Chapter Two

AVIATION DEMAND FORECASTS

Sustainable Airport Master Plan

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AVIATION DEMAND FORECASTS

The definition of demand that may be reasonably expected to occur during the useful life of an airport's key components (e.g., runways, taxiways, terminal buildings, etc.) is an important factor in facility planning. In airport master planning, this involves projecting aviation activity for at least a 20-year timeframe. Aviation demand forecasting for the Albuquerque International Sunport (ABQ) will consider commercial passenger enplanements (boardings), air cargo (enplaned tons), based aircraft, and aircraft operations.

The Federal Aviation Administration (FAA) has oversight responsibility to review and approve aviation forecasts developed in conjunction with airport planning studies. In addition, aviation activity forecasts may be an important input to future benefit-cost analyses associated with airport development, and FAA reviews these analyses when federal funding requests are submitted.

The FAA will review individual airport forecasts with the objective of comparing them to its *Terminal Area Forecasts* (TAF) and the *National Plan of Integrated Airport Systems* (NPIAS). Even though the TAF is updated annually, in the past there was almost always a disparity between the TAF and master planning forecasts. This was primarily because the TAF forecasts did not consider local conditions or recent trends. In recent years, however, the FAA has improved its forecast model to be a demand-driven forecast for aviation services based upon local and national economic conditions, as well as conditions within the aviation industry.

The TAF projections of passenger enplanements and commercial operations at large, medium (such as the Sunport), and small hub airports are based on a bottom-up approach. The domestic enplanements are forecast by generating origin and destination (O&D) market demand forecasts using the Department of Transportation's (DOT) quarterly 10 percent sample data to model passenger flow on a quarterly basis.

The O&D passenger demand forecasts are based on regression analysis using fares, regional demographics, and regional economic factors as the independent variables. The O&D forecasts are then combined with DOT T-100 segment data to generate passenger forecasts by airport pair and segment pair. The segment pair passenger forecasts are assigned to aircraft equipment in order to produce segment pair operation forecasts. The quarterly segment pair forecasts are aggregated to produce annual airport forecasts.

Forecasts of itinerant general aviation operations and local civil operations at FAA facilities are based primarily on time series analysis. Because military operations forecasts have national security implications, the Department of Defense (DOD) provides only limited information on future aviation activity. Hence, the TAF projects military activity at its present level except when FAA has specific knowledge of a change. For instance, DOD may announce a base closing or may shift an Air Force wing from one base to another.

As stated in FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems* (NPIAS), forecasts should be:

- Realistic;
- Based on the latest available data;
- Reflective of current conditions at the airport (as a baseline);
- Supported by information in the study; and
- Able to provide adequate justification for airport planning and development.

This forecast effort was completed in March of 2015 with a base year of 2014.

This forecast effort was completed in March of 2015 with a base year of 2014. Thus, the 2014 FAA *Terminal Area Forecasts* published in January 2015 were utilized. A summary of those forecasts is presented in **Table 2A**. The following sections of this chapter will discuss the reasonableness of each forecast, as well as establish the opinion of range that will be utilized in the remainder of the master plan.

TABLE 2A
2014 FAA Terminal Area Forecast
Albuquerque International Sunport

	2014	2020	2025	2030	2035	2040
ENPLANEMENTS						
Air Carrier	1,936,974	1,824,281	2,013,033	2,217,760	2,446,191	2,670,338
Commuter	458,504	591,086	652,125	712,662	783,852	849,592
Total Enplanements	**2,395,478**	**2,415,367**	**2,665,158**	**2,930,422**	**3,230,043**	**3,519,930**
ANNUAL OPERATIONS						
Itinerant						
Air Carrier	53,000	56,749	64,900	71,301	78,532	85,562
Air Taxi	28,177	26,910	24,664	25,917	27,238	28,632
General Aviation	27,750	28,578	29,592	30,641	31,725	32,850
Military	16,090	16,090	16,090	16,090	16,090	16,090
Total Itinerant	**125,017**	**128,327**	**135,246**	**143,949**	**153,585**	**163,134**
Local						
General Aviation	3,751	3,080	3,135	3,190	3,245	3,300
Military	2,836	2,836	2,836	2,836	2,836	2,836
Total Local	**6,587**	**5,916**	**5,971**	**6,026**	**6,081**	**6,136**
Total Operations	**131,604**	**134,243**	**141,217**	**149,975**	**159,666**	**169,270**
Based Aircraft	**174**	**196**	**218**	**243**	**268**	**297**

Source: FAA Terminal Area Forecast (Jan. 2015)

SUNPORT SERVICE AREA

The initial step in determining the aviation demand for an airport is to define its generalized service area for various segments of aviation. The service area is determined primarily by evaluating the location of competing airports, their capabilities, their services, and their relative attraction and convenience. In determining the aviation demand for an airport, it is necessary to identify the role of the airport, as well as the specific areas of aviation demand the airport is intended to serve. For the Sunport, the primary civilian roles are to accommodate commercial passenger airline service, as well as general aviation demand in the region. The Sunport also has a responsibility to accommodate a significant level of military activity as the runways are shared with Kirtland Air Force Base. However, it should be noted that this Master Plan will focus primarily on civilian demand.

The service area for an airport is a geographic region from which an airport can be expected to attract the largest share of its activity. The definition of the service area can then be used to identify other factors, such as socioeconomic and demographic trends, which influence aviation demand at an airport. Aviation demand will be impacted by the proximity of competing airports, the surface transportation network, and the strength of commercial airline and/or general aviation services provided by an airport and competing airports.

As in any business enterprise, the more attractive the facility is in terms of service and capabilities, the more competitive it will be in the market. If an airport's attractiveness increases in relation to nearby airports, so will the size of its service area. If facilities and services are adequate and/or competitive, some level of aviation activity might be attracted to an airport from more distant locales.

The service area of an airport is primarily defined by its proximity to other airports providing similar service. The Sunport's service area is rather extensive in that it is the only airport in the state of New Mexico with commercial service by the major airlines. Currently, there are seven other airports around the state that have some level of commercial service, but ABQ is the only one served by the major airlines as opposed to commuter/regional carriers. **Table 2B** shows the dominance of the Sunport in terms of enplanements in the state.

TABLE 2B
Passenger Service in New Mexico

City	ID	2014 Enplanements	Carrier(s)	Destinations
Albuquerque	ABQ	2,446,388	Multiple Major Airlines	Domestically
Santa Fe	SAF	74,551	American (Regional)	Dallas
			United Express	Denver, Los Angeles
Roswell	ROW	34,780	American (Regional)	Dallas
Hobbs	HOB	18,223	United Express	Houston
Farmington	FMN	5,670	Great Lakes	Denver, Alamosa CO, Phoenix, Show Low AZ
Carlsbad	CNM	1,756	New Mexico Air	ABQ (service discontinued in 2014)
Los Alamos	LAM	3,801	New Mexico Air	ABQ (service discontinued in 2014)
Clovis	CVN	1,952	BoutiqueAir	Dallas
Silver City	SVC	1,128	BoutiqueAir	ABQ (service initiated in 2014)

Source: US DOT - Bureau of Transportation Statistics

Approximately 95 percent of the commercial passengers enplaning in New Mexico do so at the Sunport. Since the Albuquerque metropolitan statistical area (MSA) comprises approximately 45 percent of the population in the state, it is obvious that the Sunport draws passengers from well beyond the metropolitan area.

El Paso International Airport is the next closest airport with major airline service. It is 224 miles south of ABQ. Amarillo and Lubbock are the next closest. They are located in west Texas, 278 and 289 miles respectively from the Sunport. Denver International Airport draws some traffic from northern New Mexico, and Phoenix Sky Harbor International Airport draws from the western New Mexico border.

Over the years, studies have shown that over two-thirds of the ABQ originating passengers come from within a thirty-mile radius of the Sunport. The next largest contributor has been the Santa Fe/Los Alamos area. Thus, the six-county area of Bernalillo, Sandoval, Valencia, Torrance, Los Alamos and Santa Fe generates over 75 percent of the passengers at ABQ.

Santa Fe, which is 60 miles to the northeast of ABQ, has regional/commuter service to Dallas, Denver, and Los Angeles. Los Alamos had service to Albuquerque in 2014. In 2014, Santa Fe and Los Alamos airports totaled 78,352 enplanements. While commercial service to Santa Fe could be expected to increase in the future, the Sunport will continue to draw a significant portion of the potential enplanements from the area primarily because of the schedule frequency.

While Santa Fe and Los Alamos have been experiencing newfound passenger growth in recent years, in general, small communities have struggled to maintain air service under the current airline business models. Those that do maintain and grow their service will still not compare to the service levels at the Sunport. As a result, ABQ can expect to continue to draw passengers state-wide. Therefore, virtually the entire state, as well as portions of southern Colorado and eastern Arizona, can be considered as part of the Sunport's secondary service area. The six-county area, however, remains the primary core of the commercial service market area. **Exhibit 2A** shows the primary commercial service and general aviation service area for the Sunport.

The general aviation service area is more localized due to the availability of other airports that serve general aviation exclusively. Therefore, the general aviation market area is limited to the MSA, and primarily to Bernalillo County. In fact, much of that market is shared with Double Eagle II, which is the City of Albuquerque's reliever airport and the only airport classified as a reliever New Mexico.

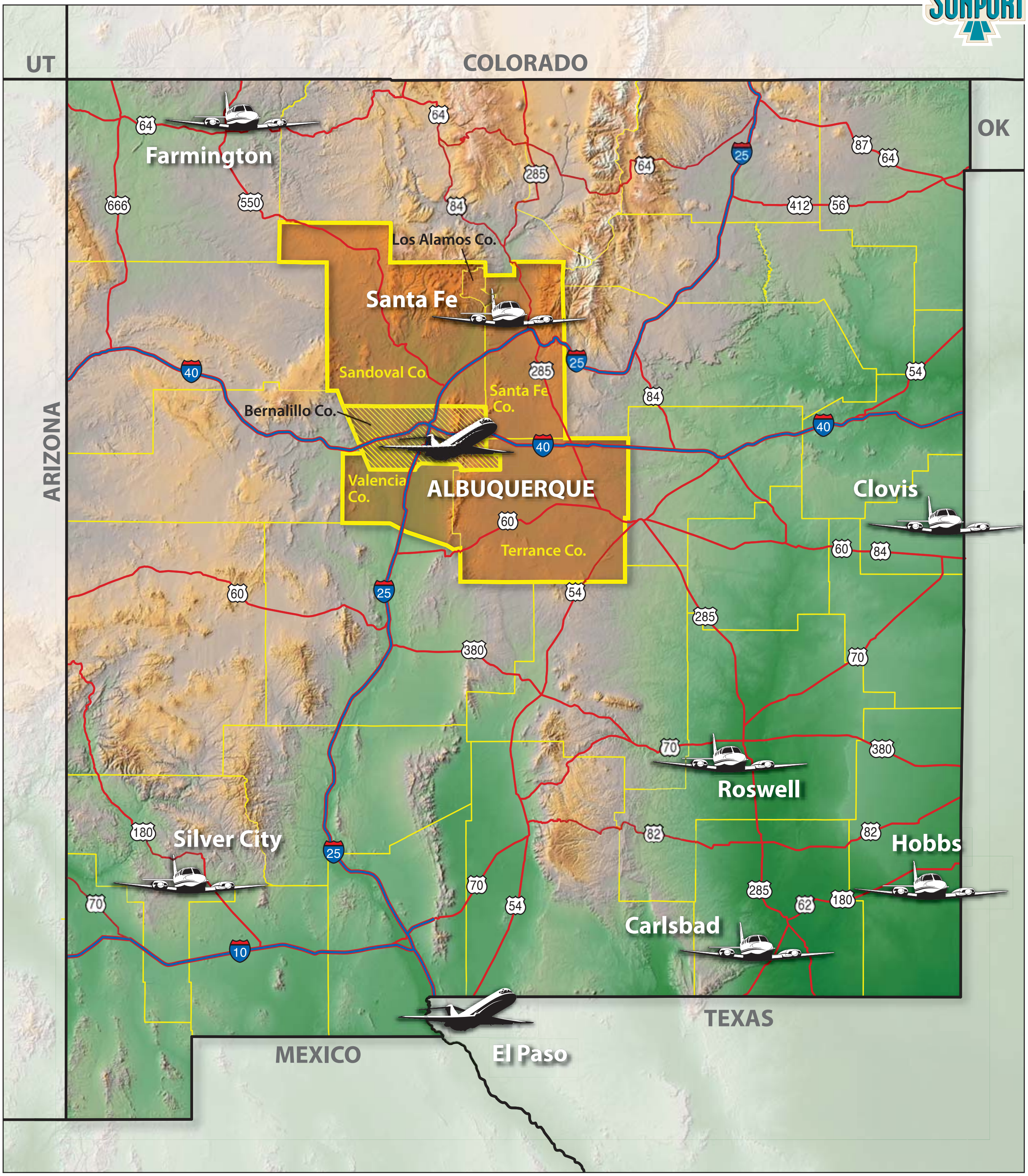
SOCIOECONOMIC TRENDS

Local and regional forecasts of key socioeconomic variables, such as population, employment, income, and gross regional product provide an indication of the potential for growth in aviation activities at an airport. **Exhibit 2B** summarizes the socioeconomic history and projections for the six-county primary commercial service area and the state of New Mexico.

