13A, Paragraph 213(a).	×			
c. Runway Visibility Zone (RVZ)	Show the RVZ for the existing and ultimate airport configurations. See AC 150/5300-13A, 305(c).			×	

Airport Layout Plan Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
d. Airport Property Lines and Easements (existing, future, and ultimate)	Show the airport property boundaries, including easements, for the existing and ultimate airport configurations.	×			
13. Survey Documentation					
a. Survey Monuments (PACS/SACS, see AC 150/5300-16)	Show the location of all established survey monuments located on or near the airport property. Identify Primary and Secondary Airport Control Stations (PACS/SACS) if they exist. See AC 150/5300-16. Show the location of all section corners on or near the airport property.	×			
b. Offsets, stations, etc.	Show as applicable.				
14. Any Air Traffic Control Tower (ATCT) line of sight/shadow study areas (use separate sheet if necessary)	Reference FAA Order 6480.4.			×	
15. General Aviation development area (e.g., fuel facilities, FBO, hangars, etc.) – greater detail can be shown on the terminal area drawing	Show as applicable.		×		
16. Facilities and movement areas that are to be phased out, if any, are described	Show as applicable.			×	

Airport Layout Plan Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	

Remarks

A.4 Airport Layout Plan Drawing

General:

All dimensions contained in the data tables

C.4 Contours shown on the Airspace Map

C.5f roadways and railroads shown on the Part 77 and Inner Portion of the Approach Surface drawings.

C.5.g Existing buildings shown on the Terminal Area Plan

C.5.h no water features or significant trees in the vicinity of the airport.

C.6.h No Clearways or Stopways

C.6j shown on the Part 77 Drawing

C.6.k shown on the Inner Portion of the Approach Surface drawing

C.6.n future runway markings not shown, existing markings shown on aerial photograph. Scale too large to show taxiway markings.

C.8 not all fences shown, ALP has a general note on the location of some fences

C.9 Apron information shown on the Terminal Area Plan

C.12.c RVZ of extended runway centerlines removed from AC 150/5300-13A by Errata #14.

C.12.d property outline shown, parcels shown on the Airport Property Map

C.13 Section Corners not shown

C.15 shown on Terminal Area Drawing

A.5. Airport Airspace Drawing

- A required drawing.
- Scale 1” = 2000’ plan view, 1” = 1000’ approach profiles, 1”=100’ (vertical) for approach profiles.
- 14 CFR Part 77, Objects Affecting Navigable Airspace, defines this as a drawing depicting obstacle identification surfaces for the full extent of all airport development. It should also depict airspace obstructions for the portions of the surfaces excluded from the Inner Portion of the Approach Surface Drawing.

Airport Airspace Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
A. Title and Revision Block	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	×			
B. Plan view (based on ultimate runway lengths) Include location of water or sewage facilities if inside horizontal surface.					
1. U.S. Geological Survey (USGS) Quad Sheet for base map	Use the most current USGS Quadrangle(s) as a base map for the airspace drawing.		×		
2. Runway end numbers	Show the ultimate runways and runway numbers. Contact the FAA before renumbering existing runways.	×			
3. Part 77 Surfaces (Horizontal, Conical, Transition, based on ultimate). Including elevations at the point where surfaces change.	Show the extents of the Part 77 imaginary surfaces. For airports that have precision approach runways show balance of the 40,000’ approach on a second sheet, if necessary. See 14 CFR Part 77.19.	×			
4. 50’ elevation contours on sloping surfaces (NAVD88)	Show contour lines on all sloping Part 77 imaginary surfaces. See 14 CFR Part 77.19.	×			
5. Top elevations of penetrating objects for the inner portion of the approach surface drawing	Identify by unique alphanumeric symbol all objects beyond the Runway Protection Zones that penetrate any of the Part 77 surfaces. See 14 CFR Part 77.	×			
6. Note specifying height restriction (ordinances/statutes)	List any local zoning restrictions that are in place to protect the airport and surrounding airspace. See AC 150/5190-4.		×		

Airport Airspace Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
7. North Arrow with magnetic declination and year	Magnetic declination may be calculated at http://www.ngdc.noaa.gov/geomag-web/#declination. This model is using the latest World Magnetic Model which has an Epoch Year of 2010. See FAA Order 8260.19, "Flight Procedures and Airspace." Chapter 2, Section 5, for further information.	×			
C. Profile view					
1. Airport Elevation	List the Airport Elevation, the highest point on an airport's usable runway expressed in feet above mean sea level (MSL). Use NAVD88 datum. See AC 150/5300-13A, Chapter 1, Paragraph 102(g).	×			
2. Composite Ground Profile along extended Runway Centerline (Representing the composite profile, based on the highest terrain across the width and along the length of the approach surface)	Depict the ground profile along the extended runway centerline representing the composite profile, based on the highest terrain across the width and along the length of the approach surface.		×		
3. Significant objects (bluffs, rivers, roads, schools, towers, etc.) and elevations	Identify all significant objects (roads, rivers, railroads, towers, poles, etc.) within the approach surfaces, regardless of whether or not they are obstructions. Use the objects' same alphanumeric identifier that was used on the plan view. Identify the top elevations of all significant objects (roads, rivers, railroads, towers, poles, etc.) within the approach surfaces, regardless of whether or not they are obstructions.	×			
4. Existing, future, and ultimate runway ends and approach slopes	Show existing and ultimate runway ends and FAR Part 77 approach surface slopes. See 14 CFR Part 77.19.	×			

Airport Airspace Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
D. Obstruction Data Tables (identify obstacles not depicted on the Inner Portion of the Approach Surface Drawing)					
1. Object identification number	Identify all significant objects (roads, rivers, railroads, towers, poles, etc.) within the approach surfaces, regardless of whether or not they are obstructions. Use the objects alphanumeric identifier that was used on the plan view.	×			
	Identify the top elevations of all significant objects (roads, rivers, railroads, towers, poles, etc.) within the approach surfaces, regardless of whether or not they are obstructions.				
2. Description	Provide a brief description of the object, e.g., Power Pole, Cell Tower, Natural Gas Flare, etc.	×			
3. Date of Obstruction Survey	Provide the date of latest obstruction survey.		×		
4. Ground Surface Elevation	Provide the ground surface elevation (MSL) at the base of each object.	×			
5. Object Elevation	List the above ground level (AGL) height and the top of object elevation (above mean sea level / AMSL / MSL) for each object.	×			
6. Amount of surface penetration	List the surface that is penetrated and the amount the object protrudes above the surface. See 14 CFR Part 77.	×			
7. Proposed or existing disposition of the obstruction	Provide a proposed or existing disposition of the object to remedy the penetration. See AC 70/7460-1.	×			
a. Proposed Disposition (existing)		×			
b. Proposed Disposition (future)		×			

Airport Airspace Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
Remarks A.5.B.1 Aerical photogrammetry used for topographic information in lieu of USGS Quad map A.5.C.2 Ground Profile shown is for extended runway centerline, not composite. A.5.D.3 Topographic info from County, 2010					

A.6. Inner Portion of the Approach Surface Drawing

- A required drawing.
- Scale 1”=200’ Horizontal, 1”=20’ Vertical, two sheets may be necessary for clarity. Typically, the plan view is on the top half of the drawing and the profile view is on the bottom half. Views should be drawn from the runway threshold to a point on the approach slope 100 feet above the runway threshold elevation, at a minimum, or the limits of the RPZ, whichever is further.
- Drawings containing the plan and profile view of the inner portion of the approach surface to the runway and a tabular listing of all surface penetrations. The drawing will depict the obstacle identification approach surfaces contained in 14 CFR Part 77, Objects Affecting Navigable Airspace. The drawing may also depict other surfaces, including the threshold-siting surface, Glideslope Qualification Surface (GQS), those surfaces associated with United States Standards for Instrument Procedures (TERPS), or those required by the local FAA office or state agency. The extent of the approach surface and the number of airspace obstructions shown may restrict each sheet to only one runway end or approach.

Inner Portion of the Approach Surface Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Title and Revision Block	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	×			
B. Plan View (existing, future, and ultimate)					
1. Inner portion of approach surface	Show the area from the runway threshold out to where the ultimate approach surface slope is 100 feet above the threshold elevation.	×			
2. Aerial photo for base map	Use an aerial photograph for the base map.	×			
3. Objects (identified by numbers)	Identify all significant objects (roads, rivers, railroads, towers, poles, etc.) within the approach surfaces, regardless of whether or not they are obstructions using an alphanumeric character.	×			
4. Property line within approaches	Show the property lines that are within the area/portion of airport shown.	×			

Inner Portion of the Approach Surface Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
5. Road & railroad elevations, plus movable object heights	Provide elevation information for the traverse ways' centerline elevation where they intersect the Part 77 Approach surfaces (existing and ultimate). Note whether this elevation is the actual elevation or the traverse way elevation plus the traverse way adjustment (23' for railways, 17' for interstate highways, 15' for other public roads, or 10' for private roads). See also 14 CFR Part 77.	×			
6. Part 77 Approach Surface clearance over Roads and Railroads at the most critical points, the Centerline and Edge of the surface.	Provide elevation information for the traverse ways where they intersect the edges and centerline of the Part 77 Approach surfaces (existing and ultimate). Note whether this elevation is the actual elevation or the traverseway elevation plus the traverseway adjustment (23' for railways, 17' for interstate highways, 15' for other public roads, or 10' for private roads). See also 14 CFR Part 77.	×			
7. Physical end of runway, end number, elevation (NAVD88) Nearest 0.1 foot	Show the existing and ultimate runway end, runway number, and the elevation of the threshold center.	×			
8. Airport Design Surfaces					
a. Runway Safety Area	Show the extents of the existing and ultimate Runway Safety Area (RSA). See AC 150/5300-13A, Paragraph 307 and Table 3-8.	×			
b. Runway Object Free Area	Show the extents of the existing and ultimate Object Free Area (OFA). See AC 150/5300-13A, Paragraph 309 and Table 3-8.		×		
c. Runway Obstacle Free Zone (OFZ)	Show the extents of the existing and ultimate OFZ which includes the inner-approach OFZ, inner-transitional OFZ, and the Precision OFZ (POFZ), if applicable. See AC 150/5300-13A, Paragraph 308.	×			

Inner Portion of the Approach Surface Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
d. Runway Protection Zone (RPZ)	Show the extents of the existing and ultimate RPZ. Prior to including new or modified land use in the RPZ, the Regional and ADO staff must consult with the National Airport Planning and Environmental Division, APP-400. This policy is exempt from existing land uses in the RPZ. See AC 150/5300-13A, Paragraph 310, Table 3-5 and FAA memorandum dated September 27, 2012.	×			
e. NAVAID critical area	Show the critical area outline for all Instrument Landing System and other electronic Navigational Aids located on the airport. See AC 150/5300-13A, Chapter 6 for general guidance and FAA Order 5750.16 for critical area dimensions.		×		
9. Ground contours	Show ground contour lines in 2', 5', or 10' intervals. Topographic issues may be important in the alternatives analysis, which may require that reduced contour intervals be used. See AC 150/5070-6, Paragraph 1005.		×		
10. North arrow with magnetic declination and year	Magnetic declination may be calculated at http://www.ngdc.noaa.gov/geomag-web/#declination. This model is using the latest World Magnetic Model which has an Epoch Year of 2010. See FAA Order 8260.19, Chapter 2, Section 5, for further information.	×			
C. Profile view					
1. Existing and proposed runway centerline ground profile (list elevations at runway ends & at all points of grade changes) (representing the composite profile based on the highest terrain across the width and along the length of the approach surface)	Depict the ground profile along the extended runway centerline representing the composite profile, based on the highest terrain across the width and along the length of the approach surface to where the ultimate approach surface slope is 100 feet above the threshold elevation. A more effective presentation may be a rendering of a composite critical profile.		×		

Inner Portion of the Approach Surface Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
2. Future development from plan view	Identify future development using same alphanumeric identifier that was used on the plan view.			×	
3. Part 77 Approach/transition surface; existing and future VASI/PAPI siting surface	Show the boundaries of the existing and ultimate Part 77 Approach Surface. See FAA Order 7400.2, Figure 6-3-9, See also 14 CFR Part 77.	×	×		
4. Threshold Siting Surface	Depict any applicable siting requirements pursuant to Table 3-2 of FAA AC 150/5300-13A.		×		
5. Terrain in approach area (fences, streams, etc.)	Show all significant terrain(fences, streams, mountains, etc.) within the approach surfaces, regardless of whether or not they are obstructions			×	
6. Objects – identify the controlling object (same numbers as plan view)	Show all significant objects (roads, rivers, railroads, towers, sign and power poles, etc.) within the approach surfaces, regardless of whether or not they are obstructions.	×			
	Identify the objects using same alphanumeric identifier that was used on the plan view.				
7. Cross section of road & railroad	Show the cross-section of any roads and/or railroads that cross the area shown. Indicate cross section elevations of roads and railroads at edges and extended centerlines that cross the area shown.	×			
8. Existing and proposed property and easement lines	Show the airport property boundaries, including easements, for the existing and ultimate airport configurations. AC 5300-13A Note easements for pipelines and residential through the fence gateways.	×			
D. Obstruction tables for each approach surface (surface should be identified)	A separate table for each runway end must be used to enhance information clarity.	×			
1. Object identification number	List each object by the same alphanumeric symbol used in the plan view.	×			

Inner Portion of the Approach Surface Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
2. Description	Provide a brief description of the object, e.g., Power Pole, Cell Tower, Natural Gas Flare, etc.	×			
3. Date of Obstruction Survey and Survey Accuracy	Provide the date of latest obstruction survey.		×		
4. Surface Penetrations	5300-13A For any object that penetrates the Part 77 surface, the approach surface, or the obstacle free zone, describe the vertical length the object protrudes.	×			
5. Proposed disposition of surface penetrations	Provide a proposed disposition of the object to remedy the penetration as described in item 4 above. See AC 70/7460-1 for Part 77 violations. "Removal" and/or "Lower" should be listed for any Airports safety area/zone violations. See AC 150/5300-13A, Paragraph 303 and 308.	×			
6. Object elevation	List the Above Ground Level (AGL) height and the top of object elevation in MSL for each object.	×			
7. Triggering Event (e.g., a runway extension) – Timeframe/expected date for removal	List the surface that is penetrated and the amount the object protrudes above the surface. See 14 CFR Part 77 and AC 150/5300-13A, Paragraphs 303 and 308.		×		
8. Allowable approach surface elevation (if applicable)		×			
9. Amount of approach surface penetration (if applicable)		×			
10. Proposed disposition of approach surface obstruction (if applicable)	Provide a proposed disposition of the object to remedy the penetration. See AC 70/7460-1 for Part 77 violations. "Removal" and/or "Lower" should be listed for any Airports safety area/zone violations. See AC 150/5300-13A, Paragraph 303.	×			

Inner Portion of the Approach Surface Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
11. Obstacle Free Zone (OFZ)	Determine and depict the applicable OFZ surfaces, see AC 150/5300-13A, Paragraph 308. Provide a proposed disposition of the object to remedy the penetration. Note: Modification to the OFZ standard is not permitted.	×			
E. Runway Centerline Profile	This may be shown on the Inner Portion of the Approach Surface drawing if there is space to show the runway and Runway Safety Area in sufficient detail otherwise a separate sheet may be necessary. At a minimum this drawing is to show the full length of the runway and Runway Safety Area including: runway elevations, runway and Runway Safety Area gradients, all vertical curves, and a line representing the 5’ line-of-sight. See AC 150/5300-13A, Paragraph 305.	×			
1. Scale	The vertical scale of this drawing must be able to show the separation of the runway surface and the 5’ Line-of-Sight line. See AC 150/5300-13A, Paragraph 305.	×			
2. Elevation	Show runway elevations, runway and Runway Safety Area gradients, and all vertical curve data. See AC 150/5300-13A, Paragraph 318.	×			
3. Line of Sight	The vertical scale of this drawing must be able to show the separation of the runway surface and the 5’ Line-of-Sight line. See AC 150/5300-13A, Section 305.		×		

Remarks

A.6.B.8.b OFA overlaps length of RSA and width of OFZ

A.6.C.1 Ground Profile shown is for extended runway centerline, not composite.

A.6.C.3. No VASI/PAPI siting surface shown

A.7. Runway Departure Surface Drawing

- Required where applicable. For each runway that is designated for instrument departures.
- This drawing depicts the applicable departure surfaces as defined in Paragraph 303 of FAA AC 150/5300-13A. The surfaces are shown for runway end(s) designated for instrument departures.
- 40:1 for Instrument Procedure Runways (Scale, 1” = 1000’ Horizontal, 1” = 100’ Vertical, Out to 10,200’ beyond Runway threshold) 62.5:1 for Commercial Service Runways (Scale, 1” = 2000’ Horizontal, 1” = 100’ Vertical, Out to 50,000’ beyond Runway threshold).
- Contact the FAA if the scale does not allow the entire area to fit on a single sheet. The depiction of the One Engine Inoperative (OEI) surface is optional; it is not currently required.