Population in the six counties comprising the primary service area grew at an average annual rate of 2.27 percent between 1970 and 2000. Between 2000 and 2013, the rate slowed to an average of 1.52 percent. Population in the six-county region is forecast to grow from an estimate of 1,068,018 in 2013 to 1,498,294 in 2035, which is an annual growth rate of 1.55 percent. The state of New Mexico is forecast to grow 1.23 percent annually, suggesting that the forecast growth in the primary service area will be stronger than the state as a whole.

Employment in the primary service area grew at a 3.75 percent average rate between 1970 and 2000. Between 2000 and 2014, the average rate has been just 0.86 percent. After the recession in 2007-08, employment declined until 2011. Through 2013, employment had not reached the pre-recession level. Employment in the six-county region is forecast to average 1.78 percent annually through 2035, compared to 1.62 percent for the state.

Per capita personal income (PCPI) inflation-adjusted to 2009 dollars also dipped with the recession, and had not regained the level at the start of the recession as of 2013. Inflation-adjusted PCPI, is forecast to grow at an annual average of 1.52 percent for the MSA and 1.51 percent for the state, through 2035.



LEGEND

Major Airline Service

Regional Airline Service (as of March 2015)

Primary Air Service Area

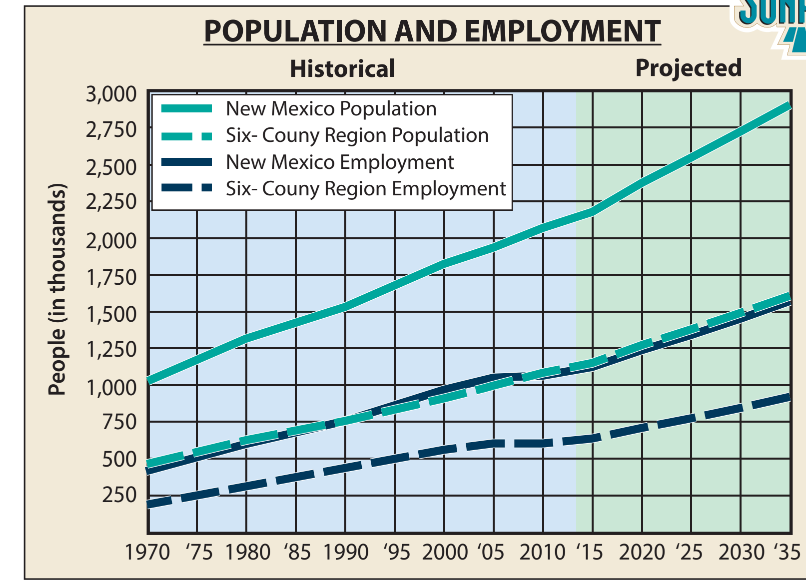
General Aviation Service Area

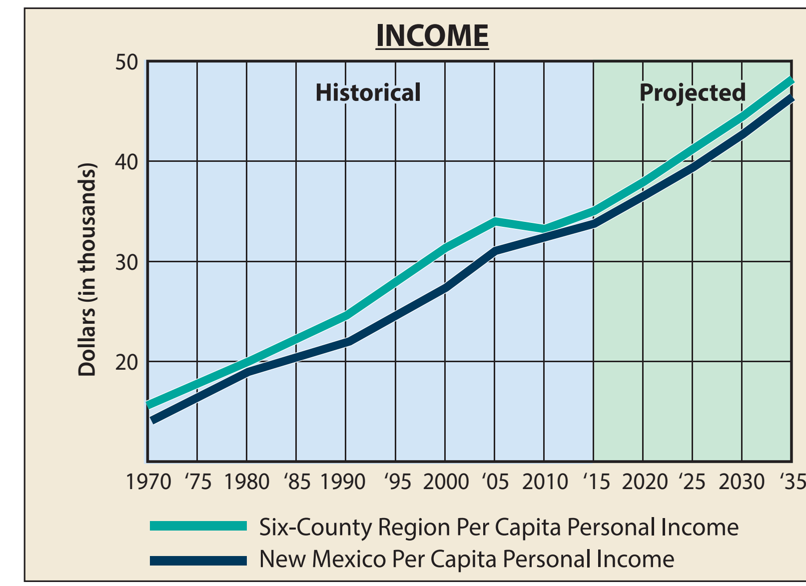
Exhibit 2A
AIRPORT SERVICE AREA

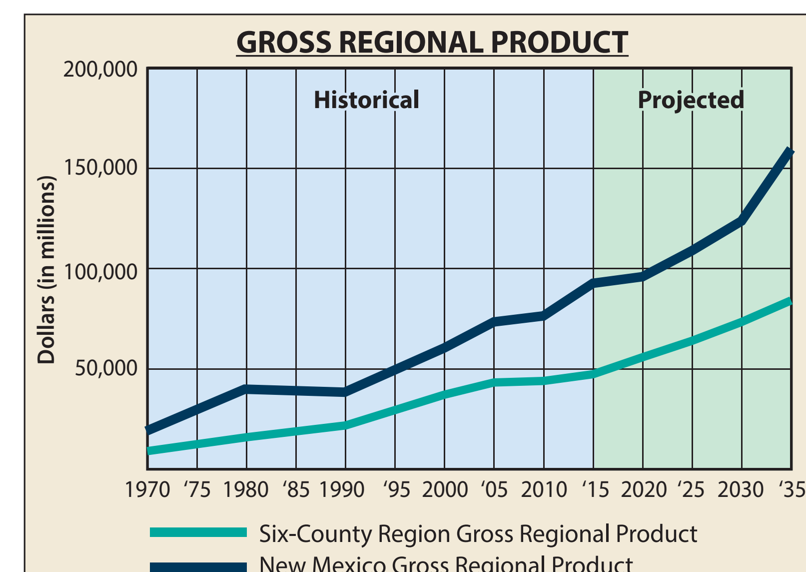
	Population		Employment		Income - PCPI ($2009)		Gross Regional Product ($millions)	
	New Mexico	Six-County Region[1]	New Mexico	Six-County Region[1]	New Mexico	Six-County Region[1]	New Mexico	Six-County Region[1]
YEAR								
1970	1,016,000	448,049	398,903	184,230	14,268	15,007	19,387	9,097
1980	1,302,894	616,064	597,035	300,256	18,948	19,837	34,940	16,245
1990	1,515,069	716,459	761,394	424,042	21,980	24,536	38,527	21,924
2000	1,819,046	877,284	964,673	556,091	27,363	31,622	60,502	37,165
AAGR 1970-2000	**1.96%**	**2.27%**	**2.99%**	**3.75%**	**2.19%**	**3.80%**	**5.86%**	**7.29%**
2001	1,831,690	890,599	968,930	557,461	29,211	33,370	61,460	37,549
2002	1,855,309	909,331	979,942	561,757	29,087	32,997	62,491	38,375
2003	1,877,574	925,749	999,282	571,124	29,278	32,874	66,123	39,936
2004	1,903,808	944,044	1,023,307	586,032	30,203	33,634	71,565	42,727
2005	1,932,274	965,568	1,046,746	599,306	31,044	34,306	73,448	43,253
2006	1,962,137	988,515	1,076,098	619,354	31,891	35,238	75,401	44,160
2007	1,990,070	1,008,132	1,100,590	632,079	32,622	35,508	76,578	44,190
2008	2,010,662	1,023,011	1,103,135	629,847	33,469	35,610	77,068	43,560
2009	2,036,802	1,037,395	1,071,162	608,976	32,201	34,210	75,308	44,133
2010	2,059,179	1,049,197	1,060,445	599,061	32,404	33,801	76,422	44,010
2011	2,077,919	1,060,474	1,065,888	599,211	32,794	33,972	76,432	43,621
2012	2,083,540	1,065,066	1,083,458	610,217	33,053	34,341	78,388	44,835
2013	2,085,287	1,068,018	1,101,300	621,397	33,391	34,689	80,395	46,082
2014[2]	2,127,499	1,095,598	1,119,388	632,752	33,767	35,142	92,713	47,363
AAGR 2000-2014	**1.06%**	**1.52%**	**1.00%**	**0.86%**	**1.41%**	**0.71%**	**2.89%**	**1.63%**
2020	2,351,724	1,244,558	1,233,809	704,759	36,545	37,983	95,986	55,831
2025	2,487,227	1,336,188	1,337,199	770,094	39,409	40,993	108,975	64,023
2030	2,613,332	1,421,666	1,448,470	840,619	42,701	44,456	123,751	73,408
2035	2,727,118	1,498,294	1,568,236	916,685	46,432	48,379	159,689	84,158
AAGR 2014-2035	**1.23%**	**1.55%**	**1.62%**	**1.78%**	**1.53%**	**1.53%**	**2.62%**	**2.78%**

[1]Bernalillo, Sandoval, Torrance, Valencia, Santa Fe, Los Alamos Counties
[2]2014 Figures are an Interpolated estimate.
MSA: Metropolitan Statistical Area
PCPI - Per Capita Personal Income
AAGR: Average Annual Growth Rate

Source: Historical population from the U.S. Census Bureau, Population Division.
Source: Population projections from New Mexico County Population Projections July 1, 2010 to July 1, 2040, Geospatial and Population Studies Group, University of New Mexico. Released November 2012.
Source: Employment and Income from Woods & Poole Complete Economic and Demographic Data Source (CEEDS) 2014.







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Gross regional product (GRP) is similar to gross domestic product, but on a regional rather than national level. It is also adjusted for inflation to 2009 dollars. GRP dipped in 2009-10 as a result of the recession and has yet to regain its pre-recession level. GRP is forecast to grow an average of 2.79 percent annually through 2035 in the primary service area, and 3.17 percent annually for the state as a whole.

NATIONAL AVIATION TRENDS

Each year, the FAA updates and publishes a national aviation forecast. Included in this publication are forecasts for the large air carriers, regional/commuter air carriers, general aviation, and FAA workload measures. The forecasts are prepared to meet budget and planning needs of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and the general public. The current edition when this chapter was prepared was FAA *Aerospace Forecasts – Fiscal Years 2015-2035*, published in March 2015. The FAA primarily uses the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets. The following discussion is summarized from the FAA Aerospace Forecasts.

Since its deregulation in 1978, the U.S. commercial air carrier industry has been characterized by boom-to-bust cycles. The volatility that was associated with these cycles was thought by many to be a structural feature of an industry that was capital intensive but cash poor. However, the great recession of 2007-09 marked a fundamental change in the operations and finances of U.S. airlines. Air carriers fine-tuned their business models to minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel efficient aircraft. To increase operating revenues, carriers initiated new services that customers were willing to purchase and started charging separately for services that were historically bundled in the price of a ticket. The industry experienced an unprecedented period of consolidation with four major mergers in five years. These changes along with capacity discipline exhibited by carriers have resulted in a fifth consecutive year of profitability for the industry in 2014. Looking ahead, there is optimism that the industry has been transformed from that of a boom-to-bust cycle to one of sustainable profits.

U.S. ECONOMIC OUTLOOK

According to the FAA forecast report, as the economy recovers from the most serious economic downturn and slow recovery since the Great Depression, aviation will continue to grow over the long run. Fundamentally, demand for aviation is driven by economic activity. As economic growth picks up, so will growth in aviation activity. The FAA forecast calls for passenger growth over the next 20 years to average 2.0 percent annually. The steep decline in the price of oil in 2014 and into 2015 is a catalyst for a short lived uptick in passenger growth; however, growth is anticipated to be somewhat muted, primarily due to the uncertainty that surrounds the U.S. and global economies.

U.S. economic performance in 2014 continued to be mixed, with modest growth in real GDP and real incomes, a slowly falling unemployment rate, and oil prices and consumer inflation remaining in check. The economy grew at an average annual rate of 2.6 percent in fiscal year (FY) 2014 after expanding 1.8 percent in FY 2013. GDP growth was strong in the second half of 2014 after shrinking in the second quarter primarily due to adverse weather conditions spurred on by the polar vortex. There were favorable signs in 2014 as the housing market continued to improve, the stock market entered record territory, and the labor market saw steady improvement with almost 2.8 million new jobs created during the year, the best figure since 1999. The unemployment rate fell steadily throughout 2014 from 7.2 percent to 5.6 percent by December.