Runway Departure Surface Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Title and Revision Blocks	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	×			
B. Plan view (existing & future)	See AC 150/5300-13A, Paragraph 303(c).	×	×		
1. Aerial Photo for base map	Use an aerial photograph for the base map. A USGS 7.5 minute series map is also acceptable.	×			
2. Runway end numbers and elevations (nearest 1/10 of a foot)	Show the existing and ultimate runway end, runway number, and the elevation of the threshold center. For runways that have a clearway, depict this surface and the relocated departure surface. Reference AC 150/5300-13A, Paragraph 303(c)(1).	×			
3. 50’ elevation contours on sloping surfaces (NAVD88)	Show contour lines on the Part 77 imaginary surfaces. See 14 CFR Part 77.19.	×			
4. Depict property line, including easements	Show the property line(s) that are within the area/portion of airport shown.	×			
5. Identify, by numbers, all traverse ways with elevations and computed vertical clearance in the departure surface	Identify all significant objects (roads, rivers, railroads, towers, poles, etc.) within the departure surfaces, regardless of whether or not they are obstructions using unique alphanumeric characters.	×			

Runway Departure Surface Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
6. Ground contours	Show ground contour lines in 2', 5', or 10' intervals. Topographic issues may be important in the alternatives analysis, which may require that reduced contour intervals be used.		×		
C. Profile view (existing & future)		×	×		
1. Ground profile	Depict the ground profile along the extended runway centerline representing the composite profile, based on the highest terrain across the width and along the length of the departure surface to extents of the surface dimensions.	×			
2. Significant objects (bluffs, rivers, roads, buildings, fences, structures, etc.)	Show all significant objects (roads, rivers, railroads, towers, poles, etc.) within the approach surfaces, regardless of whether or not they are obstructions using an alphanumeric character.	×			
3. Identify obstructions with numbers on the plan view	Identify the objects using same alphanumeric identifier that was used on the plan view.	×			
4. Show roads and railroads with dashed lines at edge of the departure surface	Show the cross-section of any roads and/or railroads that cross the area shown.	×			
D. Obstruction Data Tables					
1. Object identification number	Identify all significant objects (roads, rivers, railroads, towers, poles, etc.) within the departure surfaces, regardless of whether or not they are obstructions using unique alphanumeric characters. List each object by the same alphanumeric symbol used in the plan view.	×			
2. Description	Provide a brief description of the object, e.g., Power Pole, Cell Tower, Tree, Natural Gas Flare, etc.	×			
3. Object Elevation	List the Above Ground Level (AGL) height and the top of object elevation in MSL for each object.	×			

Runway Departure Surface Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
4. Amount of surface penetration	List the object protrudes above the departure surface. See AC 150/5300-13A, Paragraph 303(c).	×			
5. Proposed or existing disposition of the obstruction	Provide a proposed disposition of the object to remedy the penetration. See AC 150/5300-13A, Paragraph 303(c).	×			
6. Separate table for each departure surface	A separate table for each runway end must be used to enhance information clarity.		×		

Remarks

Departure Surfaces shown on Airspace Profiles and Inner Portion of Approach Plan and Profiles (Not Separate drawings)

A.8. Terminal Area Drawing

- Scale 1"=50' or 1"=100'. Plan view of aprons, buildings, hangars, parking lots, roads.
- This plan consists of one or more drawings that present a large-scale depiction of areas with significant terminal facility development. Such a drawing is typically an enlargement of a portion of the ALP. At a commercial service airport, the drawing would include the passenger terminal area, but might also include general aviation facilities and cargo facilities. See AC 150/5300-13A, Appendix 5.
- Use scale that allows the extent of the terminal/FBO apron area to best fit the chosen sheet size, e.g., typical GA airports may be able to use 1"=50' scale on a 22" X 34" sheet, but a complex hub airport with multiple terminal areas may require a 1"=100' scale on a 36" X 48" sheet. Contact FAA if an airport layout requires scaling or sheet sizing other than what is listed.
- This drawing is not needed at every airport type and is therefore optional.

Terminal Area Drawing					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
A. Title and Revision Blocks	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	×			
B. Building data table	All buildings on the Airport Layout Drawing should be identified by an alphanumeric character. List these identifiers in a table and give a description of the building. If no Terminal Area drawing is done, also include the top of structure elevation in MSL.	×			
1. Structure identification number		×			
2. Top elevation of structures (AMSL)			×		
3. Obstruction marking/lighting (existing/future)	Show the location of existing and ultimate hangars. Include dimensions of apron and distance from runway and taxiway centerlines. See AC 150/5300-13A, Appendix 5. Show the elevation of the highest point of each structure.		×		
C. Buildings to be removed or relocated noted	If any of the structures violate any airport or approach surfaces give an ultimate disposition to remedy the violation.			×	
D. Fueling facilities, existing and future	Show the location of existing and ultimate fueling facilities. Include dimensions of apron and distance from runway and taxiway centerlines.	×	×		

Terminal Area Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
E. Air carrier gates positions shown (existing/future)	Show the existing and ultimate air carrier gate positions. See AC 150/5300-13A, Chapter 5.			×	
F. Existing and future security fencing with gates	Show the existing and ultimate security fencing and gates. See AC 150/5300-13A, Paragraph 606.		×		
G. Building restriction line (BRL)	Show the Building Restriction Line (BRL) that is within the area/portion of airport shown. The BRL identifies suitable building area locations on airports. This should be located where the Part 77 surfaces are at 35' above the airport elevation unless a different height is coordinated with the FAA. See AC 150/5300-13A, Paragraph 213(a).		×		
H. Taxiway or Taxilane centerlines designated	Show centerlines of all taxiway and taxilanes within the area/portion of airport shown.		×		
I. Dimensions					
1. Clearance Dimensions between runway, taxiway, and taxilane centerlines and hangars, buildings, aircraft parking, and other objects.	Show the location of existing and ultimate apron. Include dimensions of apron and distance from runway and taxiway centerlines. Apron should be sized using activity forecast and the apron design spreadsheet. See AC 150/5300-13A, Chapter 5 and FAA Engineering Brief No. 75.		×		
2. Dimensions of aprons, taxiways, etc. Apron/Hangar areas that do not meet dimensional standards of the critical aircraft should be identified and the wingspan/design group of the aircraft that can use that area depicted.	Show the dimensions between existing and ultimate runway, taxiway, and taxilane centerlines and existing and ultimate hangars, buildings, aircraft parking, and other fixed or movable objects. See AC 150/5300-13A, Chapter 3 and Chapter 4.		×		
Include tie down location with clearances	Show proposed tie-down layout on the apron area as well as taxilane marking plan. See AC 150/5300-13A, Appendix 5, AC 20-35, and AC 150/5340-1.				
J. Property Line	Show the property line(s) that are within the area/portion of airport shown.	×			

Terminal Area Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
K. Auto parking (existing & ultimate)	Show the existing and ultimate auto parking areas. See AC 150/5300-13A, Appendix 5.	×	×		
L. Major airport drainage ditches or storm sewers	Show any significant airport drainage ditches or storm sewers within the area/portion of airport shown.			×	
M. Special Use Area (e.g., Agricultural spraying support, Deicing, or Containment)	Show any special use areas within the area/portion of airport shown.			×	
N. North Arrow with magnetic declination and year	Magnetic declination may be calculated at http://www.ngdc.noaa.gov/geomag-web/#declination. This model is using the latest World Magnetic Model which has an Epoch Year of 2010. See FAA Order 8260.19, "Flight Procedures and Airspace." Chapter 2, Section 5, for further information.		×		
O. Fence	Show the existing and ultimate perimeter fencing or general area fencing.		×		
P. Entrance Road	Show the existing and ultimate entrance road. See 5300-13AFAA Order 5100.38, Chapter 6, Section 2.	×			

Remarks

A.8.D. Existing fuel farm shown. Dimensions not shown.
A.8.G. BRL shown on ALP
A.8.H. Taxiway Centerline markings not visible on aerial. Taxiway designations are identified with labels.
A.8.I. Dimension details in master plan
A.8.K. Parking areas visible on aerial but not labeled

A.9. Land Use Drawing

- Scale 1"=200' to 1"=600'.
- A drawing depicting on- and off-airport land uses and zoning in the area around the airport. At a minimum, the drawing must contain land within the 65 DNL noise contour. For medium or high activity commercial service airports, on-airport land use and off-airport land use may be on separate drawings. The Airport Layout Drawing should be used as a base map.
- Drawing optional. Need based on scope of work.

Land Use Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Title and Revision Blocks	Each drawing in the Airport Layout Plan drawing set shall have a Title and Revision Block. For drawings that have been updated, e.g., as-builts, the revision block should show the current revision number and date of revision.	×			
B. Airport boundaries/property, existing & future (fee and easement)	Show the existing and ultimate property lines. If known, show property lines for parcels surrounding the airport.	×			
C. Plan view of land uses by category (Agricultural, Aeronautical, Commercial, Residential, etc.). Use local land use categories.					
1. On-Airport (existing & future)	Label existing and ultimate on-airport property by usage, e.g., Terminal Area, Air Cargo, Public Ramp, Airfield - Movement, Airfield - Non-movement, etc. Include existing and future airport features (e.g., runways, taxiways, aprons, safety areas/zones, terminal buildings and navigational aids).	×			
2. Off-Airport (existing & future) [to the 65 DNL Contour at a minimum, if contour known]	Label existing and ultimate off-airport property by usage and zoning, e.g., Agricultural, Industrial, Residential, Commercial, etc.	×			
D. Boundaries of local government	List any local zoning restrictions that are in place to protect the airport and surrounding airspace. See AC 150/5190-4.	×			
E. Land use legend	Provide a legend that identifies all symbols and line types used on the drawing. Lines must be clear and readable with sufficient scale and quality to discern details.	×			

Land Use Drawing					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
F. Public facilities (schools, hospitals, parks, churches etc.)	Identify public facilities, e.g., schools, parks, etc.			×	
G. Runway visibility zone for intersecting runways	Show the Runway Visibility Zone(s) for the existing and ultimate airport configurations. See AC 150/5300-13A, Section 305.			×	
H. Show off-airport property out to 65 DNL if available	Label existing and ultimate off-airport property by usage and zoning, e.g., Agricultural, Industrial, Residential, Commercial, etc.	×			
I. Airport Overlay Zoning or Zoning Restrictions	List any local zoning restrictions that are in place to protect the airport and surrounding airspace. See AC 150/5190-4.		×		
J. North arrow with magnetic declination and year	Magnetic declination may be calculated at http://www.ngdc.noaa.gov/geomag-web/#declination. This model is using the latest World Magnetic Model which has an Epoch Year of 2010. See FAA Order 8260.19, "Flight Procedures and Airspace." Chapter 2, Section 5, for further information.	×			
K. Drawing details to include runways, taxiways, aprons, RPZ, terminal buildings and NAVAIDS	Show existing and future airport features (e.g., runways, taxiways, aprons, safety areas/zones, terminal buildings and navigational aids, etc.). See AC 150/5300-13A.	×			
L. Crop Restrictions	Show the Crop Restriction Line (CRL). See AC 150/5300-13A, Paragraph 322 and AC 150/5200-33.			×	
Remarks					

A.10. Airport Property Map / Exhibit A

- Scale 1”=200’ to 1”=600’.

Airport Property Map / Exhibit A					
Item	**Instructions**	**Sponsor/Consultant**			**FAA**
		Yes	**No**	**N/A**	
A. Will Property Map serve as Exhibit A? – **If YES,** follow the directions to the right. – **If NO,** go to item B below.	If prepared in accordance with AC 150/5100-17, Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects, use ARP SOP no. 3.00 Exhibit A guidance instead of below checklist.	×			
If Property Map *will not* serve as Exhibit A:					
B. Title and Revision Blocks					
C. Plan view showing parcels of land (existing, future, and ultimate)					
1. Fee land interests (existing and future)					
2. Easement interests (existing and future)					
a. Part 77 protection					
b. Compatible Land Use					
c. RPZ protection					
3. Airport Property Line					
D. Legend – shading/cross hatching, survey monuments, etc.					
E. Data Table					
1. Depiction of various tracts of land acquired to develop airport	If any obligations were incurred as a result of obtaining property, or an interest therein, they should be noted. Obligations that stem from Federal grant or an FAA-administered land transfer program, such as surplus property programs, should also be noted. The drawing should also depict easements beyond the airport boundary.				

Airport Property Map / Exhibit A					
Item	Instructions	Sponsor/Consultant			FAA
		Yes	No	N/A	
2. Method of acquisition or property status (fee simple, easement, etc.)					
3. Type of Acquisition Indicated	(e.g., AIP-noise, AIP-entitlement, PFC, surplus property, local purchase, local donation, condemnation, other)				
4. Acreage					
F. Access point(s) for through-the-fence arrangements including residential					
Remarks					

APPENDIX B. EXHIBIT 'A' REVIEW CHECKLIST

Checklist	Sponsor/Consultant			FAA
Review Item	**Yes**	**No**	**N/A**	**Agree**
1. Existing Dedicated Airport Property Boundary Line identified. This can consist of a combination of fee interest, easements and/or leases. It may include lands that are not contiguous with the airport boundary. Identify source of base map data.	×			
Airports Specialist Comments:				
2. All the airport property parcels are shown and have a unique designation. Parcels with designations from previous Exhibit 'A's should not be changed. However, a new system of designations may be used for new and future property acquisitions. Parcel designations must be consistent with grant descriptions.	×			
Airports Specialist Comments:				
3. Each segment of a parcel's boundary is described in some manner. Metes and bounds, township/range/section, lot and block, plat or other appropriate property description (may be an attachment to the Exhibit 'A' plan sheet or checklist). Points of reference may also be included to further describe the parcel.	×			
Airports Specialist Comments:				
4. Parcels that were once airport property are shown. The date they were released from federal obligations by the FAA and the date of disposal must be included.			×	
Airports Specialist Comments:				
5. Parcel information includes: (often in table format)				
a. Grantor (selling owner) b. Type of interest acquired (fee simple, easement, etc.) c. Acreage d. Type of conveyance instrument e. Liber/book and page of recording	×			
Airports Specialist Comments:				
6. Each airport property parcel shows: (often in table format)				
a. FAA grant number, including year if acquired under a grant b. PFC Project Number if acquired with Passenger Facility Charge funds (recommended) c. Surplus Property Transfer, Government Land Transfer or other statutory federal agreements/conditions. See FAA Order 5010.4 and form 5010-1 Data Element #25 for additional information. d. Type of easement (clearing, avigation, utility, right of way, expiration date, easement held by others, subordination agreement, etc.)	×			

Checklist	Sponsor/Consultant			FAA
Review Item	**Yes**	**No**	**N/A**	**Agree**
e. Date and type of release/land use change approval (aeronautical use, interim use, concurrent use, etc.). This can also include any release from federal obligations such as a release from the National Emergency Use Provision (NEUP), mineral rights, liens, residential through-the-fence access agreements, etc.			✕	
f. Date of property disposal				
g. Public land references, if applicable (PIN #/Assessors #, date of recording, book and page, etc.)				
h. Any known encumbrances on the property				
Airports Specialist Comments:				
7. Purpose of acquisition (current/future development, concurrent use, noise, revenue production, etc.), often in table format. Interim use can be identified with an attached reference.	✕			
Airports Specialist Comments:				
8. The plan shows the following for both existing and future configurations based upon the approved Airport Layout Plan:				
a. Runway Protection Zones (RPZ)	✕			
b. Runways	✕			
c. Runway Safety Areas (RSA)		✕		
d. Runway Object Free Areas (OFA)		✕		
e. Taxiways	✕	✕		
f. Other airport design surfaces (as necessary, must maintain a legible map)		✕		
g. Road/railroad right-of-ways	✕	✕		
h. Bearing and distance of airport property lines		✕		
Airports Specialist Comments:				
9. North arrow, legend and graphic/numerical scale is shown	✕			
Airports Specialist Comments:				
10. If the Exhibit ‘A’ is being submitted as part of a land acquisition project, the parcels being acquired are shown			✕	
Airports Specialist Comments:				
11. Title block clearly labeled as Exhibit “A” Airport Property Inventory Maps and dated	✕			
Airports Specialist Comments:				
12. Revision block/table, Sponsor approval block, Preparer’s block, dated	✕			

Checklist	Sponsor/Consultant			FAA
Review Item	**Yes**	**No**	**N/A**	**Agree**
Airports Specialist Comments:				
13. Understandable and legible legend, including all linetypes and symbols used	✕			
Airports Specialist Comments:				
14. Parcel table is legible	✕			
Airports Specialist Comments:				

Provide an explanation for any checklist item marked ‘No’.

8 – For clairity: ROFA, RSA, and other design surfaces not shown (see ALP), future taxiways not shown (see ALP), road and railroad right-of-ways not shown, airport property line bearings and distances not shown – property described by metes and bounds.

Accepted By: ____ Date: Click here to enter a date.

Airports Specialist

APPENDIX H

County Resolution – Master Plan Approval

DOÑA ANA COUNTY RESOLUTION NO 2018-21

Approving the Multi-Modal Airport Master Plan Airport Layout Plan and submit it for Federal Aviation Administration (FAA) approval

BY THIS RESOLUTION, the Board of County Commissioners of Doña Ana County hereby adopt and approve the Master Plan Airport Layout Plan for long term development of the Jetport and forward it to the FAA for their approval.