In the medium term, (the three-year period between 2016 and 2019), U.S. economic growth is projected to average 2.6 percent per year with rates ranging between 2.4 and 2.7 percent. Income growth picks up during the same period, averaging 3.2 percent per year. For the balance of the forecast period, annual average growth of U.S. real GDP and real income slow to around 2.4 and 2.5 percent, respectively. The long-term stability of U.S. economic growth depends on sustained growth in the workforce and capital stock, along with improved productivity and competitiveness.

U.S. TRAVEL DEMAND

By year end of federal FY 2014, the U.S. commercial aviation industry consisted of 16 scheduled mainline air carriers that used large passenger jets (over 90 seats) and 70 regional carriers that used smaller piston, turboprop, and regional jet aircraft (up to 90 seats) to provide connecting passengers to the larger carriers. Mainline and regional carriers offer domestic and international passenger service between the U.S. and foreign destinations, although regional carrier international service is confined to the border markets in Canada, Mexico, and the Caribbean. Twenty-six all-cargo carriers were providing domestic and/or international air cargo service at the end of 2014.

According to FAA, shaping today's commercial air carrier industry are three distinct trends: (1) continuing industry consolidation and restructuring; (2) continued capacity discipline in response to external shocks; and (3) the proliferation of ancillary revenues.

The restructuring and consolidation of the U.S. airline industry that began in the aftermath of the terror attacks of September 11, 2001 continued in 2014. During 2014, Southwest continued to integrate the former AirTran network into its operations, while American and U.S. Airways moved ahead with combining their networks and reservation systems. Consequently, when compared to 2007, 5.7 percent fewer domestic available seat miles (ASMs) were flown and 2.9 percent fewer passengers were carried domestically in 2014. This has had clear implications with both the average size of aircraft and load factors increasing.

One of the most striking outcomes of industry restructuring has been the unprecedented period of capacity discipline (achieving higher passenger loads through scheduled flight and fleet mix consolidation primarily), especially in domestic markets. Between 1978 and 2000, ASMs in domestic markets increased at an average annual rate of four percent per year, recording only two years of decline. Even though domestic ASMs shrank by 6.9 percent in FY 2002, following the events of September 11, 2001, growth resumed and by FY 2007, domestic ASMs were 3.6 percent above the FY 2000 level. However, since FY 2007, ASMs in the U.S. domestic market have decreased by 5.7 percent, as the industry responded first to the sharp rise in oil prices (up 155 percent between 2004 and 2008) and then the Great Recession that followed (2008-2009).

The 5.7 percent reduction in domestic capacity since 2007 has not been shared equally between the mainline carriers and their regional counterparts. To better match demand to capacity, the mainline carriers contracted out “thin” routes to their regional counterparts because they could provide lift at a lower cost, or simply removed the capacity altogether. In 2014, the mainline carrier group provided 6.3 percent less capacity than it did in 2007 (and carried 3.6 percent fewer passengers). Capacity flown by the regional group has shrunk by 1.9 percent over the same five-year period (with passengers carried decreasing by 0.7 percent).

The most recent trend to take hold is that of ancillary revenues. Carriers generate ancillary revenues by selling products and services beyond that of an airplane ticket to customers. This includes the un-bundling of services previously included in the ticket price, such as checked bags and on-board meals, and by adding new services, such as boarding priority. As a result of capacity reduction and the introduction of ancillary revenue sources, U.S. passenger carriers posted net profits for the fifth consecutive year in 2014.

Factors Affecting Local Travel Demand

Many factors will influence travelers’ decisions for travel. When there are multiple commercial service airports within a reasonable driving distance, airports may experience “leakage” of passengers to other airports. Other factors such as flight schedules, airfares, non-stop service destinations, parking availability, and services available will also influence a traveler’s decision. Another factor is the surface transportation system. For some, it might be worthwhile to drive to a destination rather than fly.

The Albuquerque metropolitan area is the largest population center in the state and the Sunport is by far the busiest commercial service airport offering the greatest level of service. There are approximately 1.57 million people living within a four-hour drive time of the Sunport, which is approximately 76 percent of the state’s population. Leakage to other airports is not a significant issue for the Sunport.

Another major factor at the Sunport has been the Wright Amendment.

Another major factor at the Sunport has been the Wright Amendment. Key to the development of Dallas-Ft. Worth International Airport was an agreement by the airlines to move their operations to the new airport from Love Field and Ft. Worth’s Meacham Airport. Southwest Airlines was not founded until after the agreement, but before the opening of DFW in 1974. The airline’s original business model was for intrastate service in the regulated airline environment, and it felt that having to drive to DFW would seriously affect that model.

With the Airline Deregulation Act of 1979, interstate opportunities for a low cost airline such as Southwest and other start-ups grew. The Wright Amendment of 1979 was a federal law that primarily intended to limit both non-stop and direct flights into and out of Dallas Love Field to destinations within Texas and neighboring states. As Southwest expanded its service across the country and grew into one of the nation's largest airlines, airports such as the Sunport that were located within the "Wright Zone" essentially became mini-hubs for service into and out of Love Field. Since direct flights were not allowed, passengers would fly into ABQ, deplane, then on another ticket enplane to their intended destination. As a result, ABQ and similar Wright Zone airports gained enplanements.

In 1997, an amendment was passed adding Kansas, Mississippi, and Alabama to the permissible "Wright Zone." This had little effect as Southwest did not begin service in any of those states until recent years. In 2005, the state of Missouri was added by amendment, opening up non-stop flights from Love Field to Kansas City and St. Louis.

In 2006, a compromise was reached capping the number of airline gates at Love Field to 20. Under the agreement, the ban on direct flights was lifted immediately, and the full Wright Amendment was set to sunset on October 16, 2014. This reduced the number of enplanements at ABQ as passengers could stay on their original flight. There was, however, still connecting passengers between those flights. More on the effects of the Wright Amendment will be discussed in later sections.

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth. However, the judgment of the forecast analyst, based upon professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast.

The development of aviation forecasts proceeds through both analytical and judgmental processes.

The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered in the aviation industry include trend line projections, correlation/regression analysis, and market share analysis. By developing several projections for each aviation demand indicator, a reasonable planning envelope will emerge. The selected forecast may be one of the individual projections or a combination of several projections based on local conditions. The selected forecast will almost always fall within the planning envelope. Some combination of the following forecasting techniques is utilized to develop the planning envelope for each demand indicator.

Trend line projections are probably the simplest and most familiar of the forecasting techniques. By fitting growth curves to historical demand data, then extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection does serve as a reliable benchmark for comparing other projections.

Correlation analysis provides a measure of the direct relationship between two separate sets of historic data. Should there be a reasonable correlation between the data, further evaluation using regression analysis may be employed.

Regression analysis measures the statistical relationship between dependent and independent variables, yielding a "correlation coefficient." The correlation coefficient (Pearson's "r") measures associations between the changes in a dependent variable and independent variable(s). If the r-squared (r^2) value (coefficient determination) is greater than 0.90, it indicates good predictive reliability. A value below 0.90 may be used with the understanding that the predictive reliability is lower.

Market share analysis involves a historical review of aviation activity as a percentage, or share, of a larger regional, state, or national aviation market. A historical market share trend is determined providing an expected market share for the future. These shares are then multiplied by the forecasts of the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections, but can provide a useful check on the validity of other forecasting techniques.

It is important to note that forecasts will age, and the farther a forecast is from the base year, the less reliable it may become, particularly due to changing local and national conditions. Nonetheless, the FAA indicates that a Master Plan include a 20-year forecast for the airport. Facility and financial planning usually require at least a 10-year view, since it often takes more than five years to complete a major facility development program. However, it is important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

A wide range of factors is known to influence the aviation industry and can have significant impacts on the extent and nature of air service provided in both the local and national markets. Technological advances in aviation have historically altered, and will continue to change, the growth rates in aviation demand over time. The most obvious example is the impact of jet aircraft on the aviation industry, which resulted in a growth rate that far exceeded expectations. Such changes are difficult, if not impossible, to predict, and there is simply no mathematical way to estimate their impacts.

Using a broad spectrum of local, regional, and national socioeconomic and aviation information and analyzing the most current aviation trends, forecasts are presented for the following demand indicators:

- COMMERCIAL PASSENGER SERVICE
  - Annual Enplaned Passengers
  - Operations and Fleet Mix
- COMMERCIAL AIR CARGO
  - Enplaned Tons
- AIR TAXI AND MILITARY
  - Local and Itinerant Operations
- GENERAL AVIATION
  - Based Aircraft
  - Based Aircraft Fleet Mix
  - Local and Itinerant Operations
- PEAKING CHARACTERISTICS
  - Airline Enplanement Peaks
  - Operations Peaks

COMMERCIAL PASSENGER SERVICE FORECASTS

To evaluate commercial service potential at the Sunport and the facilities necessary to properly accommodate present and future airline activity, two basic elements must be forecast: annual enplaned passengers and annual airline operations. Annual enplaned passengers serve as the most basic indicator of demand for commercial passenger service activity. The combination of enplanements and deplanements generally equals the total passengers using an airport. The annual number of enplanements is the figure utilized by the FAA to determine various entitlement funding levels for commercial service airports.

The term "enplanement" refers to a passenger boarding an airline flight. Enplaning passengers are then described in terms of either "originating" or "connecting/transferring." Originating passengers depart a specific airport for a destination or hub airport to connect/transfer to another flight. Connecting/transferring passengers are those who have departed from another location and are using the airport as an intermediate stop. These passengers may disembark their originating flight to wait in the terminal for their next flight or could simply remain on the aircraft at an intermediary stop as a "through" passenger. Albuquerque International Sunport and airports similar to it tend to have mostly originating passengers, while larger hubs like those in Dallas, Denver, or Phoenix could have a more significant percentage of passengers who are connecting/transferring.

An important resource utilized in aviation demand forecasting is the annual FAA aviation forecasts.

As indicated earlier, an important resource utilized in aviation demand forecasting is the annual FAA aviation forecasts. The most recent available version is the *FAA Aerospace Forecasts – Fiscal Years 2015-2035*, published in March 2015. The FAA forecasts a variety of aviation demand indicators on an annual basis. In the most current edition, fiscal year 2013 is presented as the baseline, with 2014 showing as an estimate and years 2015 through 2035 as projections. Many forecasting elements utilized in this analysis will consider the history and projections presented by the FAA in its annual forecast.

FAA COMMERCIAL AIR CARRIER FORECASTS

Although the recession has been officially over for several years, in 2014, carriers continued to deal with economic uncertainties as business travel budgets remained strained, unemployment was still high relatively high compared to pre-recession years, and uncertainty surrounding federal fiscal policy remained. In such an uncertain but slowly improving economic environment, industry capacity growth was somewhat restrained (up 2.2 percent in 2014), after only a 0.8 percent increase in 2013. Given the minimal increase in seats available to the traveling public, carriers were still able to raise airfares despite the slow growth in demand. Higher airfares and ancillary revenue, coupled with flat to falling fuel prices, resulted in U.S. carriers being profitable in 2014.

According to the FAA, system capacity is projected to increase modestly (up 2.4 percent) in 2015. In the domestic market, mainline carrier capacity expanded only slightly (1.8 percent) in 2014 but is projected to grow at a more robust rate (2.6 percent) in 2015, while capacity for the regional carriers is projected to post its first increase since FY 2011 (up 4.0 percent). In the international sector, capacity is forecast to increase slowly in the Atlantic and Pacific markets and increase modestly in the Latin market, resulting in an overall international capacity increase of 1.6 percent in 2015.

Passenger demand growth is in line with capacity growth in 2015, with system revenue passenger miles (RPMs) forecast to grow 2.6 percent. Supported by a growing U.S. and world economy, year over year RPM growth is forecast to be 2.5 percent on average over the period from 2015-2035. Over the same time period, system capacity growth averages 2.5 percent per year.

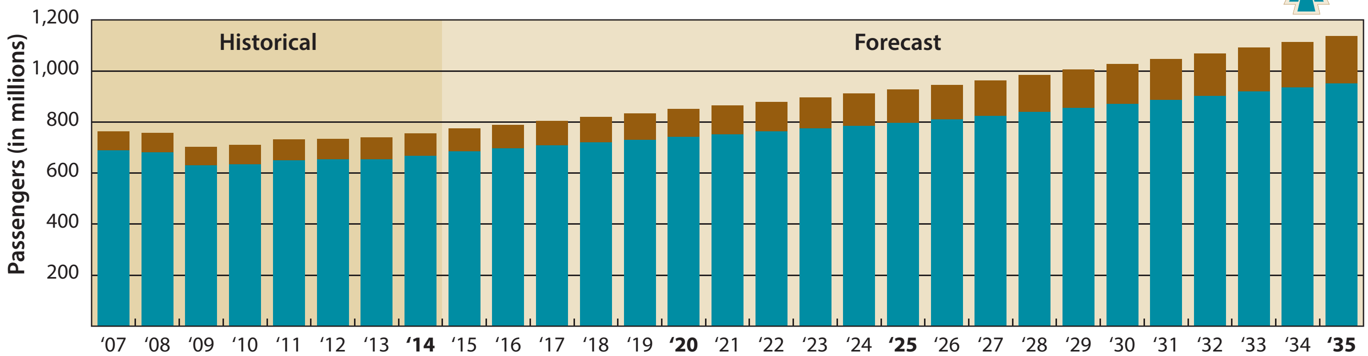
System passengers are projected to increase an average of 1.9 percent a year, with mainline carriers growing at 2.0 percent a year, slightly higher than their regional counterparts (up 1.6 percent). By 2035, U.S. commercial air carriers are projected to fly 1.71 trillion ASMs and transport 1.14 billion enplaned passengers – a total of 1.44 trillion passenger miles.