WHEREAS, Runway 10-28 cannot be extended beyond the current length of 9,550 feet due to site constraints and the Air Cargo Study and Master Plan Study indicate a strong potential demand for air cargo activity and growing corporate jet activity of aircraft weighing up to 95,000 lbs., and

WHEREAS, Doña Ana County International Jetport Runway 10-28 has inadequate wind coverage of 89.44%. FAA supports the planning and development of a crosswind runway when wind coverage is less than 95%, and

WHEREAS, A crosswind runway with an alignment of 030-210 degrees will provide an estimated wind coverage 96.66% of the time at 13 knots, and a combined two-runway coverage of 99.17% of the time, and

WHEREAS, The crosswind runway to be built in stages with the first stage length of 6,400 feet long and 100 feet wide with strength for aircraft up to 95,000 lbs. The ultimate length of 12,000 feet long and 150 feet wide and protection for a precision instrument approach on Runway 21.

IT IS HEREBY RESOLVED, by the Board of County Commissioners that the Doña Ana County International Jetport adopt Airport Layout Plan for long term planning.

IT IS FURTHER RESOLVED that the County Manager is delegated the authority to execute the Airport Layout Plan documents and to make, approve and execute such other further changes to the language as may be required by the FAA for approval.

AND IT IS FURTHER RESOLVED, the Airport Layout Plan, when approved by the FAA, will supersede and replace the Doña Ana County Airport at Santa Teresa, Airport Master Plan and Airport Layout Plan dated March 2008.

RESOLVED and APPROVED this 27th day of February, 2018.

BOARD OF COUNTY COMMISSIONERS OF DOÑA ANA COUNTY, NEW MEXICO

Benjamin L. Rawson

Benjamin L. Rawson, Chair, District 3 — For / Against

Billy G. Garrett, District 1 — For / Against

Ramon S. Gonzalez, District 2 — For / Against

Isabella Solis, District 4 — For / Against

Vacant, District 5 — For / Against

COUNTY COMMISSIONERS DOÑA ANA COUNTY NEW MEXICO SEAL

ATTEST:

Scott A. Krahling
County Clerk

STATE OF NEW MEXICO COUNTY CLERK DOÑA ANA COUNTY

AIRPORT LAYOUT PLAN

AIRPORT DATA TABLE

AC 150/5300-13A, change 1	Existing	Ultimate
Airport Reference Code (ARC)	C-II	C-IV
Area Maximum Temperature		
Airport Elevation (feet AMSL)	4113	4124
Airport Navigational Aids	Beacon	Beacon, MALSR (RW 21)
AIRPORT REFERENCE POINT		
N Latitude	31° 52' 49.62"	31° 53' 36.74"
W Longitude	106° 42' 11.68"	106° 42' 23.37
Miscellaneous Facilities	U.S. Customs, PAPI, REIL, lighted primary windcone, supplemental windcones, Segmented Circle, MITL	SAME
Critical Aircraft	Gulfstream 280	Boeing 767
Magnetic Variation (6/6/2017)	8° 18' E ± 0° 20' changing by 0° 6' W per year	
NPIAS Role/Service Level	Regional/GA	
State Equivalent Service Role	Regional General Aviation	SAME
Vertical Datum	NAVD 88	
Horizontal Datum	NAD 83	
USGS Quadrangle	La Union	
Township/Range	Township 28S/ Range 2E	
CBD to Airport	4 mi NW Santa Teresa, NM	
Airport Acreage	1707.327	3078
Airport Ownership	Public	
Flight Service Station	Albuquerque	
Sectional Chart Coverage	El Paso Chart	
Low Altitude	L-6N	
UNICOM Frequency	122.725	
AWOS Freq/Phone	124.175/575-589-2643	

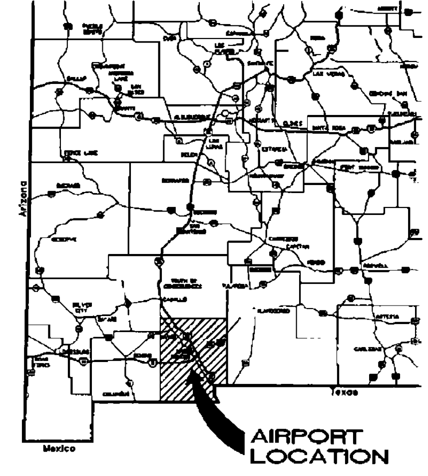
TAXIWAY DATA TABLE

Note: The taxiway system was designed and constructed to AC 150/5300-13 standards of "judgmental oversteering". The below tables are the requirements based on AC 150/5300-13A reflecting "cockpit over centerline" steering.

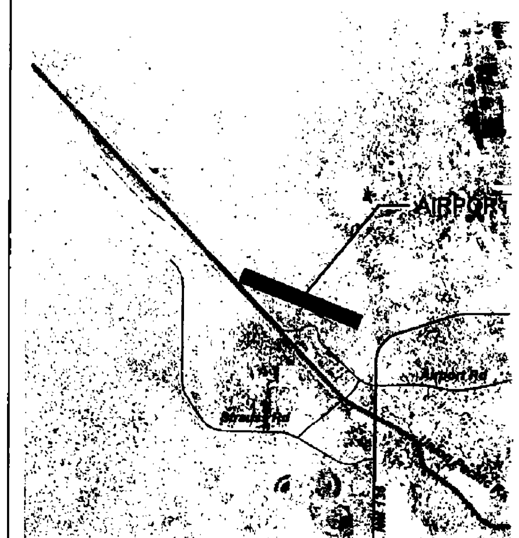
Note: taxiway design standards are based on the ADG and TDG

AC 150/5300-13A, change 1						
Taxiway	A, A connectors to RW 10-28, C		B, D, new hangar area taxiways		TWs associagted with RW 3-21 (initial construction to ultimatde standards)	
	Existing	Ultimate	Existing	Ultimate	Initial	Ultimate
Critical Aircraft	Gulstream 280	Boeing 737	Citation X	Citation X	Boeing 767	same
Taxiway Design Group (TDG)	2	3	2	same	5	same
Airplance Design Group	II	III	II	same	IV	same
Runway Centrerline to Parallel Taxiway/Taxilane Centerline	445 existing south		N/A		400	
Nominal Taxiway Width	varies 35 - 75	same	35	same	75	same
Taxiway Edge Safety Margin (TESM)	7.5	10	7.5	same	15	same
Taxiway Shoulder Width	15	10	15	same	30	same
Taxiway Safety Area (TSA)	79	118	79	same	171	same
TSA at curve and intersection (from pavement edge)	22	22	22	same	48	same
Taxiway Object Free Area (TOFA)	131	189	131	same	259	same
TOFA at curve and Intersection (from pavement edge)	47.8	67.6	47.8	same	92.2	same
Taxilane Safety Area (TLSA)	79	118	79	same	171	same
TLSA at curve and intersection (from pavement edge)	22	34	22	same	48	same
Taxilane Object Free Area (TLOFA)	115	162	115	same	225	same
TLOFA at curve and intersection (from pavement edge)	47.8	37.6	47.8	same	92.2	same
Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	106	152	106	same	215	same
Taxiway Centerline to Fixed or Moveable Object	65.5	93	65.5	same	129.5	same
Taxilane Centerline to Parallel Taxilane Centerline	97	140	97	same	198	same
Taxilane Centerline to Fixed or Moveable Object	57.5	22	57.5	same	112.5	same
Taxiway Wingtip Clearance	26	34	26	same	44	same
Taxilane Wingtip Clearance	18	27	18	same	27	same
Paved or Unpaved shoulders	Unpaved	Paved	Unpaved	same	Paved	same
Taxiway and Taxilane Separation	No objects In TSA or TOFA					
Taxiway Lighting	MITL		None	Reflectors	MITL	
Taxiway Marking	Centerline/Edge		Centerline		Centerline/edge	

INDEX OF SHEETS



LOCATION MAP



LOCATION & VICINITY M.

MODIFICATION TO STANDARDS TABLE

AC 150/5300-13A, change 1

		Approval Date	ASN	Standard to be Modified	Description
MOS-1	Runway 10-28 east end longitudional gradient	4/26/2017	NA	AC 150/5300-13A, change 1, paragraph 313b(1), (2), and (3); Figure 3-22	Longitudional grade 1st 1/4 of runway 28. Cannot meet criteria without reconstruction of the first 1,050'.
MOS-2	Runway 10 Runway Protection Zone (RPZ)	5/5/2017	NA	AC 150/5300-13A, paragraph 310 and APP-1 memo September 27, 2012 "Interim Guidance on Land Uses Within a Runway Protection Zone"	Arrival and departure RPZ overlaps low volume public road by 0.44 acre.

PREPARED BY: BOHANNAN HUSTON, INC.
DATE: ____________

SUBMITTED BY. DONA ANA COUNTY, NEW MEXICO

APPROVAL

____

DATE: ____________

FAA REVIEWED UNDER ASN ----

FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGION

APPROVAL

APPROVED SUBJECT TO CONDITIONS/COMMENTS IN LETTER DATED ____________

DATE ____________ MANAGER, LOUISIANA/NEW MEXICO ADO

Bohannan Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM

ENGINEERING • SPATIAL DATA • ADVANCED TEC

DRAFT	SHEET NO 1

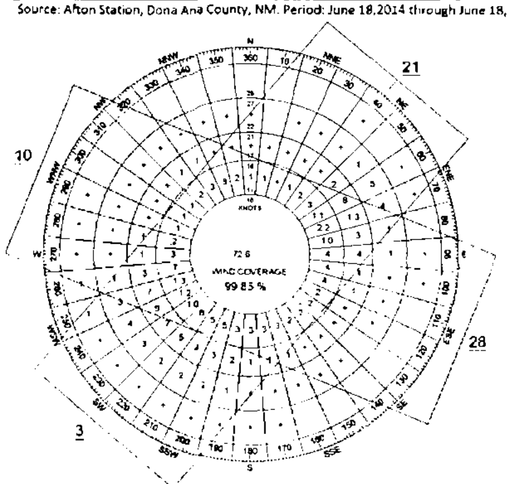
					None		Grooved	
[illegible]	[illegible]				0.11%		0.05%	
Maximum Runway Gradient (%)	0.03%		0.03%		0.16%		0.05%	
Line of Sight criteria met	305.b(2) and end to end		305.b(2) and end to end		305.b(2) and end to end		305.b(2)	
Individual Runway Percent Wind Coverage	83.73% at 10.5 knots 89.44% at 13 knots 94.58% at 16 knots 98.23% at 20 knots		same		92.85% at 10.5 knots 86.66% at 13 knots 99.09% at 16 knots 99.83% at 20 knots		same	
Existing Combined Wind Coverage with ultimate two runways	83.73% at 10.5 knots 89.44% at 13 knots 94.58% at 16 knots 98.23% at 20 knots		97.60% at 10.5 knots 99.17% at 13 knots 99.85% at 16 knots 99.99% at 20 knots		97.60% at 10.5 knots 99.17% at 13 knots 99.85% at 16 knots 99.99% at 20 knots		same	
Ultimate Combined Wind Coverage	99.9% at 16 knots		99.9% at 16 knots		99.9% at 16 knots		99.9% at 16 knots	
Runway Length	9550		9550		6400		12000	
Runway Width	100		100 (AC Table 3-5 note 12)		100		150	
Runway High Point	4112.8		4112.8		4124		4124	
NAVAIDs	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone	PAPI-4L, REIL, Sup. Windcone
Touchdown Zone Elevation	4111.3	4109.8	4111.3	4109.8	4119.0	4124.0	4119.0	4115.0
Runway Safety Area (RSA)								
RSA Length beyond departure end	1000		SAME	SAME	6400		SAME	
RSA Length prior to threshold	9558		SAME	SAME	600	600	SAME	SAME
RSA Width	500		500		500/400 permissible, note 13		500	
Runway End Coordinates								
N Latitude	31° 53' 07.15"	31° 52' 32.08"	SAME	SAME	31° 53' 28.04"	31° 54' 19.65"	SAME	31° 55' 0.46"
W Longitude	106° 43' 03.09"	106° 41' 20.275"	SAME	SAME	106° 43' 19.96"	106° 42' 31.15"	SAME	106° 41' 52.57"
Runway Threshold Elevation	4111.3	4109.8	SAME	SAME	4114.0	4121.0	SAME	4108.0
Displaced Threshold End Coordinates								
N Latitude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
W Longitude	N/A	N/A	N/A	N/A	N/A	600	N/A	N/A
Displaced Threshold Elevation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Runway Lighting Type	MIRL		MIRL		MIRL		HIRL	
Approach Runway Protection Zone (RPZ)								
Approach RPZ Length	1700	1700	SAME	1700	1700	1700	SAME	2500
Approach RPZ Inner Width	500	N/A	SAME	1000	500	1000	SAME	1700
Approach RPZ Outer Width	1010	1700	SAME	1510	1700	1700	SAME	1750
Approach RPZ Acres	29.465	29.465	SAME	48.978	29.465	48.978	SAME	78.914
Departure Runway Protection Zone (RPZ)								
Departure RPZ Length	1700	1700	SAME	SAME	1700	1700	SAME	SAME
Departure RPZ Inner Width	500	500	SAME	SAME	500	500	SAME	SAME
Departure RPZ Outer Width	1010	1010	SAME	SAME	1700	1010	SAME	SAME
Departure RPZ Acres	29.465	29.465	SAME	SAME	29.465	29.465	SAME	SAME
Runway Marking Type	NPI	VISUAL	SAME		NPI	NPI	SAME	PIR
14 FAR Part 77								
Approach Category	Runway Larger Than Utility - Non-precision Instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Non-precision instrument approach with visibility minimums as low as three-fourths of a statute mile	Runway Larger Than Utility - Non-precision Instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Non-precision instrument approach with visibility minimums as low as three-fourths of a statute mile	Runway Larger Than Utility - Non-precision Instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Non-precision instrument approach with visibility minimums as low as three-fourths of a statute mile	Runway Larger Than Utility - Non-precision instrument approaches (>3/4 mile visibility)	Runway Larger Than Utility - Precision instrument runways
		B	C	D		D	C	D
Approach Type	NPI 1 mile	Visual	SAME	NPI 3/4 Mile	NPI 1 mile	NPI 3/4 Mile	SAME	PIR 1/2 Mile
Primary Surface Width	1000		1000		1000		1000	
Primary Surface Length	9950		9950		6800		12400	
Approach Surface Width at End	3500	1700	3500	4000	3500	4000	3500	16000
Approach Surface Length	10000	10000	SAME	SAME	10000	10000	SAME	10000/40000
Approach Surface Slope	34:1	34:1	34:1	34:1	34:1	34:1	34:1	50:1 then 40:1
Horizontal Surface Radius	10000	10000	10000	10000	10000	10000	10000	10000
Horizontal Surface elevation	4263		4274 with RW 3-21 construction		4274		4274	
Visibility Minimums	1 mile	Visual	SAME	3/4 mile	1 mile	3/4 mile	SAME	1/2 mile
Type of Aeronautical Survey Required	NVGS	NVGS	NVGS	NVGS	NVGS	NVGS	NVGS	VGS
Runway Departure Surface	No	No	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1	No	No	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1	Yes, initial width: 1,000', length from runway threshold: 10,200', outer width: 6,466', slope: 40:1
Runway Object Free Area (ROFA)								
ROFA Length beyond departure end	1000	1000	SAME	SAME	1000	1000	SAME	SAME
ROFA Length prior to threshold	600	600	SAME	SAME	600	600	600	600
ROFA Width	800		SAME		800		SAME	
Runway Obstacle Free Zone (ROFZ)								
ROFZ Length	9950		9950		6800		12400	
ROFZ Width	400		SAME		400		SAME	
Inner-approach OFZ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Applies, see AC paragraph 308.b for dimensions
Inner-transitional OFZ	n/a		n/a		n/a		IT OFZ	

Category B aircraft Category B aircraft. but < 1.6 cm), Category B aircraft. statute mile (1.2 km).