Over the forecast period, domestic enplanements are projected to grow at an average annual rate of 1.7 percent.

Planes will remain crowded, with load factors projected to grow moderately during the early years of the forecast period, then tapering during the mid to latter years to 84.2 percent in 2035 (up 0.6 points compared to the beginning of the forecast period in 2015).

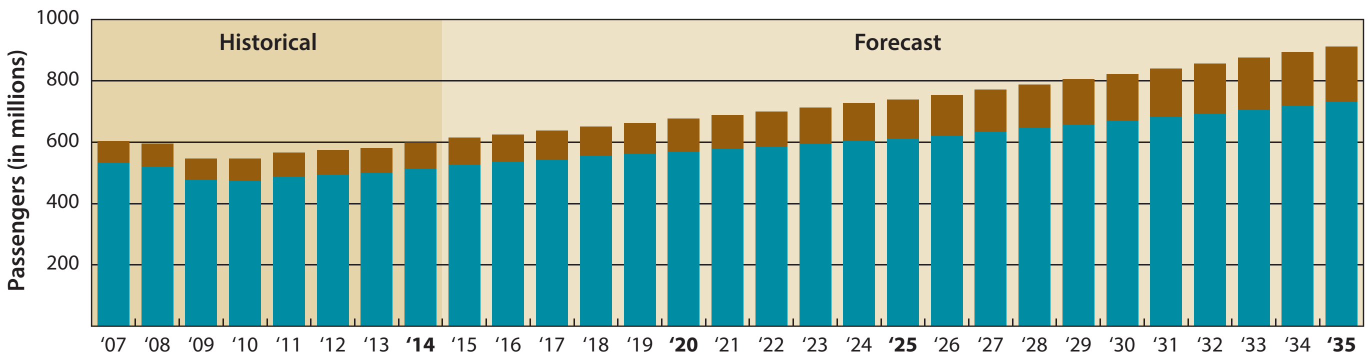
The FAA forecasts indicate that enplanements are forecast to grow (up 2.6 percent) in 2015, following a 2.1 percent increase in 2014. Over the forecast period, domestic enplanements are projected to grow at an average annual rate of 1.7 percent, with mainline and regional carriers growing at the same rate. **Exhibit 2C** presents the annual historical and forecast enplanement totals for both large air carriers and commuter airlines in the U.S. as forecast by the FAA.

U.S. AIR CARRIER PASSENGER ENPLANEMENTS[1]



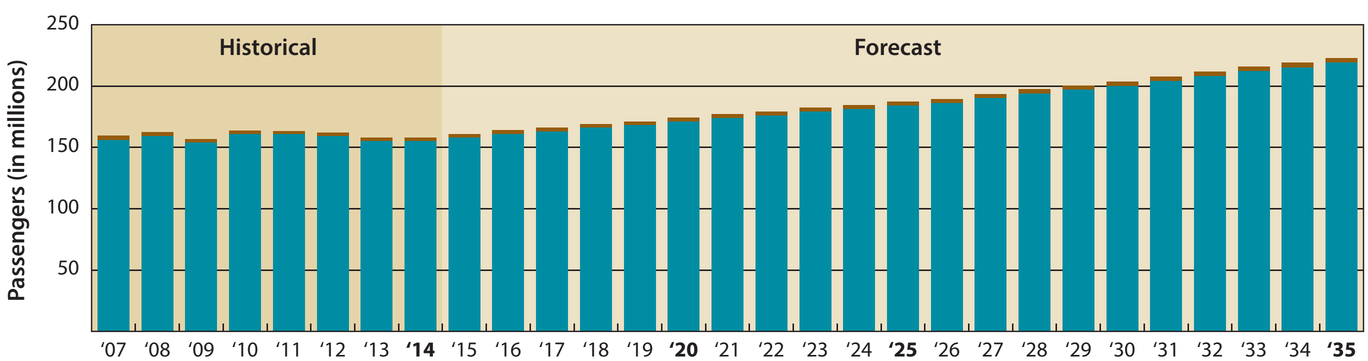
SOURCE	2014	2020	2025	2035	AAGR 2014-2035
Domestic Revenue Enplanements	668.4	742.0	796.6	951.0	1.69%
International Revenue Enplanements	88.0	109.1	130.8	185.5	3.61%
TOTAL	756.3	851.1	927.4	1,136.5	1.96%

U.S. MAINLINE AIR CARRIER PASSENGER ENPLANEMENTS



SOURCE	2014	2020	2025	2035	AAGR 2014-2035
Domestic Revenue Enplanements	513.2	570.5	612.7	731.7	1.70%
International Revenue Enplanements	85.1	105.9	127.4	181.4	3.67%
TOTAL	598.3	676.4	740.2	913.1	2.03%

U.S. REGIONAL AIR CARRIER PASSENGER ENPLANEMENTS



SOURCE	2014	2020	2025	2035	AAGR 2014-2035
Domestic Revenue Enplanements	155.2	171.5	183.9	219.3	1.66%
International Revenue Enplanements	2.9	3.2	3.4	4.0	1.54%
TOTAL	158.1	174.6	187.3	223.3	1.66%

[1]Sum of U.S. Mainline and Regional Air Carrier Enplanements
Note: All figures measured in millions

Source: FAA Aerospace Forecast - Fiscal Years 2015-2035

Exhibit 2C
U.S. COMMERCIAL AIR CARRIER FORECASTS

FAA COMMERCIAL AIRCRAFT FLEET FORECAST

The commercial passenger carrier fleet is undergoing transformation. The mainline carriers are retiring older, less fuel-efficient aircraft (e.g., 737-300/400/500, 757/767, and MD-80) and replacing them with more technologically advanced A319/320 and 737-700/800/900 aircraft. The regional carriers are growing their fleet of 70-90 seat regional jet aircraft and reducing their fleet of 50-seat jet aircraft. The total number of aircraft in the U.S. commercial fleet (including regional carriers) is estimated at 6,727 for 2014, a decrease of 86 aircraft from 2013. This total includes 3,774 mainline air carrier passenger aircraft (over 90 seats), 740 mainline air cargo aircraft, and 2,213 regional carrier aircraft (jets, turboprops, and pistons).

Mainline passenger jet aircraft are forecast to increase 1.5 percent annually through 2034.

The number of passenger jets in the mainline fleet is estimated to have increased by 41 in 2014. After 2014, the mainline aircraft fleet was projected to add approximately 64 aircraft annually, totaling 5,112 aircraft in 2035. The mainline narrow-body fleet (including the Embraer 190s) was projected to grow by 42 aircraft annually from 2015-2035. The wide-body fleet (including the Boeing 787 and Airbus A-350) was projected to grow by 24 aircraft annually over the same period. Mainline passenger jet aircraft are forecast to increase 1.5 percent annually through 2034.

The regional passenger aircraft fleet is estimated to have decreased by 86 aircraft in 2014, as decreases in 50-seat and smaller regional jets and turboprops outpace production of new larger regional jets. After 2014, the regional carrier fleet (turboprops and jets) is expected to decrease by 0.2 percent per year over the remaining years of the forecast period, totaling 2,141 aircraft in 2035. The number of regional jets (90 seats or fewer) is projected to grow from 1,642 in 2014 to 1,953 in 2034, an average annual increase of 0.8 percent. All of the growth in regional jets over the forecast period occurs in the larger, 70- to 90-seat aircraft category. During the forecast period, all regional jets of 50 or less seats are projected to be retired from the fleet.

Large cargo jet aircraft are forecast to grow from an estimate of 740 in 2014 to a total 1,182 aircraft in 2035. The narrow-body, cargo jet fleet is projected to increase by two aircraft per year over the 20-year forecast period as older 757s and 737s are converted to cargo service. The wide-body, cargo jet fleet is projected to increase by 14 aircraft annually. **Exhibit 2D** presents the FAA commercial aircraft fleet forecast through 2025.

HISTORICAL COMMERCIAL PASSENGER ACTIVITY

Table 2C provides a history of passenger enplanements at the Sunport since 1980. Over the past 34 years, the Sunport has seen its passenger activity grow from 1,149,664 in 1980, to an all-time high of 3,346,639 in 2007. Since 2007, annual enplanements have declined annually primarily due to the national recession from 2007-2009, the relatively slow recovery, and the repeal of the Wright Amendment. The annual growth rate over that 34-year period averaged 2.25 percent, but the table shows how traffic has fluctuated annually.

Since 1980, year-over-year enplanements have declined 16 times and increased 18 times. A drop of 9.15 percent in 2009 was the largest single-year decline. The largest single-year increase of 19.78 percent occurred in 1983.

Enplanement levels at airports often correspond to the state of the national economy. Enplanement levels at the Sunport have generally followed this trend. In the early 1980s, the economy was in the middle of a recession and enplanement levels declined. From 1983 through 1990, the Sunport had nine consecutive years of enplanement growth. In 1991, enplanement levels declined at a time of a mild economic recession. From 1992 through 1994, the Sunport saw three consecutive growth years, including reaching over three million enplanements for the first time in 1994.

The enplanement levels at the Sunport remained relatively steady at around three million from 1994 through 2003. This was a period of economic growth, followed by a mild recession, culminating with the terrorist attacks on September 11, 2001. From 2004 through 2007, the Sunport had four consecutive years of growth.

In 2008, the nation entered the Great Recession which lasted more than a year, with a historically slow recovery to follow. While airline restructuring and consolidation continued through this time, this recession brought about even more capacity discipline from the airlines. That coupled with the Wright Amendment compromise in 2006 had an effect at the Sunport. Since 2008, Sunport enplanements have declined every year through 2014. At the end of 2014, the total enplanements dipped below 2.5 million for the first time since 1991.

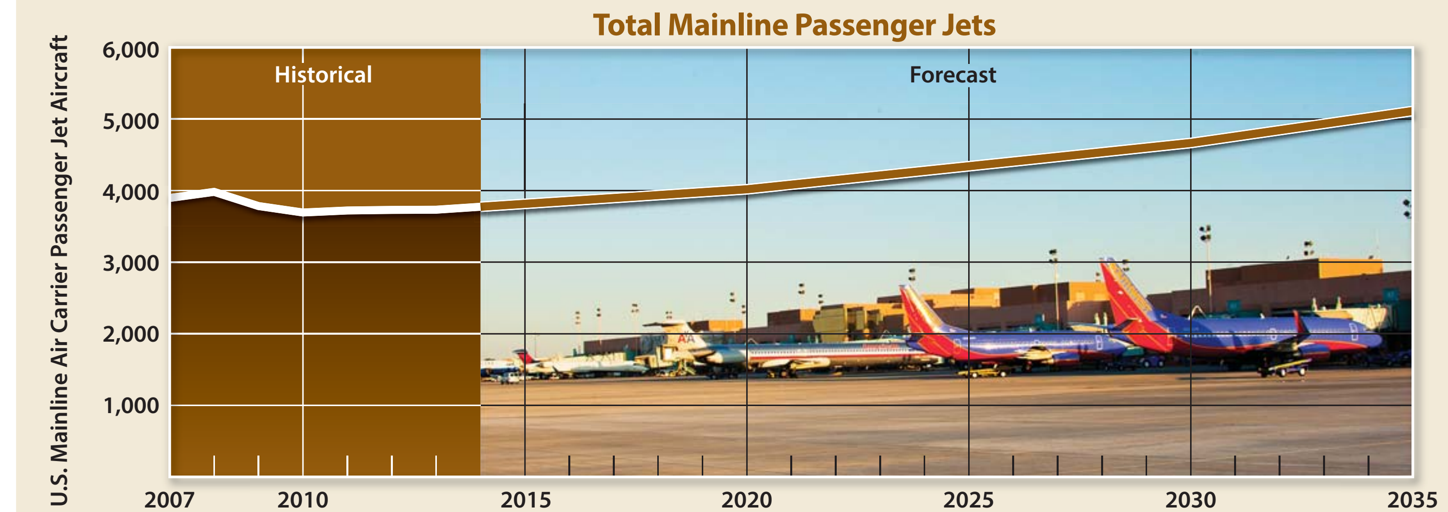
TABLE 2C
Historic Passenger Enplanements
Albuquerque International Sunport