Dimensions ↓\ Table line number →	5	3	5	6	5	6	5	7
A	200	0	200	200	200	200	200	200
B	800	400	800	800	800	800	800	800
C	3800	1000	1800	3800	3800	1800	3800	1800
D	10000	1500	10000	10000	10000	10000	10000	10000
E	0	8500	5	0	0	0	0	0
Slope/ OCS	20:1	20:1	20:1	20:1	20:1	20:1	20:1	34:01:00
Notes	See Table 3-2 notes 1 and 2	See Table 3-2 note 2	See Table 3-2 notes 1 and 2	See Table 3-2 note 2	See Table 3-2 notes 1 and 2	See Table 3-2 note 2	See Table 3-2 notes 1 and 2	See Table 3-2 note 2
		7	5					
Objects penetrating the surface	None	None	None	None	None	None	None	None
Visual and Instrument NAVAIDS	REIL, PAPI-2L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L	REIL, PAPI-4L, MALSR
	7	[illegible]				7	7	7
Shoulder Width	20		20 note 12		10		10	
Paved shoulders	not required		Recommended		not required		Required	
Shoulder surface	Base Course		Base Course		TBD		TBD	
Blast Pad Width	140		140 note 12		120		200	
Blast Pad Length	200		200		150		200	
Blast Pad Surface	PMBP		PMBP		TBD		TBD	
Crosswind Component	16 knots		16 knots		16 knots		16 knots	
Precision Obstacle Free Zone (POFZ) Length	n/a	n/a	n/a	n/a	n/a		n/a	
Precision Obstacle Free Zone (POFZ) Width	7	n/a	n/a	n/a	n/a	n/a	n/a	800
				5	5		5	
DECLARED DISTANCE TABLE		5						
Take-Off Run Available (TORA)	9550	9550	9550	9350 for 40:1 Departure Surface 9550 without Departure Surface	9550	6400	12000	12000
Take-Off Distance Available (TODA)	9550	9550	9550	9350 for 40:1 Departure Surface 9550 without Departure Surface	9550	9550	12000	12000
Accelerate Stop Distance Available (ASDA)	9550	9550	9550	9550	6400	6400	12000	12000
Landing Distance Available (LDA)	9550	9550	9550	9550	6400	6400	12000	12000
		5						
Instrument Approach Procedures	RNAV GPS 1 mile	None	RNAV GPS 1 mile	PIR 3/4 mile	RNAV GPS 1 mile	PIR 3/4 mile	RNAV GPS 1 mile	PIR 1/2 mile
	5			5	5		5	
Runway Separation to			7		7			
Parallel Runway centerline	NA		NA		NA		NA	
Holding Position	290		292		250		292	
Note:	Existing		elevation adjustment, AC note 8				elevation adjustment, AC note 8	
Parallel Taxiway/Taxilane centerline	445 Existing		445 Existing south of RW 10-28, 300 north of RW 10-28		400 for ultimate development		400	
Distance RW centerline to clear tail height (ROFZ)	200		200		200		364.4	
Greatest Runway to Taxiway distance	200		440 south/300 north				200	
Aircraft parking area	400		200		400		400	
Helicopter Touchdown Pad			400			7	7	7
Small Helicopter 7,000 lbs or less	400		500		500		200	
Medium Helicopter 7,001 to 12,500 lbs	500		200		200		200	
Large Helicopter over 12,500 lbs	700		700		700		700	
Building Restriction Line (35' height) from runway centerline	745		745		745		745	
					5			
Inner-transitional OFZ				5	200		5	
ILS Type (from input)	none	None	none	none	none	none	none	none
CAT-I								
H	n/a	n/a	n/a	n/a	n/a	n/a	n/a	32.6
				5				
CAT-II/III				7			7	
H	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Y	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		5						
CAT-I/CAT-II/III Inner-transitional OFZ distance to clear ADG tail height. Assumes taxiway is at same elevation as runway.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Building Restriction Line (35')					n/a	7	7	
Distance from Runway centerline	500		745		200		745	

Combined R10-28 & R3-21	97.07%	99.17%	99.85%	99.99%

Source: Afton Station, Dona Ana County, NM. Period: June 18,2014 through June 18, 2016.



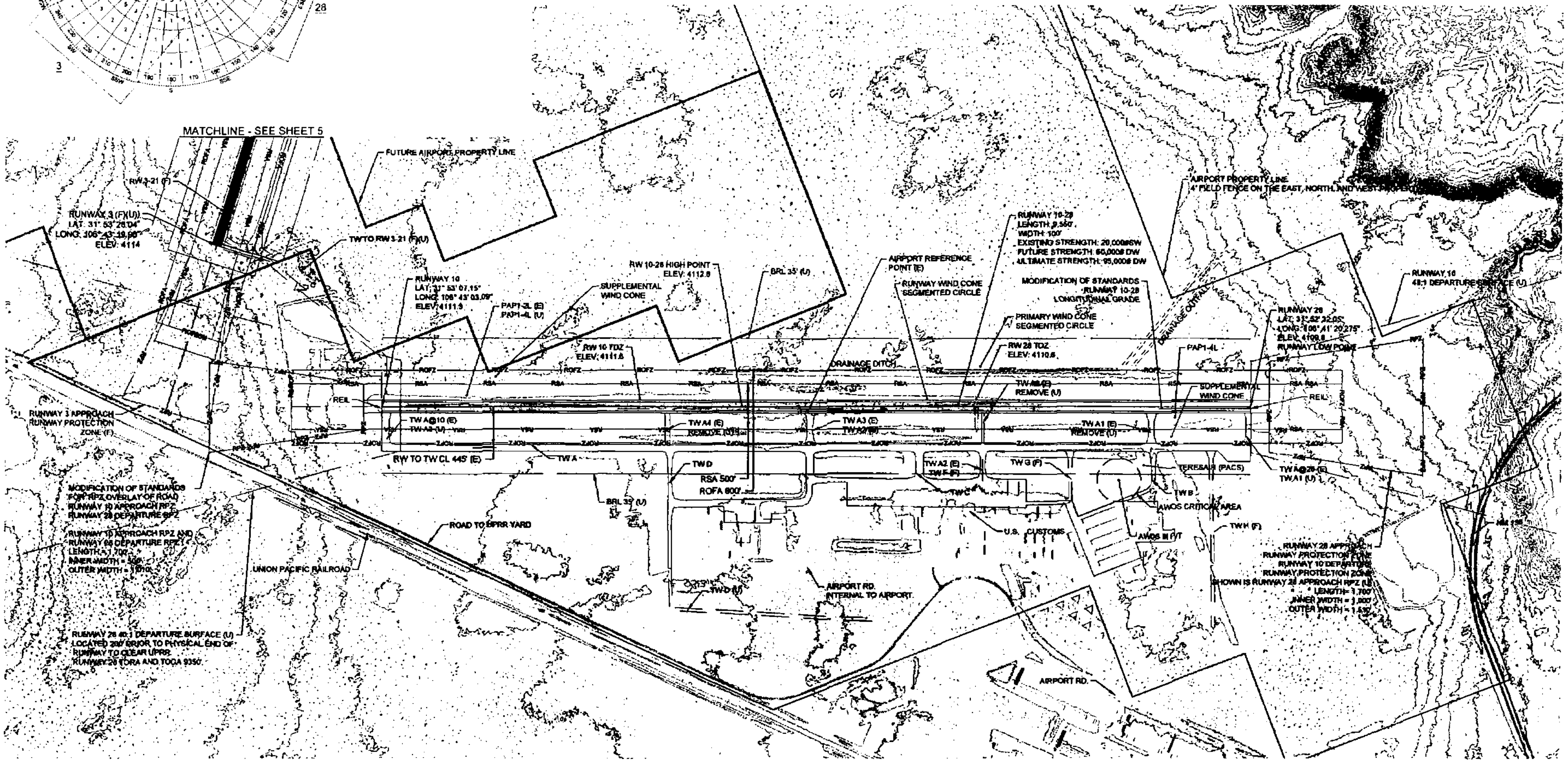
400'

RUNWAY OBSTACLE FREE ZONE (OFZ)
RUNWAY 3-21 INITIAL AND ULTIMATE
RUNWAY 10-28 EXISTING, INTERMEDIATE AND ULTIMATE

8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR 08-10-2017

600 300 0 600
1"=600'

NOTES:
1. SEE PART 77 DRAWING FOR ROAD AND RAILROAD INTERSECTION OF PART 77 APPROACH SURFACES.
2. SEE SHEET XX FOR DEVELOPMENT NORTH OF RUNWAY 10-28
3. SEE SHEET XX FOR DEVELOPMENT SOUTH OF RUNWAY 10-28



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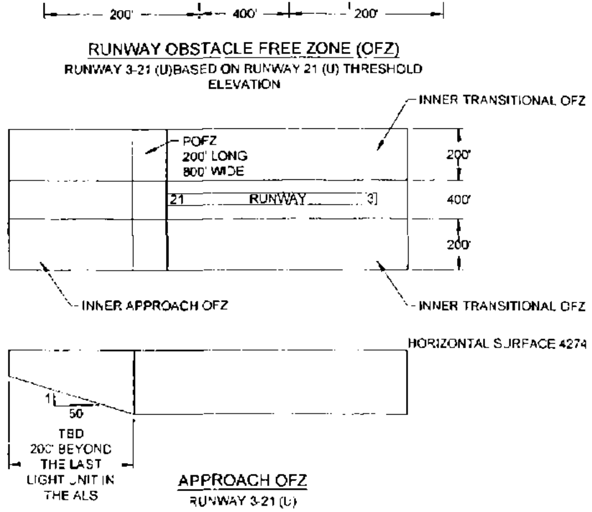


8° 16' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR 08-10-2017

600 500 0 600

1"=600'

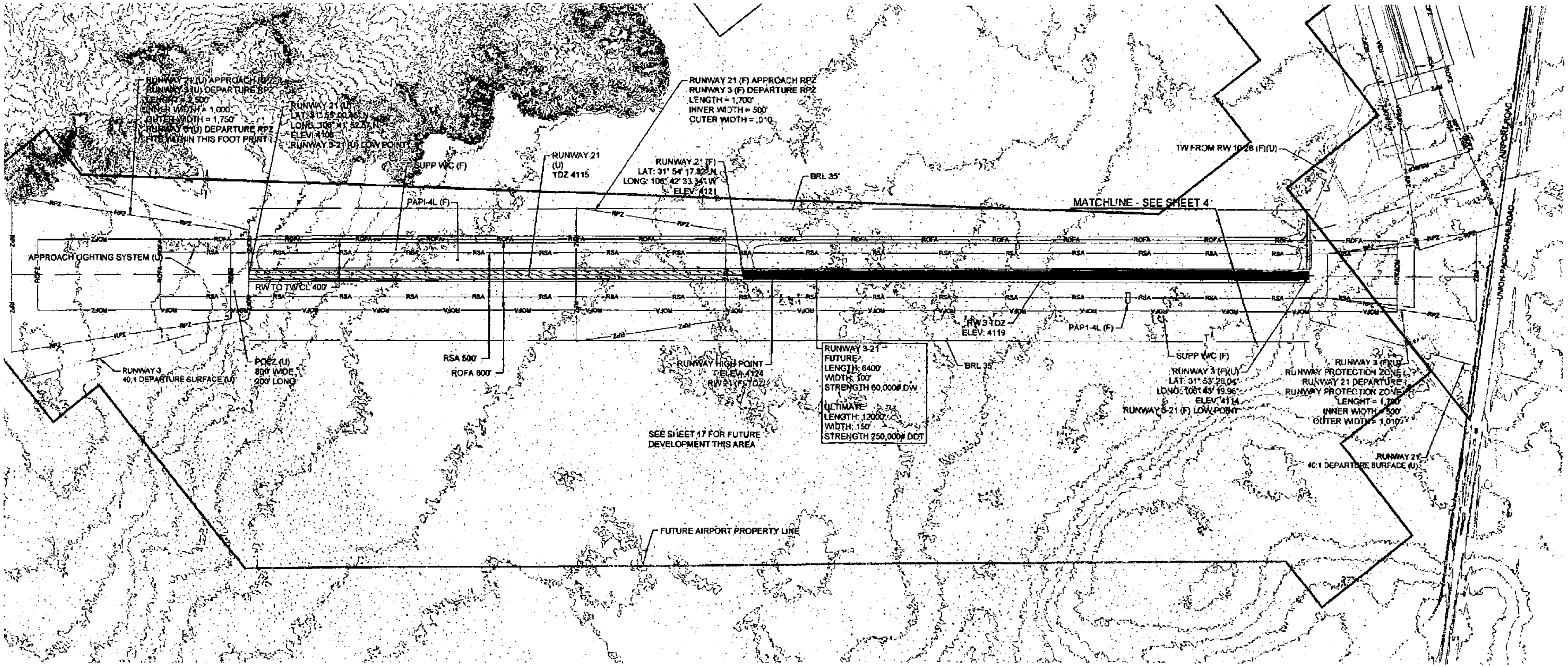
NOTES:

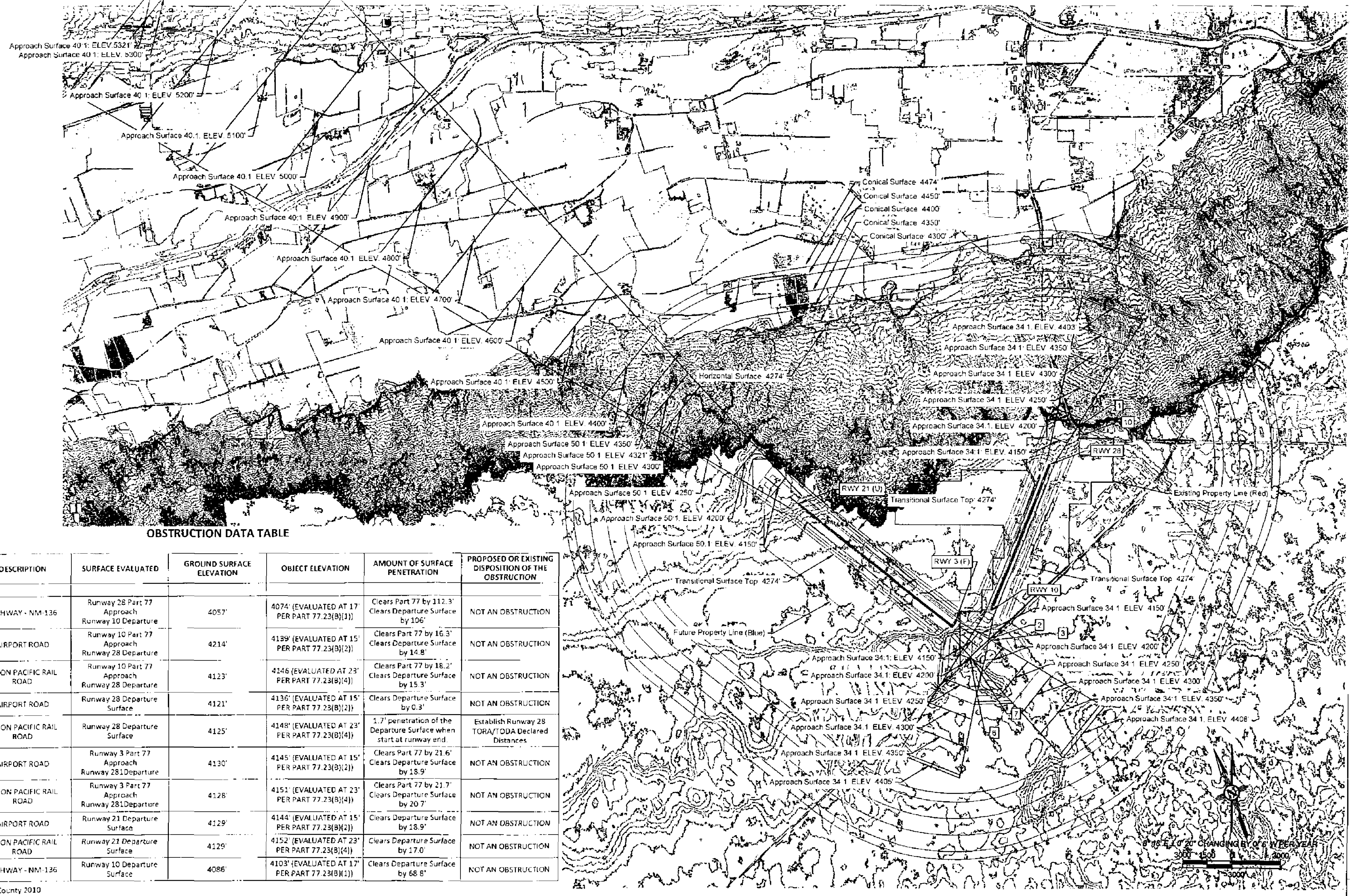
1. SEE PART 77 DRAWING FOR ROAD AND RAILROAD INTERSECTION OF PART 77 APPROACH SURFACES

LEGEND:

RUNWAY 3-21 INITIAL

RUNWAY 3-21 ULTIMATE





OBSTRUCTION DATA TABLE

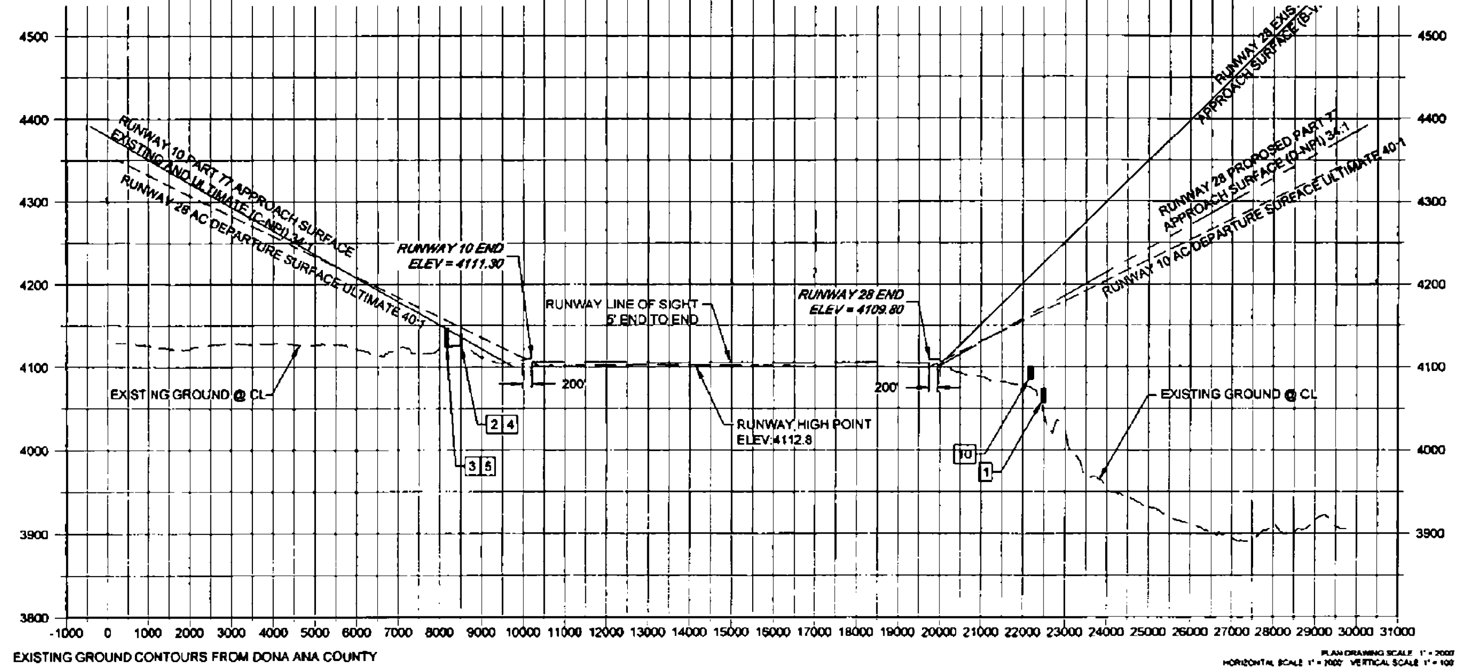
OBJECT IDENTIFICATION NUMBER	DESCRIPTION	SURFACE EVALUATED	GROUND SURFACE ELEVATION	OBJECT ELEVATION	AMOUNT OF SURFACE PENETRATION	PROPOSED OR EXISTING DISPOSITION OF THE *OBSTRUCTION*
1	HIGHWAY - NM-136	Runway 28 Part 77 Approach Runway 10 Departure	4057'	4074' (EVALUATED AT 17' PER PART 77.23(B)(1))	Clears Part 77 by 112.3' Clears Departure Surface by 106'	NOT AN OBSTRUCTION
2	AIRPORT ROAD	Runway 10 Part 77 Approach Runway 28 Departure	4214'	4139' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Part 77 by 16.3' Clears Departure Surface by 14.8'	NOT AN OBSTRUCTION
3	UNION PACIFIC RAIL ROAD	Runway 10 Part 77 Approach Runway 28 Departure	4123'	4146 (EVALUATED AT 23' PER PART 77.23(B)(4))	Clears Part 77 by 18.2' Clears Departure Surface by 15.3'	NOT AN OBSTRUCTION
4	AIRPORT ROAD	Runway 28 Departure Surface	4121'	4136' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Departure Surface by 0.3'	NOT AN OBSTRUCTION
5	UNION PACIFIC RAIL ROAD	Runway 28 Departure Surface	4125'	4148' (EVALUATED AT 23' PER PART 77.23(B)(4))	1.7' penetration of the Departure Surface when start at runway end.	Establish Runway 28 TORA/TODA Declared Distances
6	AIRPORT ROAD	Runway 3 Part 77 Approach Runway 281Departure	4130'	4145' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Part 77 by 21.6' Clears Departure Surface by 18.9'	NOT AN OBSTRUCTION
7	UNION PACIFIC RAIL ROAD	Runway 3 Part 77 Approach Runway 281Departure	4128'	4151' (EVALUATED AT 23' PER PART 77.23(B)(4))	Clears Part 77 by 21.7' Clears Departure Surface by 20 7'	NOT AN OBSTRUCTION
8	AIRPORT ROAD	Runway 21 Departure Surface	4129'	4144' (EVALUATED AT 15' PER PART 77.23(B)(2))	Clears Departure Surface by 18.9'	NOT AN OBSTRUCTION
9	UNION PACIFIC RAIL ROAD	Runway 21 Departure Surface	4129'	4152' (EVALUATED AT 23' PER PART 77.23(B)(4))	Clears Departure Surface by 17.0'	NOT AN OBSTRUCTION
10	HIGHWAY - NM-136	Runway 10 Departure Surface	4086'	4103' (EVALUATED AT 17' PER PART 77.23(B)(1))	Clears Departure Surface by 68 8'	NOT AN OBSTRUCTION

Topographic data from Doña Ana County 2010

28 DECLARED DISTANCES OF 9 350 FEET FOR TORA AND TODA WILL BE REQUIRED TO CLEAR THIS DEPARTURE SURFACE.

DEPARTURE SURFACE SHOWN A7 ULTIMATE LOCATION

RUNWAY LINE OF SIGHT (E)(U)
MEETS AC 150/5300-13A (CHANGE 1)
PARAGRAPH 305.b(1) AND (2) CRITERIA.



EXISTING GROUND CONTOURS FROM DONA ANA COUNTY

OBSTRUCTION DATA TABLE

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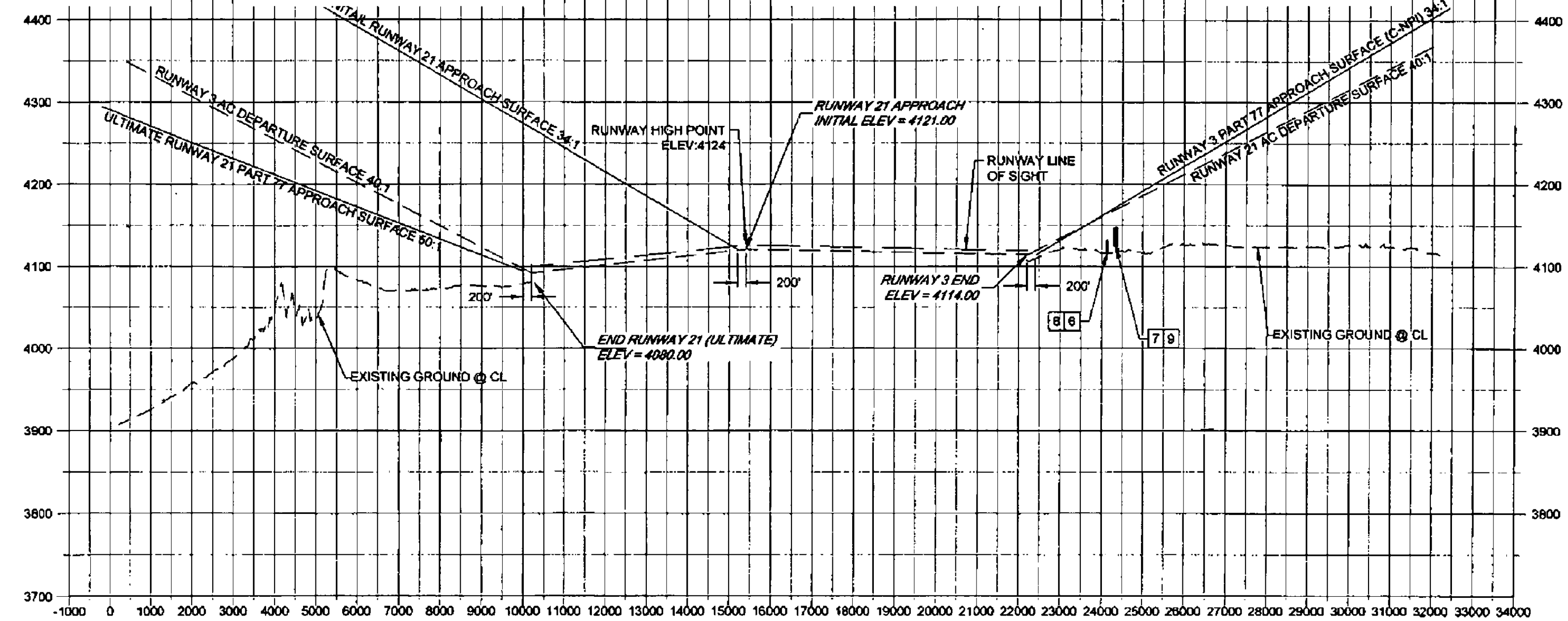
Topographic data from Doña Ana County 2010

*OBJECTS 6 THRU 9 NOT SHOWN ON THIS SHEET

2000 1000 0 2000
1"=2000'



EXISTING GROUND CONTOURS FROM DONA ANA COUNTY

PLAN DRAWING SCALE: 1" = 2000'
HORIZONTAL SCALE: 1" = 2000' VERTICAL SCALE: 1" = 100'

RUNWAY LINE OF SIGHT (E)(U)
MEETS AC 150/5300-13A (CHANGE 1)
PARAGRAPH 305.b(1) AND (2) CRITERIA.

OBSTRUCTION DATA TABLE

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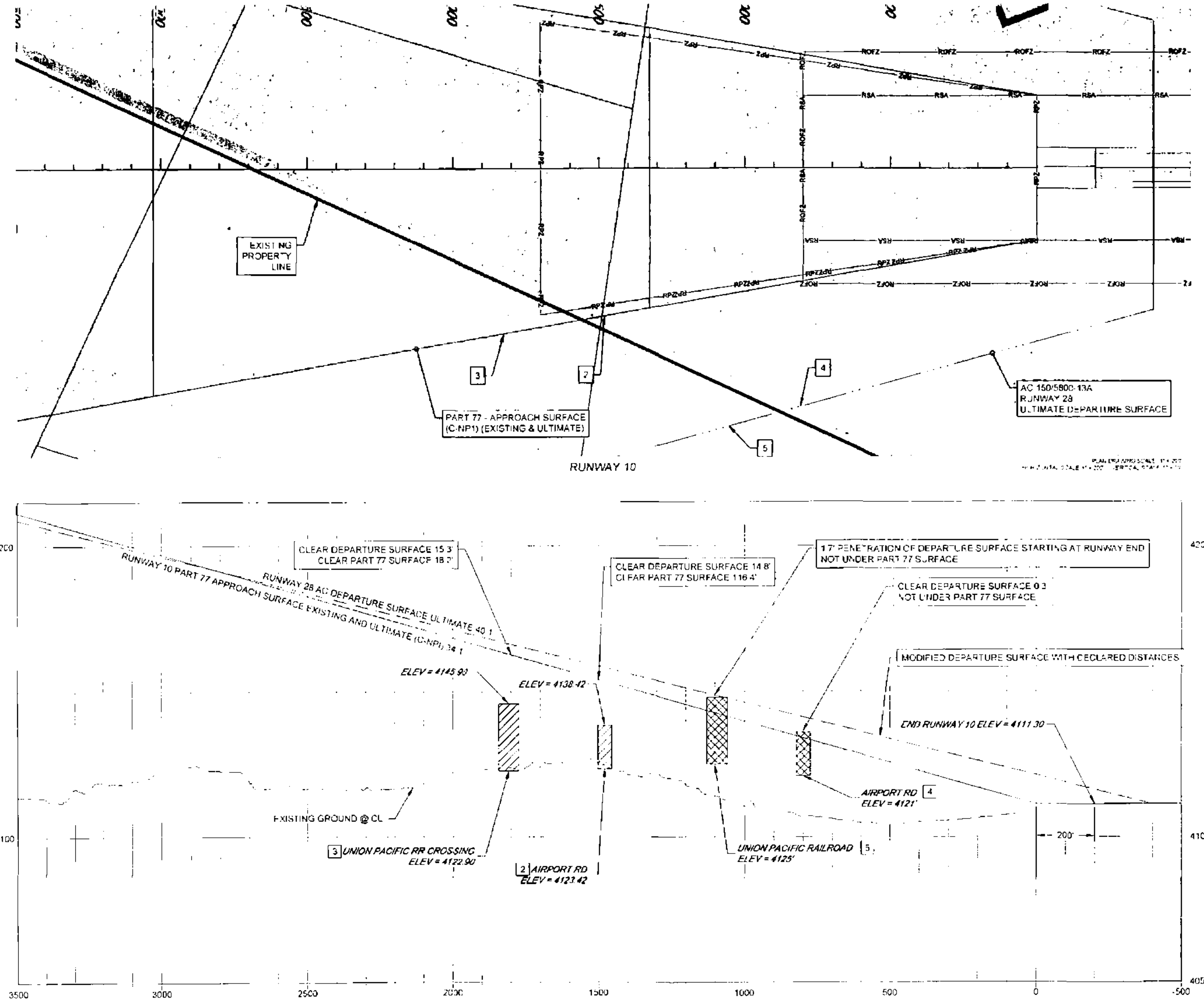
Topographic data from Doña Ana County 2010

*OBJECTS 1 THRU 5 NOT SHOWN ON THIS SHEET

2000 1000 0 2000

1"=2000'



ITEM 5 IS THE UPRR AT THE FUTURE RUNWAY 28 40:1 DEPARTURE SURFACE. THIS ITEM IS NOT A PART 77 PENETRATION.

THE UPRR EVALUATED AT GROUND PLUS 23' WOULD BE A 1.7' PENETRATION OF THIS SURFACE IF THE SURFACE BEGAN AT THE RUNWAY 28 LENGTH OF 9550'.

DISPOSITION IS TO TO ESTABLISH RUNWAY 28 TAKE-OFF DECLARED DISTANCES (TORA AND TODA) OF 9350' WHICH SHIFTS THE START OF THIS SURFACE TO CLEAR THE RAILROAD.

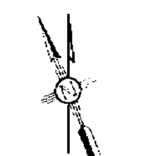
ITEM 4 IS THE AIRPORT ROAD AT THE FUTURE 40:1 RUNWAY 28 DEPARTURE SURFACE. THE ROAD GROUND PLUS 15 FEET IS NOT A PENETRATION OF THE RUNWAY 10 PART 77 APPROACH SURFACE OR OF THE RUNWAY 28 AC DEPARTURE SURFACE WITH THE ABOVE RUNWAY 28 DECLARED DISTANCES.

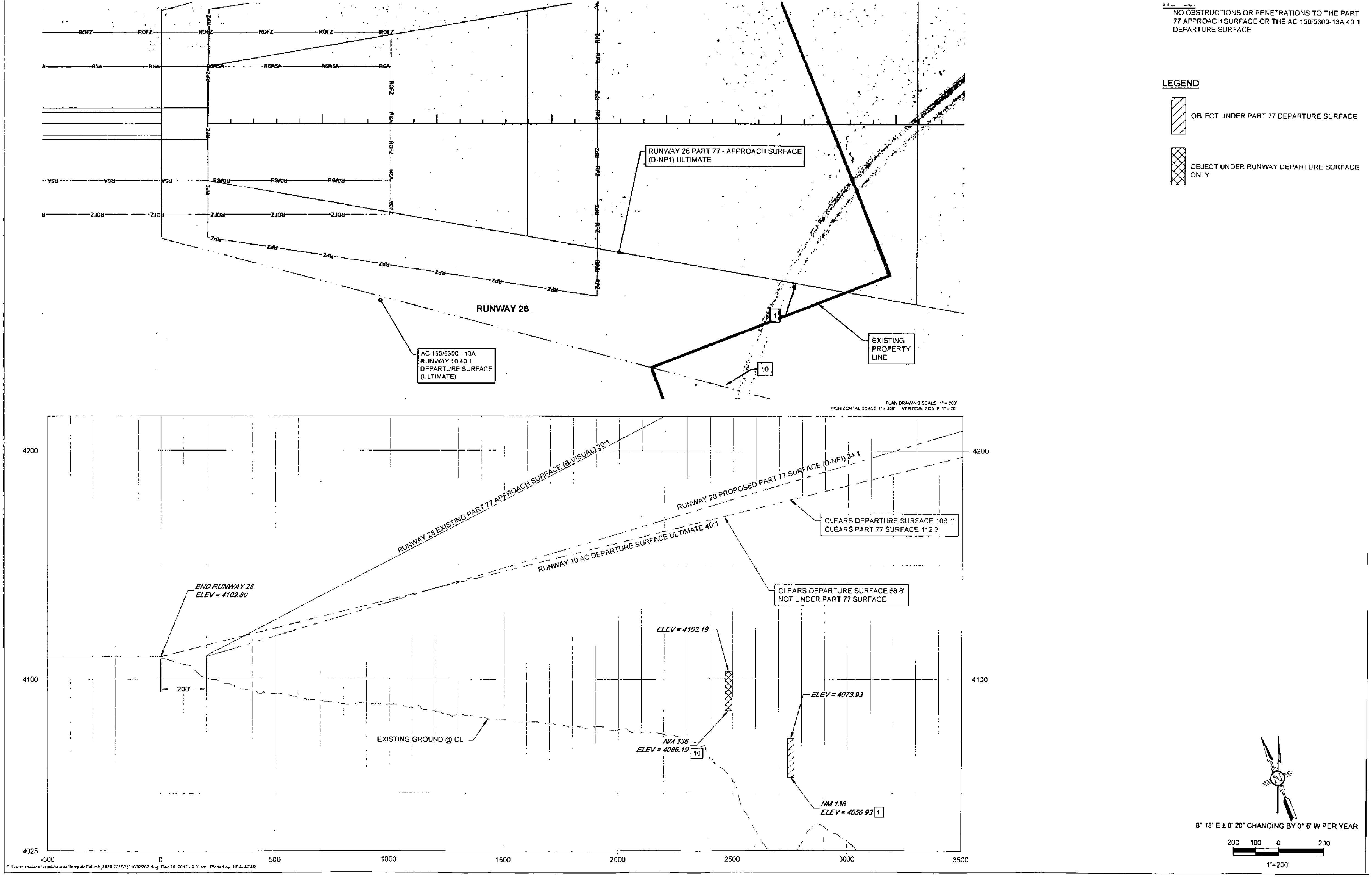
NO OTHER OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40:1 DEPARTURE SURFACE.