Year	Annual Enplaned	% Change Year over Year
2014	2,446,388	-3.89%
2013	2,545,286	-5.88%
2012	2,704,305	-5.51%
2011	2,861,945	-1.79%
2010	2,914,129	-1.51%
2009	2,958,903	-9.15%
2008	3,256,793	-2.68%
2007	3,346,639	2.61%
2006	3,261,463	0.52%
2005	3,244,646	2.32%
2004	3,171,185	4.24%
2003	3,042,174	-0.68%
2002	3,063,036	-0.80%
2001	3,087,703	-1.86%
2000	3,146,208	0.46%
1999	3,131,951	2.03%
1998	3,069,629	-2.20%
1997	3,138,663	-5.12%
1996	3,308,048	7.96%
1995	3,064,069	-0.45%
1994	3,077,974	9.63%
1993	2,807,489	6.76%
1992	2,629,792	6.84%
1991	2,461,434	-1.21%
1990	2,491,702	5.47%
1989	2,362,570	10.16%
1988	2,144,678	0.15%
1987	2,141,538	3.65%
1986	2,066,129	7.60%
1985	1,920,113	11.51%
1984	1,721,869	16.93%
1983	1,472,570	19.78%
1982	1,229,446	13.45%
1981	1,083,733	-5.73%
1980	1,149,664	-7.25%

Source: Airport records

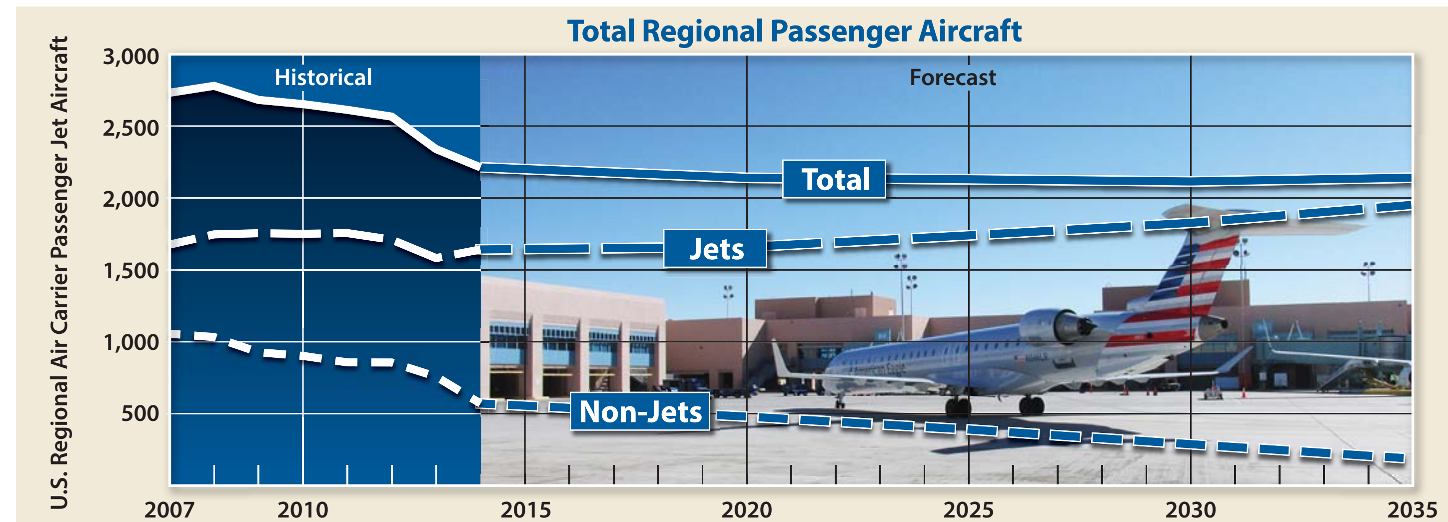
U.S. MAINLINE AIR CARRIER PASSENGER JET AIRCRAFT

	2014	2020	2025	2035	AAGR 2014-2035
Large Narrow Body					
2 Engine	3,155	3,291	3,512	4,016	1.16%
3/4 Engine	5	5	0	0	0.00%
Large Wide Body					
2 Engine	481	594	731	983	3.46%
3/4 Wide Body	40	31	0	0	0.00%
Total Large Jets	**3,681**	**3,921**	**4,243**	**4,999**	**1.47%**
Total Regional Jets	**93**	**97**	**97**	**113**	**0.93%**
Total Mainline Passenger Jets	**3,774**	**4,018**	**4,340**	**5,112**	**1.46%**



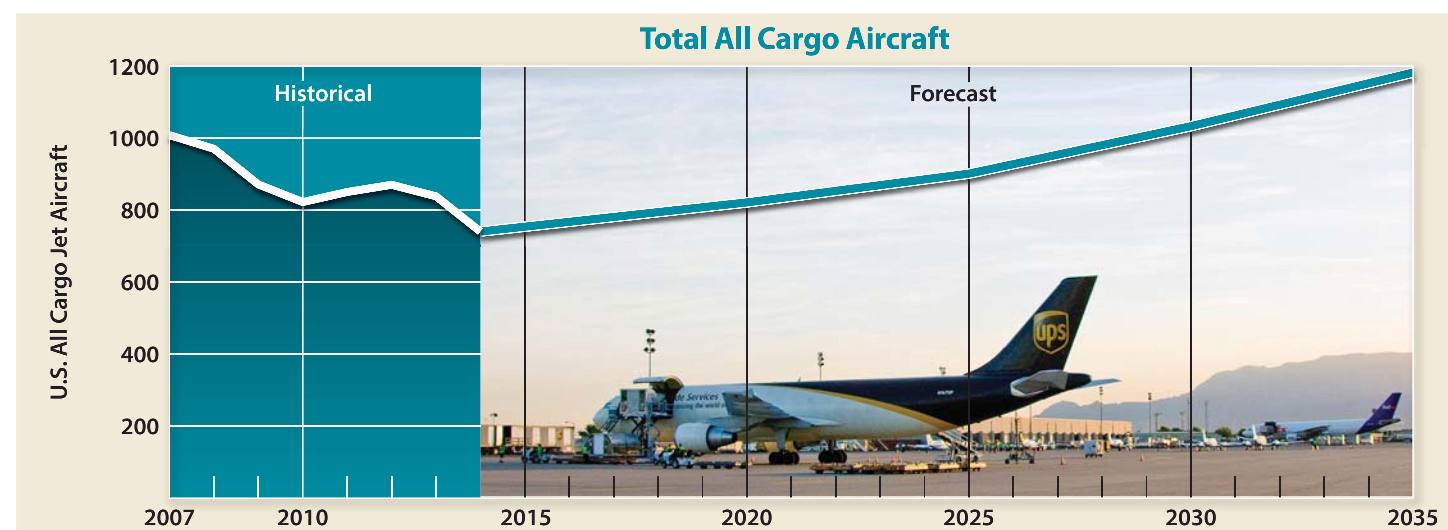
U.S. REGIONAL AIR CARRIER PASSENGER JET AIRCRAFT

	2014	2020	2025	2035	AAGR 2014-2035
Less than 30 Seats					
Turboprop	483	388	293	79	-8.26%
31-40 Seats					
Turboprop	37	30	22	6	-8.30%
Over 40 Seats					
Turboprop	51	62	75	103	3.40%
Jet	1,642	1,660	1,740	1,953	0.83%
Non-Jet Total	**571**	**480**	**390**	**188**	**-5.15%**
Jet Total	**1,642**	**1,660**	**1,740**	**1,953**	**0.83%**
Total Regional Passenger Aircraft	**2,213**	**2,140**	**2,130**	**2,141**	**-0.16%**



U.S. ALL CARGO JET AIRCRAFT

	2014	2020	2025	2035	AAGR 2014-2035
Large Narrow Body					
2 Engine	191	213	243	306	2.27%
3/4 Engine	15	13	0	0	0.00%
Large Wide Body					
2 Engine	296	356	439	628	3.65%
3/4 Engine	238	239	219	248	0.20%
Total All Cargo Jets	**740**	**821**	**901**	**1,182**	**2.26%**



Source: FAA Aerospace Foreast - Fiscal Years 2015-2035

Exhibit 2D
NATIONAL U.S. COMMERCIAL FLEET FORECAST

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Enplanements by Airline

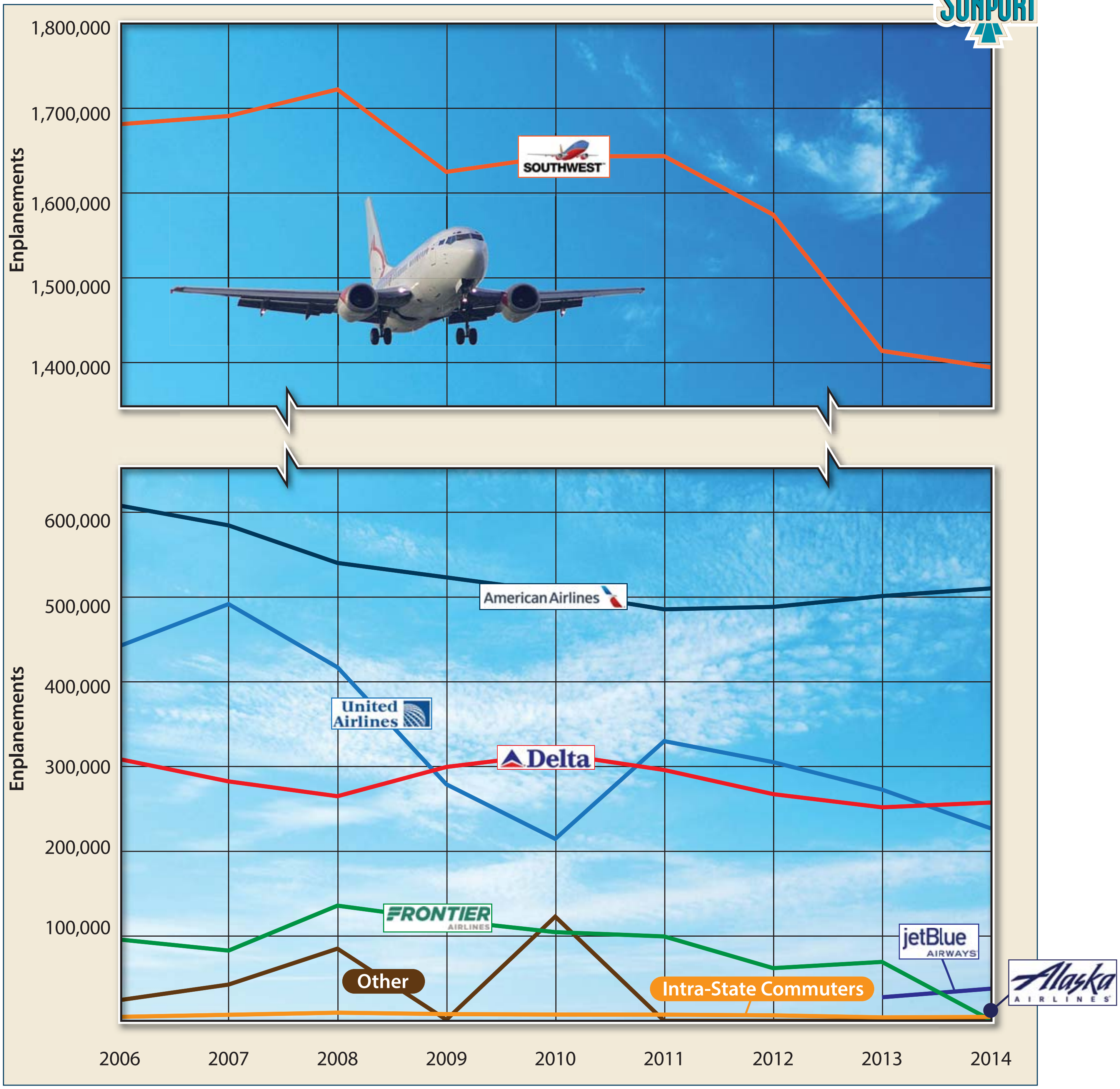
Table 2D presents annual enplanements by airline for 2006, 2010, and 2014. Southwest Airlines has been the dominant carrier at the Sunport, currently accounting for 57 percent of total enplanements in 2014. American Airlines has consistently been second, accounting for 20.9 percent in 2014. Delta was next in 2014 with 10.5 percent, followed by United with 9.3 percent of enplanements. In 2013, American was acquired by U.S. Airways and the airline took the name of its acquisition. As of March 2015, some flights were still branded as U.S. Airways. Ultimately, all U.S. Airways flights will be operated under American Airlines.