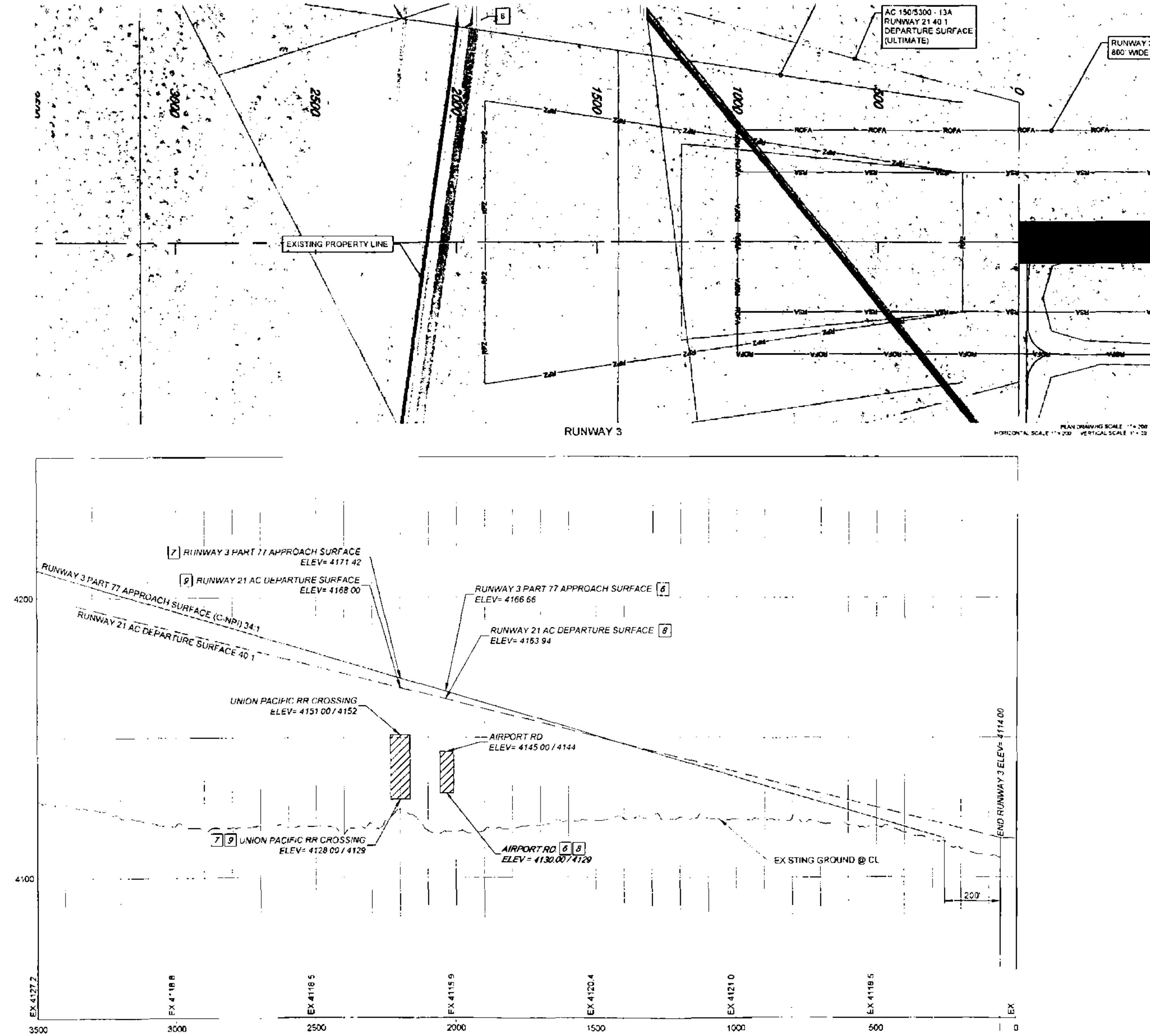
LEGEND

OBJECT UNDER PART 77 DEPARTURE SURFACE

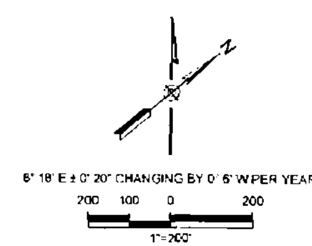
OBJECT UNDER RUNWAY DEPARTURE SURFACE ONLY

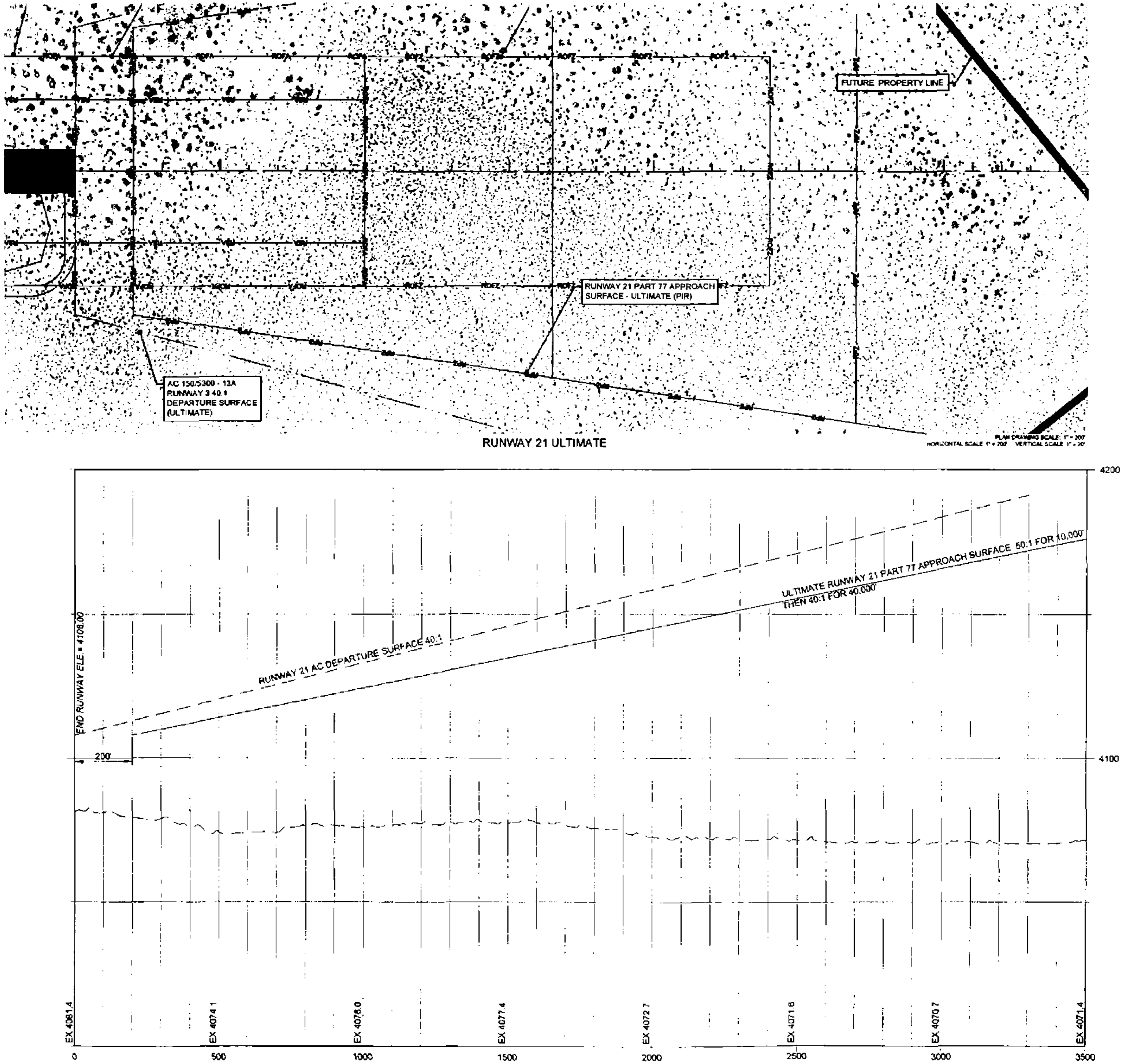



NO OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40:1 DEPARTURE SURFACE
LEGEND
OBJECT UNDER PART 77 DEPARTURE SURFACE
OBJECT UNDER RUNWAY DEPARTURE SURFACE ONLY
RUNWAY 28 PART 77 - APPROACH SURFACE (D-NP1) ULTIMATE
RUNWAY 28
AC 150/5300 - 13A RUNWAY 10 40:1 DEPARTURE SURFACE (ULTIMATE)
EXISTING PROPERTY LINE
RUNWAY 28 EXISTING PART 77 APPROACH SURFACE (B-VISUAL) 20:1
RUNWAY 28 PROPOSED PART 77 SURFACE (D-NPI) 34:1
RUNWAY 10 AC DEPARTURE SURFACE ULTIMATE 40:1
CLEARS DEPARTURE SURFACE 108.1'
CLEARS PART 77 SURFACE 112.3'
CLEARS DEPARTURE SURFACE 68.8'
NOT UNDER PART 77 SURFACE
END RUNWAY 28
ELEV = 4109.80
ELEV = 4103.19
ELEV = 4073.93
NM 136
ELEV = 4086.19
NM 136
ELEV = 4056.93
EXISTING GROUND @ CL
200'
4200
4100
4025
-500
0
500
1000
1500
2000
2500
3000
3500
8° 18' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR
1"=200'

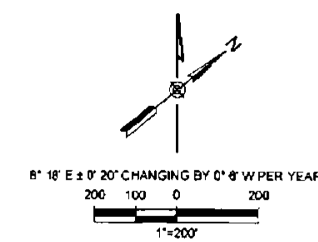


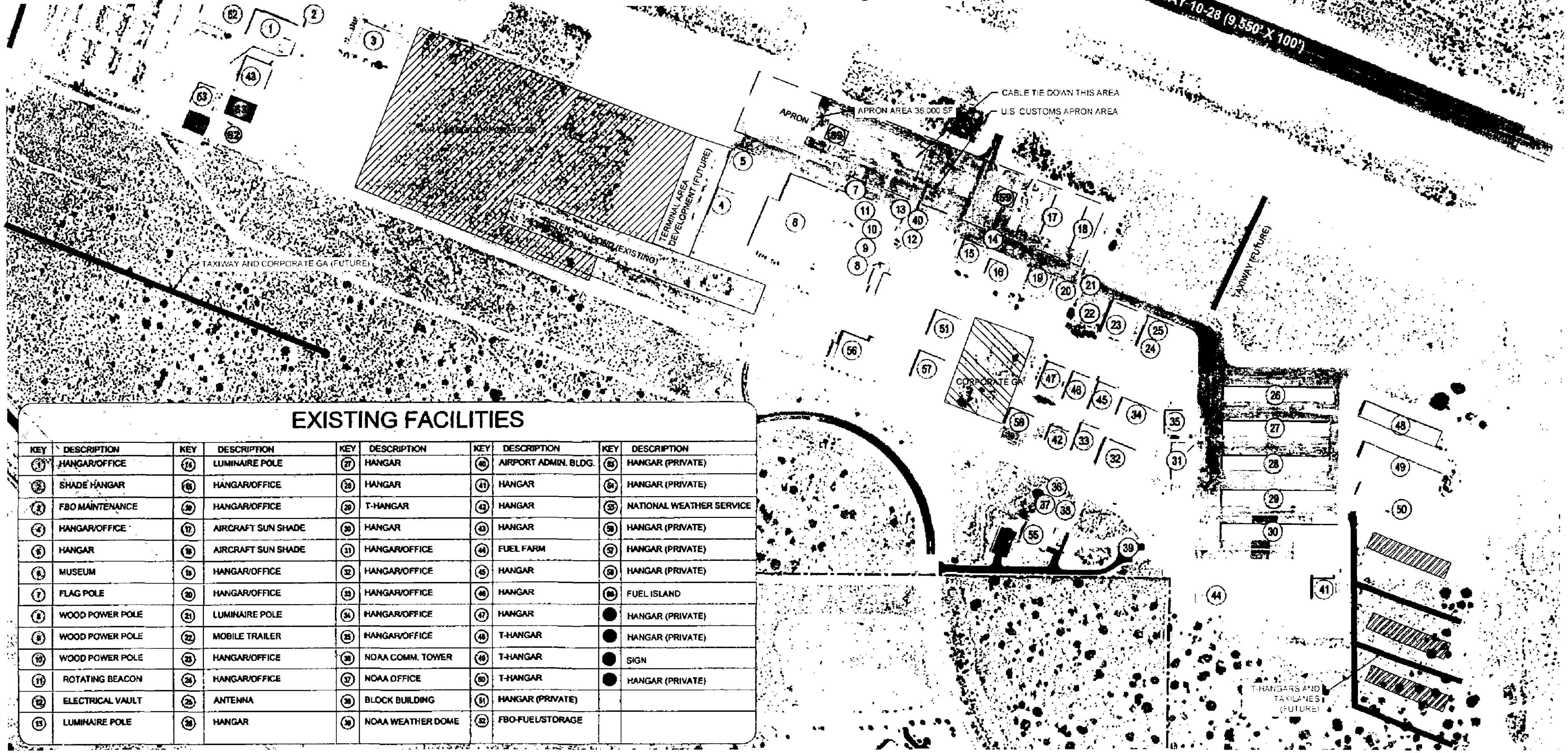
NO OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40 1 DEPARTURE SURFACE





NO OBSTRUCTIONS OR PENETRATIONS TO THE PART 77 APPROACH SURFACE OR THE AC 150/5300-13A 40:1 DEPARTURE SURFACE



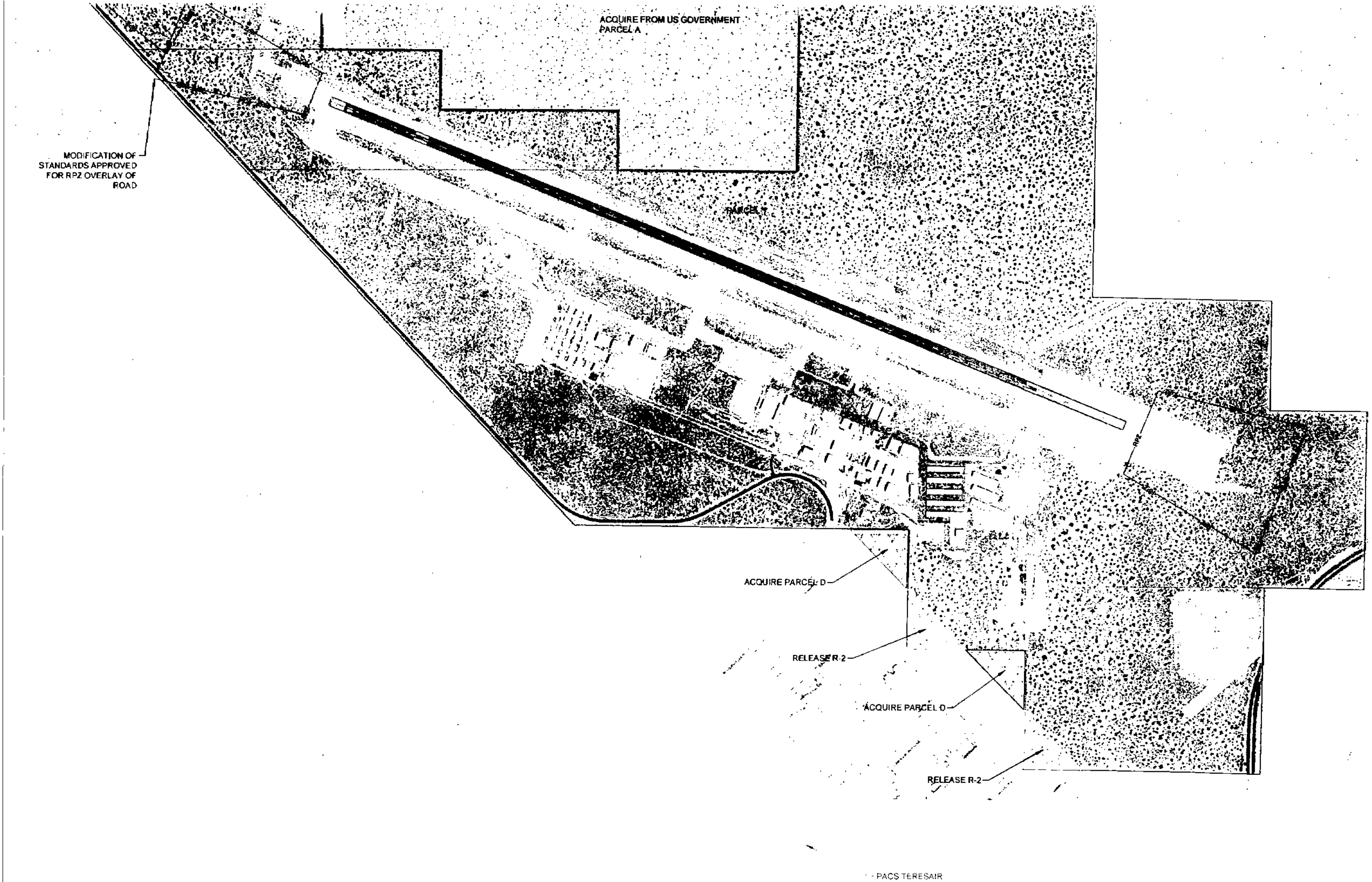


EXISTING FACILITIES

KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION
1	HANGAR/OFFICE	14	LUMINAIRE POLE	27	HANGAR	40	AIRPORT ADMIN. BLDG.	53	HANGAR (PRIVATE)
2	SHADE HANGAR	15	HANGAR/OFFICE	28	HANGAR	41	HANGAR	54	HANGAR (PRIVATE)
3	FBO MAINTENANCE	16	HANGAR/OFFICE	29	T-HANGAR	42	HANGAR	55	NATIONAL WEATHER SERVICE
4	HANGAR/OFFICE	17	AIRCRAFT SUN SHADE	30	HANGAR	43	HANGAR	56	HANGAR (PRIVATE)
5	HANGAR	18	AIRCRAFT SUN SHADE	31	HANGAR/OFFICE	44	FUEL FARM	57	HANGAR (PRIVATE)
6	MUSEUM	19	HANGAR/OFFICE	32	HANGAR/OFFICE	45	HANGAR	58	HANGAR (PRIVATE)
7	FLAG POLE	20	HANGAR/OFFICE	33	HANGAR/OFFICE	46	HANGAR	59	FUEL ISLAND
8	WOOD POWER POLE	21	LUMINAIRE POLE	34	HANGAR/OFFICE	47	HANGAR	●	HANGAR (PRIVATE)
9	WOOD POWER POLE	22	MOBILE TRAILER	35	HANGAR/OFFICE	48	T-HANGAR	●	HANGAR (PRIVATE)
10	WOOD POWER POLE	23	HANGAR/OFFICE	36	NOAA COMM. TOWER	49	T-HANGAR	●	SIGN
11	ROTATING BEACON	24	HANGAR/OFFICE	37	NOAA OFFICE	50	T-HANGAR	●	HANGAR (PRIVATE)
12	ELECTRICAL VAULT	25	ANTENNA	38	BLOCK BUILDING	51	HANGAR (PRIVATE)		
13	LUMINAIRE POLE	26	HANGAR	39	NOAA WEATHER DOME	52	FBO-FUEL/STORAGE		

PROPOSED DEVELOPMENT

- AIR CARGO AND CORPORATE GA
- CORPORATE GA
- GA T-HANGARS
- FUTURE TAXIWAY-TAXILANE

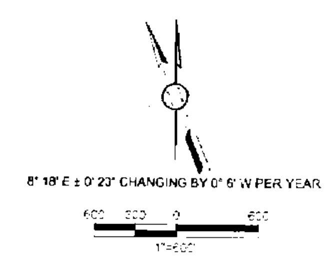


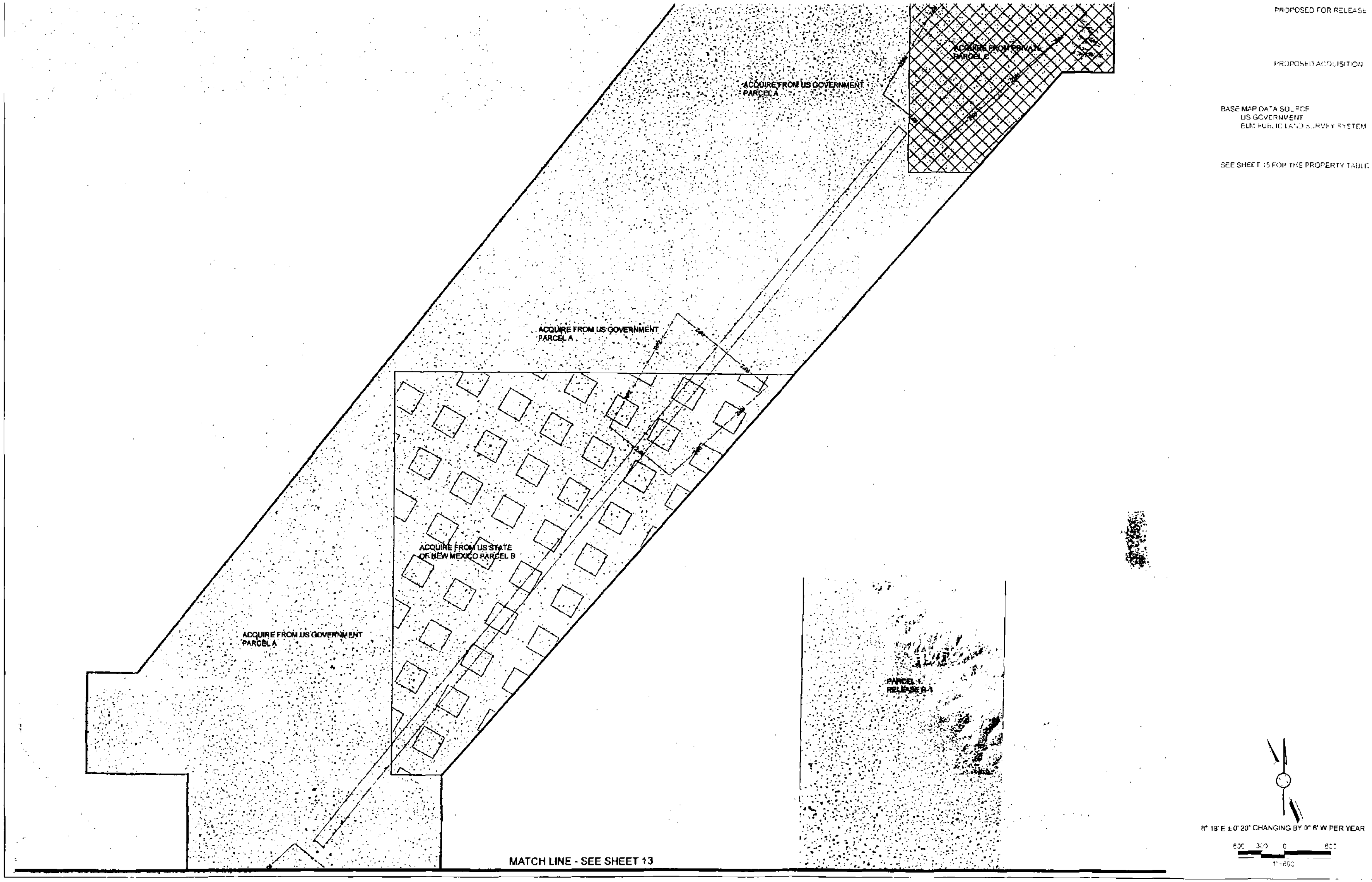
PROPOSED FOR RELEASE

PROPOSED ACQUISITION

BASE MAP DATA SOURCE
- US GOVERNMENT
- BLM PUBLIC LAND SURVEY SYSTEM

SEE SHEET 15 FOR THE PROPERTY TABLE




PROPOSED FOR RELEASE
PROPOSED ACQUISITION
BASE MAP DATA SOURCE
US GOVERNMENT
BLM PUBLIC LAND SURVEY SYSTEM
SEE SHEET 15 FOR THE PROPERTY TABLE
ACQUIRE FROM PRIVATE
PARCEL C
ACQUIRE FROM US GOVERNMENT
PARCEL A
ACQUIRE FROM US GOVERNMENT
PARCEL A
ACQUIRE FROM US STATE
OF NEW MEXICO PARCEL B
ACQUIRE FROM US GOVERNMENT
PARCEL A
PARCEL 1
RELEASE R-1
8° 19' E ± 0' 20" CHANGING BY 0° 6' W PER YEAR
600 300 0 600
1"=600
MATCH LINE - SEE SHEET 13

		Legal Description				
		T. 28 S., R. 2 E.,				
		Sec. 1, SW¼;				
		Sec. 10, Lots 4, 5, 8 and SE ¼ NE ¼				
		Sec. 11, Lot 1, W ½ W ½ SW ¼ NW ¼, NW ¼ SW ¼,				
		W½NW¼NE¼SW¼, S½NE¼SW¼, SE¼SW ¼,				
		SW¼ NW¼ SE¼ and S ½ SE¼;				
		Sec 12, W½ of Lot 7, Lots 8, 9, W½ of				
		Lot 10, W½SW¼NE¼, NW ¼ and W½SW ¼;				
		Sec. 13, Lot 2, W ½NE¼SE¼ NE¼, NW¼ NE¼ SW¼				
		and SE ¼;				
		Sec. 14, Lots 1, 2, 5, 6, N½NE¼ and SE ¼ NE¼				
		T. 28 S., R. 3 E.,				
		Sec. 18, Lot 2 and N ½ of Lot 3.				
		Containing 1,711.60 acres, according to the patent				

Documents pertaining to the Doña Ana County Airport

1. Deed, the United States of America to the Board of County Commissioners, Doña Ana County, New Mexico, filed of record on Sept. 7, 1982, recorded in bk. 275, pgs. 625-629, deed records, Doña Ana County, New Mexico.
2. Assignment of overriding royalty interest, D.P. and Margery Leonard, to Coral Oil &. Gas company, filed of record on Apr. 2, 1962, Recorded in bk. 52, pgs. 194-195, misc. Records, Doña Ana County, New Mexico,
3. Assignment affecting record title to oil and gas lease, chevron Oil company to Getty oil company, filed of record on Jan. 7, 1975, Recorded in bk. 108, pgs. 346-349, misc. Records, Doña Ana County, New Mexico.
4. Assignment affecting record title to oil and gas lease, chevron Oil to Getty oil company, filed of record on Jan. 7, 1975, recorded in Bk. 108, pgs. 350-353, misc. Records, Doña Ana County, New Mexico.
5. Assignment affecting record title to oil and gas lease, a. M. And Phyllis c. Scheming to Hubert S, Finke stein, filed of record on Nov,12, 1980, recorded in bk. 147, pgs. 327-329, misc. Records, Doña Ana County, New Mexico,
6. lease for oil and lease, the United States of America to a. M. Scheming, filed of record on November 12, 1980, recorded in book 147, Pages 330-332, misc. Records, Doña Ana County, New Mexico.
7. assignment of overriding royalty, Hubert S. and Ann Nachman Finkelstein to Jereld E. McQueen, filed of record on Nov. 2, 1981, Recorded in bk. 156, pgs. 101-104, misc. Records, Doña Ana County, New Mexico.
8. Assignment of overriding royalty, Hubert S. and Ana Nachman Finkelstein to Finke stein 2011 trust, filed of record on Jan. 25, 1982, Recorded in bk. 158, pgs. 298-301, misc. Records, Doña Ana County, New Mexico,
9. Easement, board of county commissioners, Doña Ana County, New Mexico, to El Paso Electric Company and mountain states telephone and Telegraph company, filed of record on July 20, 1987, recorded in bk.219, pgs. 65-66, misc. Records, Doña Ana County, New Mexico.
10. Notice of claim to water rights, New Mexico Water Conservancy and Irrigation District, Inc, filed of record on Dec. 23, 1992, recorded in bk. 283, pgs. 719-720, misc. Records, Doña Ana County, New Mexico.
11. Easement, board of county commissioners of Doña Ana County to New Mexico Highway and Transportation Department, filed of record on Sept.5, 1995, recorded in book 24, pgs. 1042-1043, records of Doña Ana County, New Mexico.
12. Easement, board of county commissioners of Doña Ana County to New Mexico State Highway and Transportation Department, filed of record on Sept. 5, 1995, recorded in bk. 24, pgs. 1044-1045, records of Doña Ana County, New Mexico.
13. Easement, board of county commissioners of Doña Ana County to New Mexico State Highway and Transportation Department, filed of record on Sept. 5, 1995, recorded in bk. 24, pgs. 1046-1047, records of Doña Ana County, New Mexico,
14. Right of way and easement, Doña Ana County, as Owner, Patrick F. O'Shea, a married man as his sole and separate property, as lessee, And Karr Tool and Manufacturing, Inc., as sub-lessee, to PNM Gas Services, and unincorporated division of Public Service Co. of New Mexico, a New Mexico corporation, filed of record on Nov. 13, 1996, Recorded in bk. 70, pgs, 1550-1554, records of Doña Ana County, New Mexico.
15. Easement, peter cooper, assistant county manager, to El Paso Electric company and mountain states telephone and telegraph company, Filed of record on Nov. 14, 1996, recorded in bk. 70, pgs. 1663-1664, Records of Doña Ana County, New Mexico.
16. Easement, Doña Ana County, to El Paso Electric Company and Mountain states telephone and telegraph company, filed of record on Mar. 6, 1997, recorded in book 81, pgs. 1631-1632, records of Doña Ana County, New Mexico,
17. Easement, Doña Ana County, to El Paso Electric Company and Mountain states telephone and telegraph company, filed of record on Apr. 4, 1997, recorded in bk. 85, pgs. 358-359, records of Doña Ana County, New Mexico.
18. Easement to El Paso Electric Company and Mountain States Telephone and telegraph company, filed of record on Sept. 16, 1997, Recorded in bk. 103, pgs. 116-117, records of Doña Ana County, New Mexico.
19. Easement for Airport Loop Road, legal description prepared September 5, 2008.
Data source items 1-18: Santiago Romero Jr. and Associates, Inc. survey of the Doña Ana County airport at Santa Teresa, dated June 2010. Item 19: legal description and easement prepared by Wilson and Company.

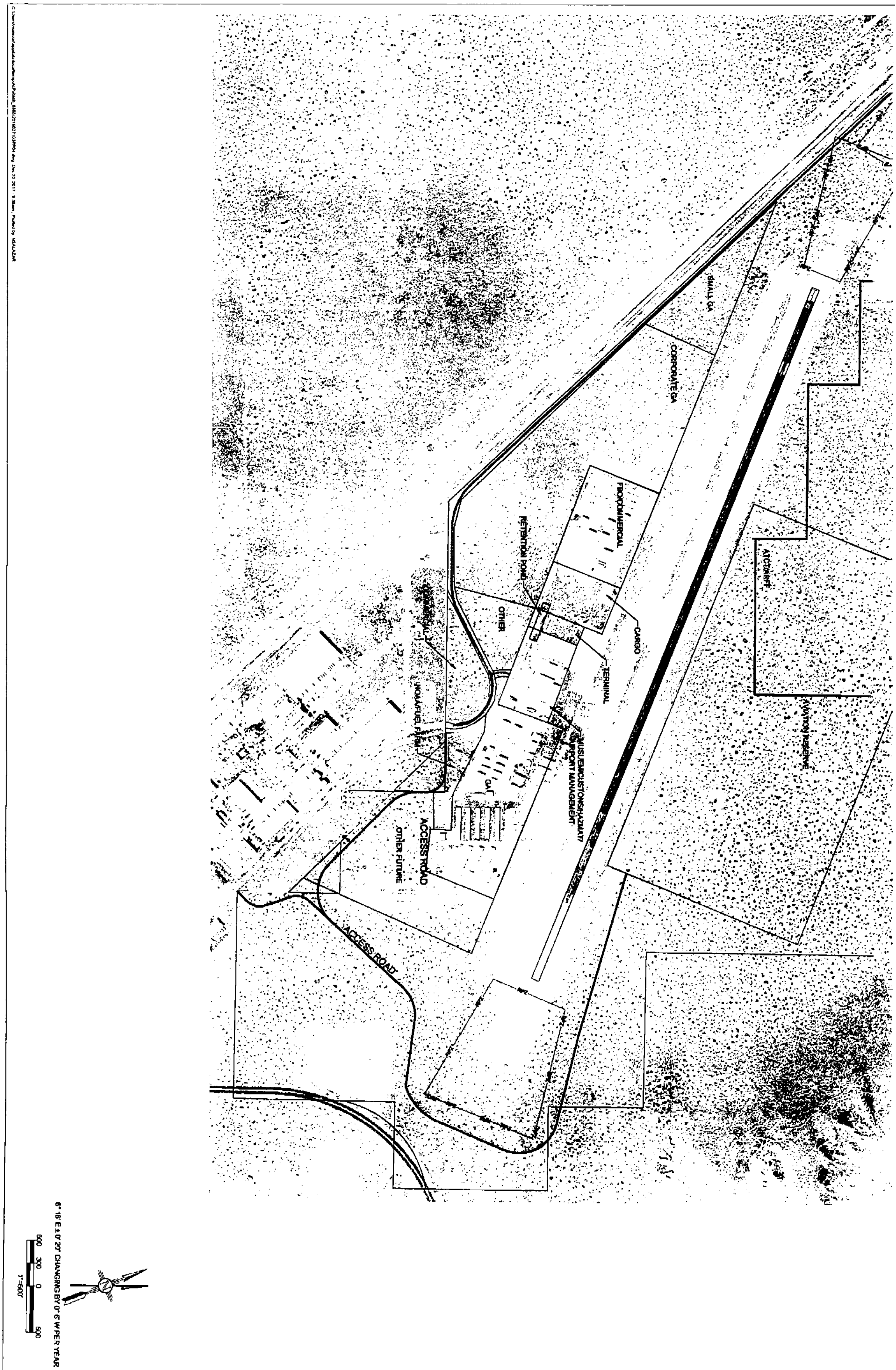
		T027S, R002E	5	80
		T027S, R002E	PORTION SE 1/4, NW 1/4, SEC 35	8.5
		T027S, R002E	majority SW 1/4, NE 1/4, SEC 35	39.4
		T027S, R002E	MAJORITY NE 1/4 SW 1/4, SEC 35	35.9
		T027S, R002E	SE 1/4, SEC 35	160
		T027S, R002E	MAJORITY SW1/4, SW1/4, SEC 35	21.9
		T027S, R002E	SE 1/4, SW 1/4, SEC 35	40
		T028S, R002E	PORTION NE1/4, NE1/4, SEC 03	21.5
		T028S, R002E	PORTION SW1/4, NE1/4, SEC 03	13.3
		T028S, R002E	SE1/4, NE1/4, SEC 03	40
		T028S, R002E	PORTION SW1/4, NE1/4, SEC 02	25.4
		T028S, R002E	MAJORITY NW1/4, SE1/4, SEC 03	38.1
		T028S, R002E	E1/2, SE1/4, SEC 03	80
		T028S, R002E	SE1/4, SW1/4, SEC 03	40
		T028S, R002E	SW1/4, SE1/4, SEC 03	40
		T028S, R002E	N1/2, NW1/4, SEC 10	80
		T028S, R002E	W 1/2, NW 1/4, NW 1/4, SEC 11	20
		T028S, R002E	SW 1/4, NW 1/4, SEC 11	40
		T028S, R002E	S 1/2, SE 1/4, NW 1/4, SEC 11	20
		T028S, R002E	S 1/2, NE 1/4, SEC 11	80
		T028S, R002E	N 1/2, NE 1/4, SW 1/4, SEC 11	20
		T028S, R002E	N1/2, NW1/4, SE1/4, SEC 11	20
		T028S, R002E	SE1/4, NE1/4, SE1/4, SEC 11	10
		T028S, R002E	NE1/4, SE1/4, SEC 11	40
				1069.9