TABLE 2D
Passenger Enplanements by Airline
Albuquerque International Sunport

	2006	%	2010	%	2014	%
MAINLINE/REGIONAL CARRIERS						
Alaska Air	-	-	-	-	11,673	0.5%
American Airlines[1]	607,992	19.2%	506,026	17.4%	510,246	20.9%
Delta Air Lines[2]	308,760	9.8%	315,161	10.8%	257,523	10.5%
Frontier Airlines/Horizon	92,934	2.9%	104,631	3.6%	827	0.0%
jetBlue Airways	-	-	-	-	37,923	1.6%
Southwest Airlines	1,681,206	53.2%	1,643,286	56.4%	1,394,358	57.0%
United Airlines[3]	442,199	14.0%	214,666	7.4%	227,018	9.3%
TOTAL	**3,133,091**	**99.1%**	**2,783,770**	**95.5%**	**2,439,568**	**99.7%**
COMMUTER CARRIERS						
Great Lakes Airlines	4,693	0.1%	4,183	0.1%	-	-
Mesa Airlines	24,407	0.8%	-	-	-	-
Pacific Wings/NM Airlines	-	-	3,235	0.1%	4,651	0.2%
Other[4]	-	-	122,941	4.2%	2169	0.1%
TOTAL	**29,100**	**0.9%**	**130,359**	**4.5%**	**6,820**	**0.3%**
TOTAL COMBINED	**3,162,191**	**100.0%**	**2,914,129**	**100.0%**	**2,446,388**	**100.0%**

[1]American Airlines and U.S. Airways have merged and will go forward as American Airlines.
[2]Delta figures include Northwest and Northwest regionals operating until acquired then discontinued in 2010.
[3]United merged with Continental and figures include Continental Express Airlines which operated through 2012.
[4]Includes Skywest, Express Jet, Westward Airways, Chautauqua Airlines, Allegiant, Sun Country, Republic, & Xtra.

A variety of commuter airline operators have served the Sunport. Those regional airlines that operate under the umbrella of a larger airline are included in the enplanement figures for the parent airline. In December of 2014, Pacific Wings/New Mexico Airlines, which provided service between Albuquerque and several other in-state airports, significantly reduced operations. In the first quarter of 2015, Boutique Air began service to Silver City and is considering adding additional flights. **Exhibit 2E** shows the historical enplanements by airline since 2006.



LEGEND

Alaska Air/Horizon Air	Frontier Airlines	United Airlines[3]
American Airlines[1]	JetBlue Airways	Intra-State Commuters[4]
Delta Air Lines[2]	Southwest Airlines	Other[5]

[1]American Airlines and U.S. Airways have merged and will go forward as American Airlines
[2]Delta figures include Northwest and Northwest regionals operating until acquired then discontinued in 2010
[3]United merged with Continental and figures include Continental Express Airlines which operated through 2012
[4]Great Lakes, New Mexico Airlines
[5]Includes Mesa, Skywest, Express Jet, Westward, Chautauqua, Allegiant, Sun Country, Republic, & Xtra.

Exhibit 2E
HISTORICAL ENPLANEMENTS BY AIRLINE

Top 20 Origin and Destination Markets

The U.S. Department of Transportation (DOT) maintains a rolling quarterly survey of 10 percent of all airline tickets sold for each commercial service airport. This Origin & Destination (O&D) Survey provides information on passengers' starting and ending cities and shows the volume of traffic between city pairs. The figures do not include "through" connecting/transfer passengers.

Information obtained from the O&D Survey provides final destinations for those traveling from the Sunport. Origin and destination data is typically useful in examining the strength of the local market l to and from other markets. **Table 2E** shows the top 20 markets for 2004, 2009, and the 12-month period ending September 2014.

TABLE 2E
Top Twenty Destination Markets
Albuquerque International Sunport

Rank	Destination	2004	Destination	2009	Destination	2014
1	Phoenix	246,720	Los Angeles Area	183,750	Los Angeles Area	157,880
2	Los Angeles Area	197,770	Phoenix	183,360	Phoenix	154,320
3	Dallas Area	157,780	Dallas Area	144,160	San Francisco Bay Area	129,620
4	Washington D.C. Area	138,720	San Francisco Bay Area	136,190	Dallas Area	124,320
5	San Francisco Bay Area	132,770	Washington D.C. Area	131,160	Washington D.C. Area	109,960
6	Las Vegas	114,890	Denver	127,980	Las Vegas	109,270
7	Chicago Area	82,780	Las Vegas	108,650	New York Area	92,320
8	Houston Area	76,730	New York Area	85,730	Denver	87,170
9	New York Area	76,270	Chicago Area	83,380	Houston Area	72,250
10	San Diego	69,450	Houston Area	82,630	Chicago Area	63,790
11	Denver	67,430	San Diego	65,670	Seattle	63,360
12	Seattle	58,060	Seattle	61,780	San Diego	63,000
13	Orlando	49,770	Orlando	47,460	Portland	43,750
14	Atlanta	41,000	Portland	44,310	Boston	35,150
15	Portland	40,530	Salt Lake City	37,900	Atlanta	34,880
16	Minneapolis/St. Paul	35,640	Minneapolis/St. Paul	37,320	Orlando	34,630
17	Austin	34,460	Austin	36,870	Salt Lake City	33,270
18	Kansas City	33,350	San Antonio	36,010	Austin	31,470
19	Tucson	35,710	Philadelphia	34,820	Minneapolis/St. Paul	26,520
20	San Antonio	32,770	Tucson	33,130	Kansas City	26,270
Top 20 Total		1,722,600		1,702,260		1,493,200
Total Originations		2,547,510		2,511,400		2,108,010
Total Enplanements (T-100)		3,078,463		2,880,914		2,382,511
% Originations		82.75%		87.17%		88.48%

Source: USDOT - Bureau of Transportation Statistics, Origin-Destination Survey of Airline Passenger Traffic; T-100 Market Enplaned Passengers

In 2014, the top destination for passengers departing from the Sunport was the Los Angeles area, accounting for 7.1 percent of ABQ originations. Next was Phoenix, which accounted for 6.8 percent of ABQ originations. The top five was rounded out by the San Francisco Bay area (5.8 percent), the Dallas-Ft. Worth area (5.3 percent), and the Washington D.C. area (5.2 percent). A total of 52.5 percent of all passenger enplanements are destined for one of the top 20 markets.

The top destination for passengers departing from the Sunport was the Los Angeles area.

The top 20 destination markets have remained relatively consistent since 2004. There has been some jockeying near the bottom with destinations such as Austin, Tucson, and Kansas City moving into and out of the top 20 over the years.

As of March 2015, the Sunport has non-stop service to 18 of its top 20 destination markets. Only Boston and Austin, ranked 14th and 18th respectively, do not currently have non-stop service from the Sunport. In addition, if considered individually, Reagan National (DCA) and LaGuardia (LGA), would still be in the top 20 and neither has non-stop service from the Sunport; however, there is service to BWI in Baltimore and JFK in New York.

Passengers that change flights at an airport are still counted as enplaned passengers at that airport, but are not considered as originations unless they do so on under a separate ticket itinerary. In those cases, the passenger must check-in again for the new flight. Prior to the Wright Amendment compromise in 2006, this was a method used by travelers from outside the Wright Zone to fly into or out of Love Field in Dallas. In such cases, the travelers had a ticket from their origination with an end destination of ABQ. Upon arriving at ABQ, they checked in with another ticket originating from ABQ to their final destination. The result is a potential inflation of the originations from the Sunport. It also had a slight effect of increasing enplanements as some passengers that would have been on a direct flight had to get off the plane and then check-in to re-board the same plane under a different flight number.

Table 2F presents a history of originations from the Sunport since 1993. From 1993 through 2001, originations averaged 87.2 percent of enplaned passengers. Following the events of 9-11, enplanements declined briefly then began to grow again. However, the percentage of originations declined, averaging 84.3 percent over the next seven years through 2008. The recession of 2008-09 marked the beginning of the ongoing downturn in enplanements. From 2008 to 2013, originations averaged 86.2 percent of enplanements. So even though the 2006 Wright Amendment compromise, allowing direct flights to states other than those immediately adjacent Texas, would seem to reduce the percentage of originations, it does not appear to have had a significant effect. In 2014, 88.5 percent of enplanements were originations. With the sunset of the Wright Amendment in the fourth quarter of 2014, its full impact will start to be experienced in 2015. Through February, enplanements were down 6.6 percent over the same period in 2014.

TABLE 2F
Enplanement vs Origination Comparison
Albuquerque International Sunport

	ABQ All-Carriers T-100 Enplaned	ABQ Originations	Percent ABQ Originations
1993	2,674,582	2,333,080	87.2%
1994	2,930,071	2,597,090	88.6%
1995	2,974,539	2,564,900	86.2%
1996	3,279,318	2,853,770	87.0%
1997	3,074,662	2,706,820	88.0%
1998	2,972,152	2,621,520	88.2%
1999	3,042,824	2,704,445	88.9%
2000	3,034,923	2,663,740	87.8%
2001	2,974,068	2,594,040	87.2%
2002	2,885,649	2,468,120	85.5%
2003	2,948,946	2,447,620	83.0%
2004	3,078,463	2,547,510	82.8%
2005	3,167,743	2,679,150	84.6%
2006	3,173,679	2,747,550	86.6%
2007	3,236,324	2,720,030	84.0%
2008	3,156,189	2,649,420	83.9%
2009	2,880,914	2,511,400	87.2%
2010	2,825,966	2,399,050	84.9%
2011	2,767,082	2,354,140	85.1%
2012	2,629,074	2,269,920	86.3%
2013	2,476,672	2,171,400	87.7%
2014	2,382,511	2,108,010	88.5%

Note: 2014 T-100 Enplaned based upon 12 months ending Sept. 30
Source: USDOT - Bureau of Transportation Statistics, Origin-Destination Survey of Airline Passenger Traffic; T-100 Market Enplaned Passengers

Non-Stop Destinations

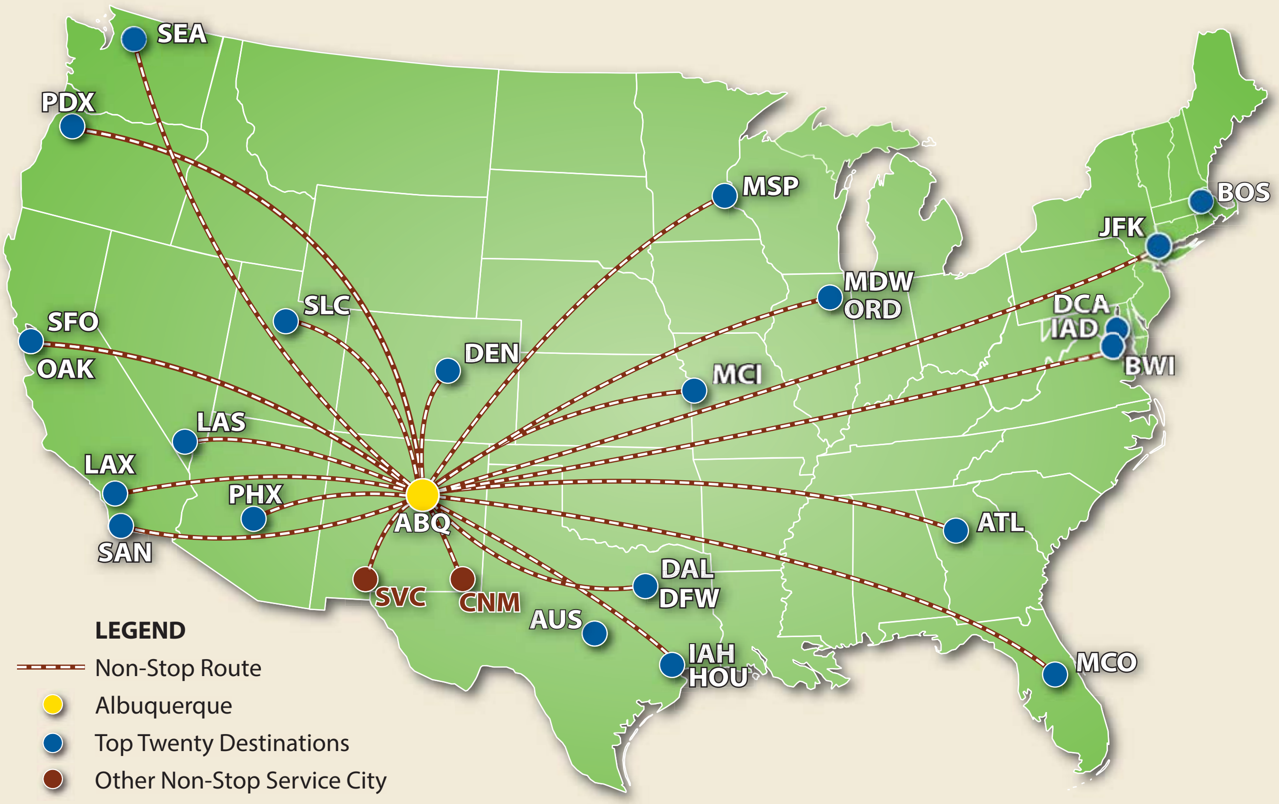
Table 2G provides a comparison of the number of daily flights and their non-stop destinations from the Sunport in 1992, 2000, 2009, and 2014. In 2000, there were 149 non-stop destinations, which was an increase over the 130 flights offered in 1992. Since then, the number of non-stop flights has decreased. In 2014, there were 83 daily non-stop flights. The table indicates that the number of non-stop flights within 400 miles of the Sunport has decreased significantly from 82 in 2000 to 25 in 2014. The short flights of less than 200 miles (mostly intrastate) have dropped from 33 in 2000 to only three in 2014. In fact, there have been periods since 2000 when there were no flights of less than 200 miles.

Each of the top 20 is served by at least one daily non-stop flight except for Austin, TX and Boston, MA.

Exhibit 2F lists the top 20 destination markets as of 2014. Each of the top 20 is served by at least one daily non-stop flight except for Austin, TX and Boston, MA. Several of the top 20 markets have more than one commercial service airport. The exhibit also lists the top 20 destinations and the non-stop service available currently.

ALBUQUERQUE AREA

TOP TWENTY DESTINATIONS/NON-STOP SERVICE CITY PAIRS



Non-Stop Service Cities (2015)	Top Twenty Destinations (2014)
• New York, NY (JFK)	1. Los Angeles, CA (LAX)
• Washington D.C. (BWI)	2. Phoenix, AZ (PHX)
• Atlanta, GA	3. San Francisco, CA (OAK, SFO)
• Chicago, IL (MDW, ORD)	4. Dallas Area (DAL, DFW)
• Orlando, FL	5. Washington D.C. (BWI)
• Minneapolis/St. Paul, MN	6. Las Vegas, NV (LAS)
• Kansas City, MO	7. New York, NY (JFK)
• Dallas, TX (DAL, DFW)	8. Denver, CO (DEN)
• Houston, TX (HOU, IAH)	9. Houston, TX (IAH, HOU)
• Denver, CO	10. San Diego, CA (SAN)
• Phoenix, AZ	11. Chicago, IL (MDW, ORD)
• Los Angeles, CA (LAX)	12. Seattle, WA (SEA)
• San Diego, CA	13. Portland, OR (PDX)
• Las Vegas, NV	14. Boston, MA (BOS)
• San Francisco Area, CA (SFO, OAK)	15. Atlanta, GA ATL
• Portland, OR	16. Orlando, FL (MCO)
• Seattle, WA	17. Salt Lake Cit, UT (SLC)
• Silver City, NM	18. Austin, TX (AUS)
• Carlsbad, NM	19. Minneapolis/St. Paul, MN (MSP)
	20. Kansas City, MO (MCI)

Exhibit 2F: TOP TWENTY DESTINATIONS/
NON-STOP SERVICE CITY PAIRS

TABLE 2G
Non-Stop Service 1992, 2000, 2009, 2014
Albuquerque International Sunport

	Daily Flights			
	1992	2000	2009	2014
Less than 200 miles				
Alamogordo	1	1	2	0
Durango	2	2	0	0
Farmington	11	9	0	0
Gallup	0	3	0	0
Las Cruces	2	3	0	0
Los Alamos	5	1	0	3
Roswell	7	6	0	0
Santa Fe	3	0	0	0
Silver City	2	3	2	0
Taos	0	1	0	0
Subtotal	**33**	**29**	**4**	**3**
From 200 to 400 miles				
Amarillo	2	2	1	0
Carlsbad	3	4	2	2
Clovis	2	3	2	0
Colorado Springs	2	3	0	0
Denver	10	10	12	8
El Paso	5	7	2	0
Lubbock	2	2	1	0
Midland/Odessa	1	1	1	0
Phoenix	19	20	15	12
Tucson	2	1	2	0
Subtotal	**48**	**53**	**38**	**22**
From 400 to 600 miles				
Dallas	16	15	16	13
Las Vegas	8	5	6	5
Salt Lake City	3	5	7	3
Subtotal	**27**	**25**	**29**	**21**
From 600 to 800 miles				
Austin	0	0	0	0
Houston	5	7	9	7
Kansas City	0	3	1	1
Los Angeles Area	6	8	7	6
San Diego	0	3	2	3
Subtotal	**11**	**21**	**19**	**17**
From 800 to 1,000 miles				
Minneapolis	0	2	2	1
St. Louis	3	7	1	0
San Francisco Area	3	2	4	4
Subtotal	**6**	**11**	**7**	**5**
From 1,000 to 1,200 miles				
Chicago	3	2	5	5
Portland	0	0	1	1
Seattle	0	1	1	2
Subtotal	**3**	**3**	**7**	**8**
From 1,200 to 1,400 miles				
Cincinnati	0	2	0	0
Atlanta	0	3	3	3
Subtotal	**0**	**5**	**3**	**3**
Over 1,400 miles				
Baltimore	0	0	1	2
Orlando	0	1	2	1
Pittsburgh	2	0	0	0
Tampa	0	1	1	0
Washington, D.C.	0	0	1	0
New York	0	0	0	1
Subtotal	**2**	**2**	**5**	**4**
Total Non-Stops	**130**	**149**	**112**	**83**

ENPLANEMENT FORECASTS

As discussed in this chapter's introduction, the first step involved in updating an airport's forecasts include reviewing previous forecasts in comparison to actual activity to determine what changes, if any, may be necessary. After that comes the consideration of any new factors that could impact the forecasts, such as changes in the socioeconomic climate or the effects of changes in air carrier services.

Previous Enplanement Forecasts

There are three existing forecasts of enplanement activity at the Sunport to consider:

- Those generated for the previous Master Plan (base year 1999)
- Those generated for the West Area Support Plan (base year 2008)
- FAA Terminal Area Forecast (base year 2014)

The forecasts from the previous Master Plan are nearly 16 years old, while the West Area Support Plan forecasts are seven years old. Since 1999, there have been two national recessions, significant restructuring and consolidation in the airline industry, as well as changes and subsequent repeal of the Wright Amendment.

The FAA TAF forecast is published annually and is utilized by the FAA as a starting point for considering the reasonableness of master plan forecasts. **Table 2H** presents three enplanement forecasts developed previously for the Sunport. The historical enplanements are also included. As can be seen, both the 1999 and the 2008 forecasts have become outdated considering the effects of the 2007-2009 national recession, subsequent slow recovery, and changes in the airline industry which have led to a decline in enplanements at the Sunport. As a result, only the FAA TAF will be given further consideration.

TABLE 2H
Previous Enplanement Forecasts
Albuquerque International Sunport

Year	Actual Enplanements	1999 Airport Master Plan	2008 West Area Support Plan	2015 FAA TAF
2005	3,244,646	3,902,000		
2010	2,914,129	4,703,000	3,000,000	
2014	2,446,388			2,395,478
2015			3,600,000	2,105,663
2020			4,100,000	2,415,367
2025		7,105,000		2,665,158
2030			5,100,000	2,930,422
2035				3,230,043
AAGR	-3.47%	3.04%	2.69%	1.43%

AAGR: Average annual growth rate

It should be noted, however, the FAA TAF forecasts are based upon the T-100 enplanement data collected by the U.S. Department of Transportation (DOT) and presented in **Table 2F**. This includes revenue passengers only. The enplanement history, presented in Chapter One and in **Tables 2C** and **2D,** is from the Albuquerque Aviation Department records. They are collected from monthly landing and enplanement reports provided by each airline operating at the Sunport. A primary difference is that the airlines also report non-revenue passengers (e.g., flight crews repositioning, free travel earned from frequent flyer programs) at the Sunport. These travelers do not pay ticket taxes to DOT, so they are not factored into FAA entitlement grants to the Sunport. They do, however, pay a passenger facility charge (PFC) to the Sunport in support of capital improvements and debt service. For comparison to the FAA TAF, the following analysis will be based upon the TAF then an adjustment will be made to account for the additional passengers included in the Aviation Department records.

Time-Series and Regression Enplanement Forecasts

A variety of time-series extrapolation and regression analyses using multiple variables, including aviation and socioeconomic factors, were tested. It is optimal to have an "r^2" value near or above 0.90, which would represent a very strong correlation and greater statistical reliability. Four time-series trend lines were analyzed and are shown in **Table 2J**. As can be seen, none of them produced an "r^2" value that met the threshold for reliability.

TABLE 2J
Enplanement Projections
Time-Series Analyses

		History	FORECAST			
	r^2	2014	2020	2025	2035	AAGR
TIME-SERIES						
Time Series from 1970	0.78	2,446,388	4,016,352	4,337,574	4,980,017	3.44%
Time Series from 1980	0.54	2,446,388	3,702,823	3,939,313	4,412,294	2.85%
Time Series from 1990	0.00082	2,446,388	2,988,773	2,994,193	3,005,032	0.98%
Time Series from 2000	0.51	2,446,388	2,445,541	2,230,985	1,801,873	-1.45%

Several variables were tested to determine if they might produce more reliable statistical trends. The variables tested were: 1) Six-County Population; 2) Six-County Employment; 3) Gross Regional Product; 4) US Domestic Available Seat Miles; 5) US Commercial Enplanements. The results of the regression analysis did not provide values near the 0.90 threshold. The highest "r^2" value was 0.38 for the Six-County Population. The lack of a correlation is not surprising as after reasonably predictive growth up through 2000, enplanements have experienced a less predictive pattern over the last 15 years. As a result, the regression trends were not considered further in this analysis.

Travel Propensity Factor

There are a variety of local factors that affect the potential for passengers within an area to travel. A key statistic to consider is the relationship between an airport's enplanements levels to the populace it serves. The ratio of enplanements to population is termed the Travel Propensity Factor (TPF). **Table 2K** presents a historical review of the TPF for the Sunport since 2000.

TABLE 2K
Market Share and Travel Propensity Projections
Albuquerque International Sunport

Year	ABQ T-100 Enplanements	Six-County Population	Travel Propensity Factor	US Domestic Enplanements (Millions)	ABQ Market Share
2000	3,034,923	877,284	3.459	641.2	0.4733%
2001	2,974,068	890,599	3.339	625.3	0.4756%
2002	2,885,649	909,331	3.173	574.6	0.5022%
2003	2,948,946	925,749	3.185	587.3	0.5021%
2004	3,078,463	944,044	3.261	628.5	0.4898%
2005	3,167,743	965,568	3.281	669.5	0.4732%
2006	3,173,679	988,515	3.211	668.4	0.4748%
2007	3,236,324	1,008,132	3.21	688.5	0.4701%
2008	3,156,189	1,023,011	3.085	680.7	0.4637%
2009	2,880,914	1,037,395	2.777	630.8	0.4567%
2010	2,825,966	1,049,197	2.693	634.8	0.4452%
2011	2,767,082	1,060,474	2.609	650.1	0.4256%
2012	2,629,074	1,065,066	2.468	653.8	0.4021%
2013	2,476,672	1,068,018	2.319	654.4	0.3785%
2014	2,341,855	1,095,598	2.138	668.4	0.3504%
Constant Market Share of U.S. Domestic Enplanements (AAGR = 1.69%)					
2020	2,600,000	1,244,558	2.089	742.0	0.3504%
2025	2,791,000	1,336,188	2.089	796.6	0.3504%
2035	3,332,000	1,498,294	2.224	951.0	0.3504%
Constant Travel Propensity Factor (AAGR = 1.50%)					
2020	2,660,000	1,244,558	2.138	742.0	0.3585%
2025	2,856,000	1,336,188	2.138	796.6	0.3585%
2035	3,203,000	1,498,294	2.138	951.0	0.3368%
FAA TAF 2015 (AAGR = 1.54%)					
2020	2,415,367	1,244,558	1.941	742.0	0.3255%
2025	2,665,158	1,336,188	1.995	796.6	0.3346%
2035	3,230,043	1,498,294	2.156	951.0	0.3396%

AAGR: Average Annual Growth Rate (2014-2035)

The ratio of enplanements to population is termed the Travel Propensity Factor (TPF).

The TPF is predominantly impacted by the proximity of an airport to other regional airports with higher levels of service or "hub" airports. Regional airports with higher TPF ratios tend to be located farther from hub airports in relatively isolated areas. These airports generally have a service area that extends into adjacent, well-populated regions or have some type of air service advantage that attracts more of those passengers that might otherwise choose to drive to a more distant hub airport. Generally, the higher the TPF, the more likely air travelers are to utilize the local airport for commercial service.

As can be seen in the table, the TPF has generally trended with the condition of the national economy. Even in the 1990s when the economy was growing, the Sunport generally experienced growth in enplanements per resident within its primary service area. Following the 2001 recession and the events of 9-11, the TPF declined from 3.46 in 2000 to 3.17 in 2002. The ratio reached to 3.28 for 2005, but has generally declined every year through 2014. Just prior to the recession of 2007-2009, the TPF was at 3.21. Since the recession, the TPF has steadily declined to 2.138 in 2014. **Table 2K** presents an enplanement projection based upon maintaining the current TPF over the forecast period. This would result in 3.20 million passengers by 2035.