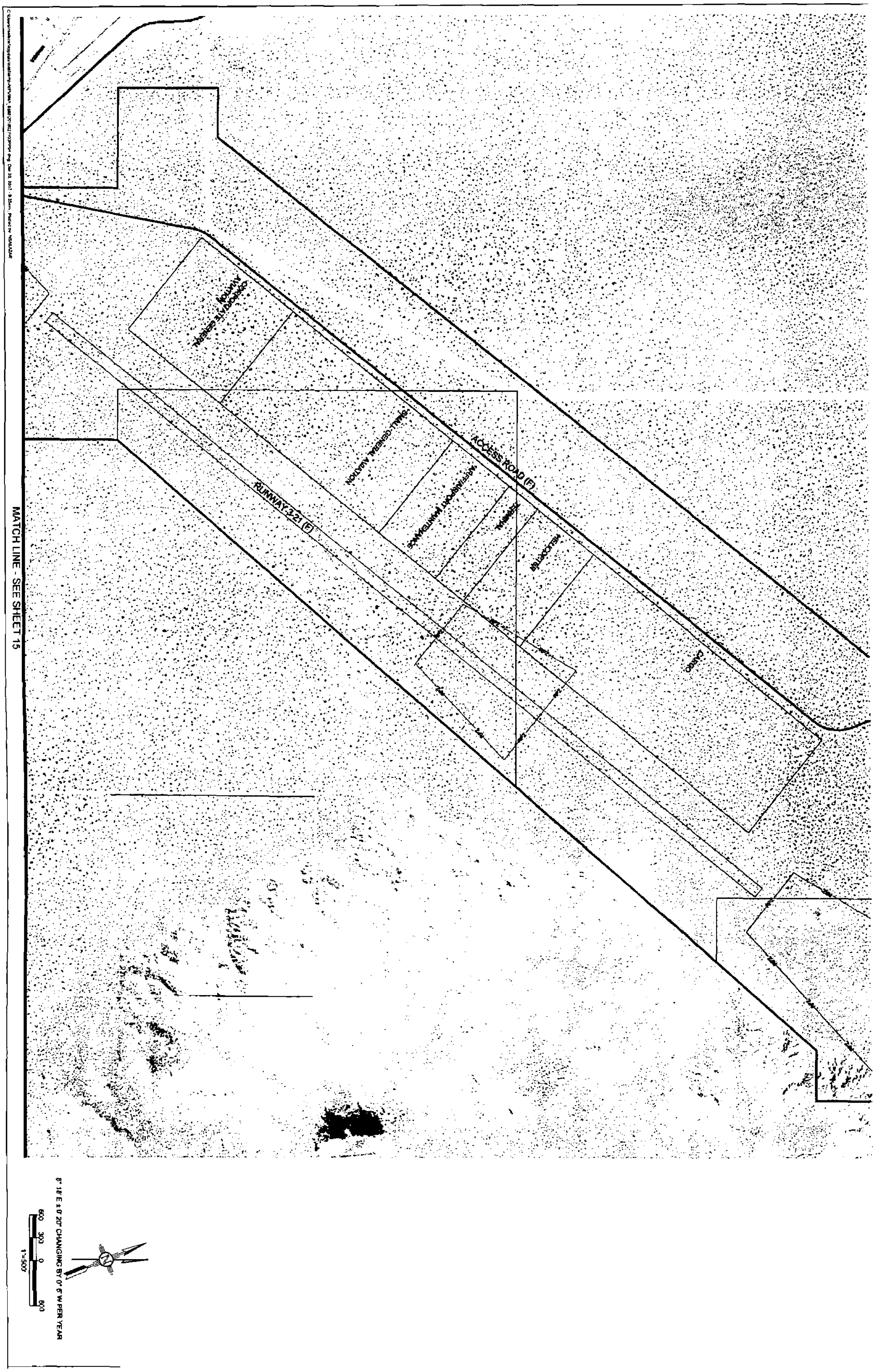
B	State of New Mexico	T028S, R002E	NW1/4, SEC 02	160
		T028S, R002E	NW1/4, NE1/4, SEC 2	40
		T028S, R002E	PORTION NE1/4, NE1/4, SEC 02	19.5
		T028S, R002E	NW1/4, SW1/4, SEC 02	40
		T028S, R002E	MAJORITY NE1/4, SW1/4, SEC 02	30.3
		T028S, R002E	MAJORITY SW1/4, SW1/4, SEC 02	32.2
		T028S, R002E	PORTION SE1/4, SW1/4, SEC 02	3
				325

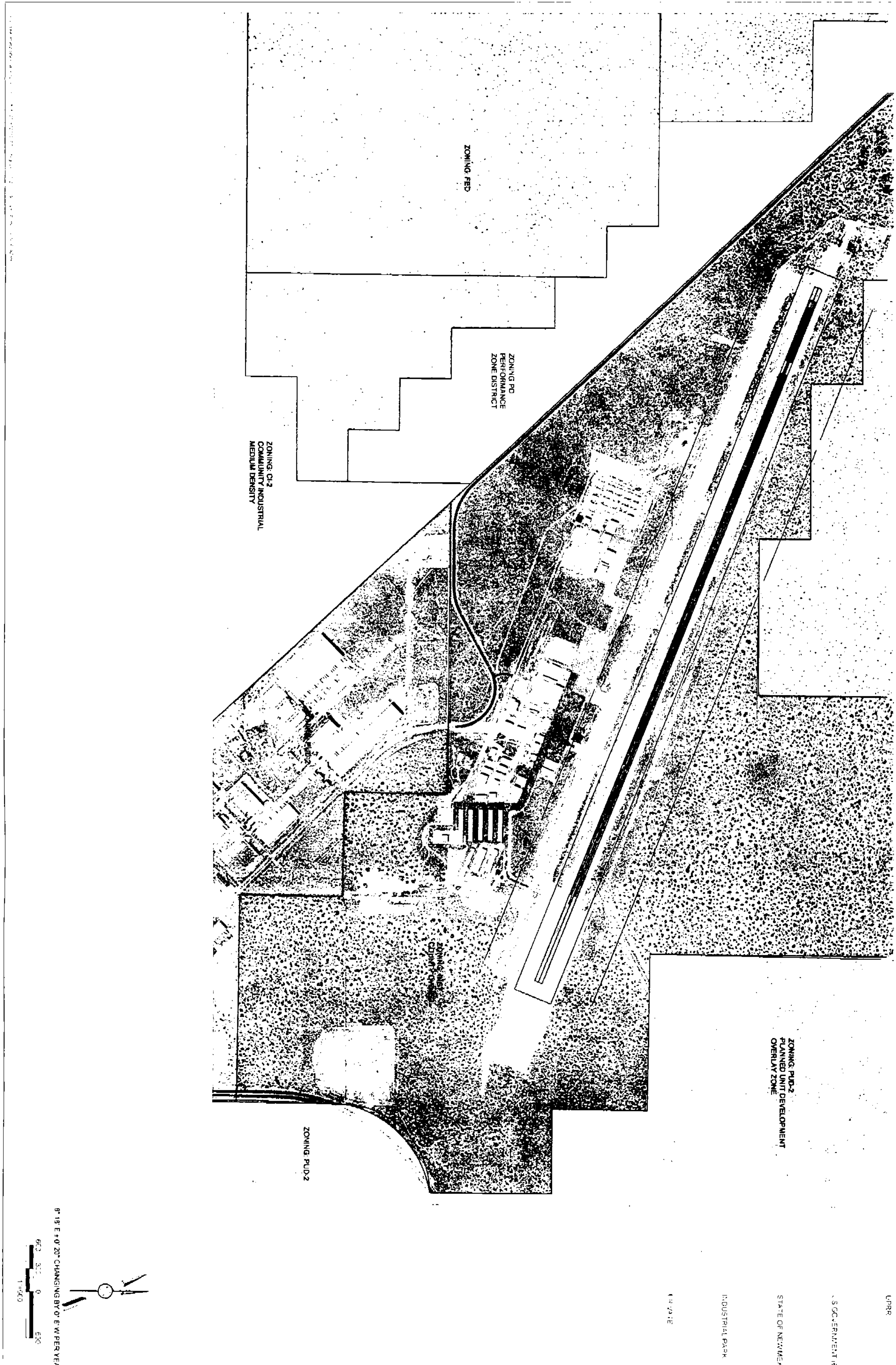
C	Robert E. Malooly (Parcel ID R170411)	T027S, R002E	NW1/4, SEC 36	160
		T027S, R002E	NW1/4, NE1/4, SEC 36	40
		T027S, R002E	portion SW 1/4, NE 1/4, SEC 36	5.9
		T027S, R002E	majority NW 1/4, SW 1/4, SEC 36	39.2
		T027S, R002E	PORTION NE 1/4, SW 1/4, SEC 36	9.4
		T027S, R002E	PORTION SW1/4, SW1/4, SEC 36	7
				261.5

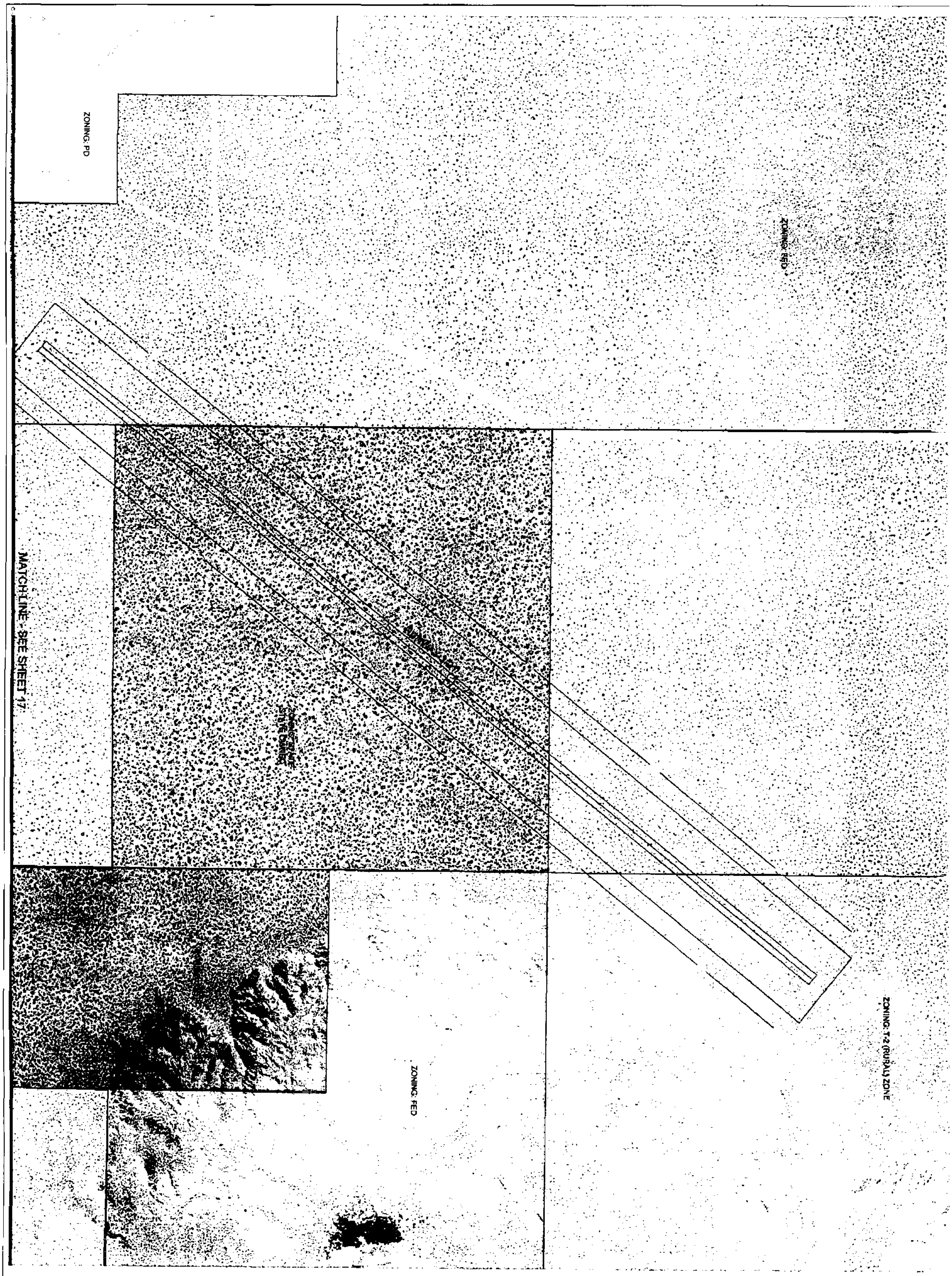
D	Verde Realty	T028S, R002E	Portions Section 13, the County has authority to exchange land with Verde Realty.	TBD

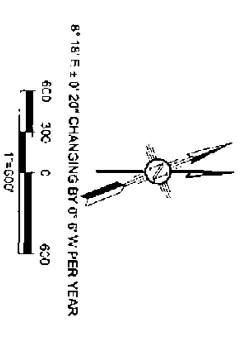
		T028S, R002E	NW 1/4, SW 1/4, NE 1/4, SEC 12	10
R-2	Verde Realty	T028S, R002E	Portions Section 13, the County has authority to exchange land with Verde Realty.	TBD
				290


SMALL GA
CORPORATE GA
FBO/COMMERCIAL
RETENTION POND
OTHER
CARGO
TERMINAL
ATCT/ARFF
AVIATION RESERVE
NOAA/FUEL FARM
AIRPORT MANAGEMENT
GA
ACCESS ROAD
OTHER FUTURE
ACCESS ROAD
8° 15' E ± 0' 27' CHANGING BY 0° 6' W PER YEAR
600 300 0 600
1"=600'


ACCESS ROAD (F)
RUNWAY 3-21 (F)
CORPORATE GENERAL AVIATION
SMALL GENERAL AVIATION
TERMINAL
HELICOPTER
CARGO
MATCH LINE - SEE SHEET 15
8° 18' E ± 0° 20' CHANGING BY 0° 6' W PER YEAR
600 300 0 600
1"=500'


ZONING: FED
ZONING: PD
PERFORMANCE
ZONE DISTRICT
ZONING: CI-2
COMMUNITY INDUSTRIAL
MEDIUM DENSITY
ZONING: PUD-2
ZONING: PUD-2
PLANNED UNIT DEVELOPMENT
OVERLAY ZONE
ZONING: PUD-2
UPRR
INDUSTRIAL PARK





COUNTY OF DONA ANA) RESOLUTION
STATE OF NEW MEXICO) ss PAGES: 22

I Hereby Certify That This Instrument Was Filed for
Record On FEB 28, 2018 02:32:38 PM
And Was Duly Recorded as Instrument # 1804638
Of The Records Of Dona Ana County

Witness My Hand And Seal Of Office,
Scott Krahling, County Clerk, Dona Ana, NM

Deputy Gerardo Barrera

PRIVATE
INDUSTRIAL PARK
STATE OF NEW MEXICO (SLO
US GOVERNMENT (BLM)
UPRR

Prepared by

Bohannan Huston, Inc.

In association with
WMRenier Consulting, LLC
Sara Funk Consultant
CDM Smith