Market Share of U.S. Domestic Enplanements

The next forecasting method employed considers the Sunport's market share of U.S. domestic enplanements. National forecasts of U.S. domestic enplanements are compiled each year by the FAA and take into account the state of the economy, fuel prices, and prior year developments. The most recent publication is FAA *Aerospace Forecasts – Fiscal Years 2015-2035*. Three enplanement forecasts based on the Sunport's historic market share of total air carrier enplanements have been developed and are also presented in **Table 2K**. Since 2002, the Sunport's market share has generally been declining.

The table presents an enplanement projection based upon the Sunport maintaining the 2014 market share into the future. This would result in a slow increase in the TPF over the planning period, and result in 3.33 million passengers by 2035. By contrast, the constant TPF projection results in a slow but continued decline in the market share over the forecast period.

TAF High/Low Range

The FAA will review the forecasts for the Master Plan and will approve them provided they are consistent with the TAF by being within 10 percent in years 1-5 and within 15 percent thereafter. To better define the range of reasonableness both a high and low range based on the TAF forecast are considered. The low range forecast results in an annual growth rate of 1.16 percent and a long-term enplanement total of 2.75 million. The high range TAF forecast results in an annual growth rate of 1.65 percent and a long-term enplanement level of 3.71 million enplanements.

Selected Enplanement Forecast

Table 2K and **Exhibit 2G** include the FAA TAF for comparison to the two projections. The TAF is below both projections through 2025, but by 2035 is slightly higher than the TPF projection. As a result, the TPF and market share would decline through the short-term but begin to recover over the remainder of the forecast period. Given the continued decline during the slow recovery of the recession and the potential for further impacts in the near term from the sunset of the Wright Amendment and airline capacity reduction, the FAA Terminal Area Forecasts appear to be a reasonable estimate for use in the master plan.

As mentioned earlier, the TAF is based upon Form T-100 data as reported to the FAA by the airlines and is based primarily upon revenue passengers. The airlines also report passenger totals to the

Albuquerque Aviation Department that include non-revenue passengers. Both of these reports have importance in the Master Plan process, but the total passengers reported to the Aviation Department will affect facility requirement planning more. As a result, an adjustment is made to the TAF forecast to account for non-revenue passengers.

The T-100 enplanements as a percentage of the Aviation Department enplanements have fluctuated slightly around 97 percent over the past 20 years. In line with this average, the TAF projections are adjusted 3.1 percent to account for the additional passengers reported to the Aviation Department. This forecast is presented in **Table 2L** as well as on **Exhibit 2G**.

TABLE 2L
Passenger Enplanement Forecast
Albuquerque International Sunport

	2014	2020	2025	2035
FAA Terminal Area Forecast – 2015	2,341,855	2,415,367	2,665,158	3,230,043
ABQ Total Enplanement Forecast	2,446,388	2,490,000	2,750,000	3,330,000

AIRLINE OPERATIONS FORECAST

The commercial service fleet aircraft mix defines a number of key parameters in airport planning, including critical aircraft (for pavement design and ramp geometry), terminal complex layout, and maximum stage length capabilities (affecting runway length evaluations). A projection of the fleet mix for the Sunport has been developed by reviewing equipment used by the carriers serving the Sunport. **Exhibit 2H** depicts the aircraft fleet mix and seating capacities of the airlines serving the Sunport. All regional airlines with an affiliation to another carrier are grouped under the parent company.

Changes in equipment, airframes, and engines have always had a significant impact on airlines and airport planning. There are many ongoing programs by the manufacturers to improve performance characteristics. These programs continue to focus on improvements in fuel efficiency. Regional jets also became a larger factor as the airlines looked for ways to reduce costs. Many airlines replaced larger commercial jets, as well as commuter turboprops on smaller emerging routes with regional jets.

Commuter airlines are transitioning to advanced turboprop aircraft and regional jets to fit their market needs. Many of these aircraft have greater seating capacity, lower operating costs, and are considerably more comfortable for the flying public. The regional jets made their initial impact in the 44- to 50-seat range. Regional jet aircraft eventually became available with as few as 37 seats and as many as 100 seats. This bridged a long-existing gap in seating capacity, making regional jets the aircraft of choice at non-hub and small-hub airports.

As the price of fuel rose, however, the 50-seat and smaller regional jets have been found to be less cost-effective than their counterparts over 60 seats. In fact, the higher seat capacity turboprops, such as the Q400, have been more cost-effective than the 50-seat jet carrying the same number of passengers. As a result, the 50-seat regional jets are no longer in production, and can eventually be expected to be

Exhibit 2G
ENPLANEMENT FORECASTS

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Aircraft Type	Alaska Airlines	American Airlines	Delta	jetBlue Airways	Southwest	United Airlines	Average
B767-400						242	242
B767-300		218				181	200
A-321		184		190			187
B757-200		184	180			182	182
B737-900	181		180			167	174
MD-90			160				160
B737-800	163	150	160		175	152	200
MD-88			149				149
A-320			150	150		138	146
B737-300	144				143		143
B737-700	124		124		143	118	143
MD-80		140					140
A-319		128	126			128	127
B737-500					122		122
B717-200			120			117	117
ERJ-190				100			100
CRJ-900			76				76
ERJ-175		76	76				76
ERJ-170			69			72	71
Q400						71	71
CRJ-700		65	65			66	65
ATR-72		64					64
CRJ-100/200		50	50			50	50
ERJ-145		50	50			50	50
Q300						50	50
ERJ-140		44					44
ERJ-135						37	37
Q200						37	37
SF-340						34	34
EMB-120			28			30	29
Beech 1900						19	19

Note: Regional airline aircraft are included in the affiliate airline fleet.

Exhibit 2H
AIRCRAFT SEATING FOR ABQ CARRIERS

eliminated from the fleet. This will occur over time, however, as some regional carriers will maintain them for some services, as well as in codesharing with major airlines that have restrictive scope clauses with pilots' unions that restrict codesharing on aircraft above a certain seating capacity.

In addition, turboprops that have been the workhorses for the small commuter markets are also no longer in production. In fact, the only commuter turboprops still in production are the ATR 42 in the 40- to 60-seat range as well as the Q-400 and ATR-72 each with more than 60 seats. Unless there is a new aircraft manufactured in the range of 10 to 39 seats, smaller markets that cannot support the larger turboprops could lose service from anything over nine-seat aircraft.

Table 2M presents the historical airline operational fleet mix by seat capacity since 1999 and the forecast fleet mix. In 1999, 21.9 percent of the airport's scheduled flights were by aircraft with 39 seats or less. By 2008, this figure had declined to only 2.8 percent, while the 40-59 seat category had increased from 0.8 percent to over 18.3. This change in the operational fleet mix captures the rise of the 50-seat regional jet. By 2014, as the 50-seat regional jet was being phased out, the 40-59 seat category declined to 11.6 percent of operations.

TABLE 2M
Airline Fleet Mix and Operations Forecast
Albuquerque International Sunport

Fleet Mix Seating Capacity	Historical			Forecast		
	1999	2008	2014	2020	2025	2035
>220	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
165-219	2.3%	1.2%	1.7%	1.0%	1.0%	2.0%
145-164	7.7%	3.1%	5.5%	11.0%	12.0%	12.0%
125-144	52.7%	63.5%	51.4%	48.0%	46.0%	42.0%
105-124	14.6%	7.1%	5.1%	5.0%	6.0%	7.0%
91-104	0.0%	0.0%	0.0%	1.0%	2.0%	3.0%
75-90	0.0%	0.0%	11.5%	14.0%	15.0%	17.0%
60-74	0.0%	3.5%	8.1%	11.0%	12.0%	13.0%
40-59	0.8%	18.3%	11.6%	5.0%	2.0%	0.0%
20-39	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%
<19	21.9%	2.8%	5.0%	4.0%	4.0%	3.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Avg. Seats per Departure	106.3	110.9	107.5	107.5	108.5	113.9
Boarding Load Factor	58.7%	69.8%	79.6%	82.0%	83.0%	84.0%
Enplaned per Departure	62.4	77.4	85.6	88.1	90.1	99
Annual Enplanements	3,113,951	3,256,793	2,446,388	2,490,000	2,750,000	3,330,000
Annual Departures	49,931	42,098	28,586	28,300	30,500	35,000
Annual Operations	99,862	84,196	57,172	56,600	61,000	70,000

The table also shows the increase in seating capacity in the 75-90 seat category, which by 2014, accounted for 11.5 percent of operations where there were none in 2008. This is a reflection of the phasing out of smaller 50-seat regional jets (e.g., ERJ 140/145, CRJ-200) and the introduction of larger regional jets (e.g., ERJ 175/190, CRJ 700/900).

The average seats per departure increased from 106.3 in 1999 to 110.9 in 2008. In 2014, the average number of seats per departure declined to 107.5. Over time, the average number of seats per departure can be expected to increase as more capacity (i.e., larger aircraft) continues to be introduced into the system. However, the total number of seats available may continue to decline as the frequency of flights decline in order for airlines to continue to generate a profit.

The boarding load factor (BLF) is defined as the ratio of passengers boarding aircraft compared to the seating capacity of the aircraft. The BLF at the Sunport has increased dramatically since 1999, growing from 58.7 percent to 79.6 percent in 2014. This has occurred at airports across the country as airlines have worked to improve efficiency and reduce costs. In the future, boarding load factors can be expected to continue to grow somewhat.

The majority of commercial operations are forecast to continue to be represented by aircraft in the 125- to 164-seat category.

With an increase in both seating capacity and boarding load factors, the number of passengers on each aircraft flight has also grown significantly over the past 15 years. The average enplanements per departure were 62.4 in 1999. By 2008, the ratio had grown to 77.4, and by 2014, the ratio had jumped to 85.6 enplanements per departure. So along with the 21 percent reduction in enplanements over that period, there has been a 43 percent reduction in the number of commercial service flights.

The majority of commercial operations are forecast to continue to be represented by aircraft in the 125- to 164-seat category. This includes the Boeing 737 series and the A320/21 aircraft. The 50-passenger regional jet aircraft will diminish as regional jets with higher seating capacities increase. Service by smaller commuter turboprops, however, is expected to continue to decline.

AIR CARGO

Air freight includes the combined activities of the scheduled passenger airlines carrying freight on scheduled flights and the dedicated all-cargo carriers. Air mail may also be carried by both the scheduled passenger airlines and all-cargo carriers. Freight and mail together make up air cargo activity at an airport. This section describes the national aviation trends in the air cargo airline industry, historical activity at the Sunport, and future projections of air cargo activity.

NATIONAL AIR CARGO TRENDS

Air cargo activity has historically had a high correlation to gross domestic product (GDP). Other factors that affect air cargo growth are real yields, improved productivity, and globalization. Ongoing trends that are and will continue to improve the air cargo market include the opportunities from open skies agreements, decreasing costs from global airline alliances, and increasing business volumes from e-commerce. At the same time, trends that could limit air cargo growth include increased use of mail substitutes (e-mail) and increased airline costs due to environmental and security restrictions.

Before 2001, air cargo was the fastest growing sector of the aviation industry. From 1994 through 2000, total tons and revenue ton-miles (RTMs) grew at annual average rates of 8.0 and 8.6 percent, respectively. An economic slowdown in the U.S., combined with the collapse in the high-tech industry and a slowing of imports, resulted in declines of 5.0 percent in tons and 3.9 percent in RTMs in 2002. Domestic RTMs grew modestly through 2007 and then realized a steep decline that coincided with the 2008-2009 national recession. In 2007, RTMs had reached 15.2 billion tons; by 2011, only 12.0 billion RTMs were realized. Domestic RTMs have been growing since 2012 and are forecast to grow 0.6 percent annually through the forecast period. By 2035, RTMs are forecast to reach 14.4 billion.

The FAA notes there are several structural changes that are occurring within the air cargo industry. Among them are the following:

- **Security regulations** – On August 3, 2007, *Recommendations of the 9/11 Commission Act of 2007* was signed into law. Section 1602 of this Act states that air cargo placed on passenger aircraft will receive the same level of screening as passenger-checked baggage. Legislation called for the establishment of a system by 2010 that required 100 percent inspection of cargo transported by passenger aircraft.

- **Market maturation** – The express market in the United States has matured after dramatic growth over the last two decades. This represents the majority of domestic air cargo activity.

- **Modal shift** – Improved service and economics from the use of alternative modes of cargo transported by the integrated cargo carriers (e.g., FedEx and UPS) has matured.

- **Increases in air fuel surcharges** – Fuel costs are a significant factor for all aviation.

- **Increased USPS use of all-cargo carriers** – This initially resulted from the U.S. Postal Service's (USPS) need to improve control over delivery. The trend has continued due to security regulations.

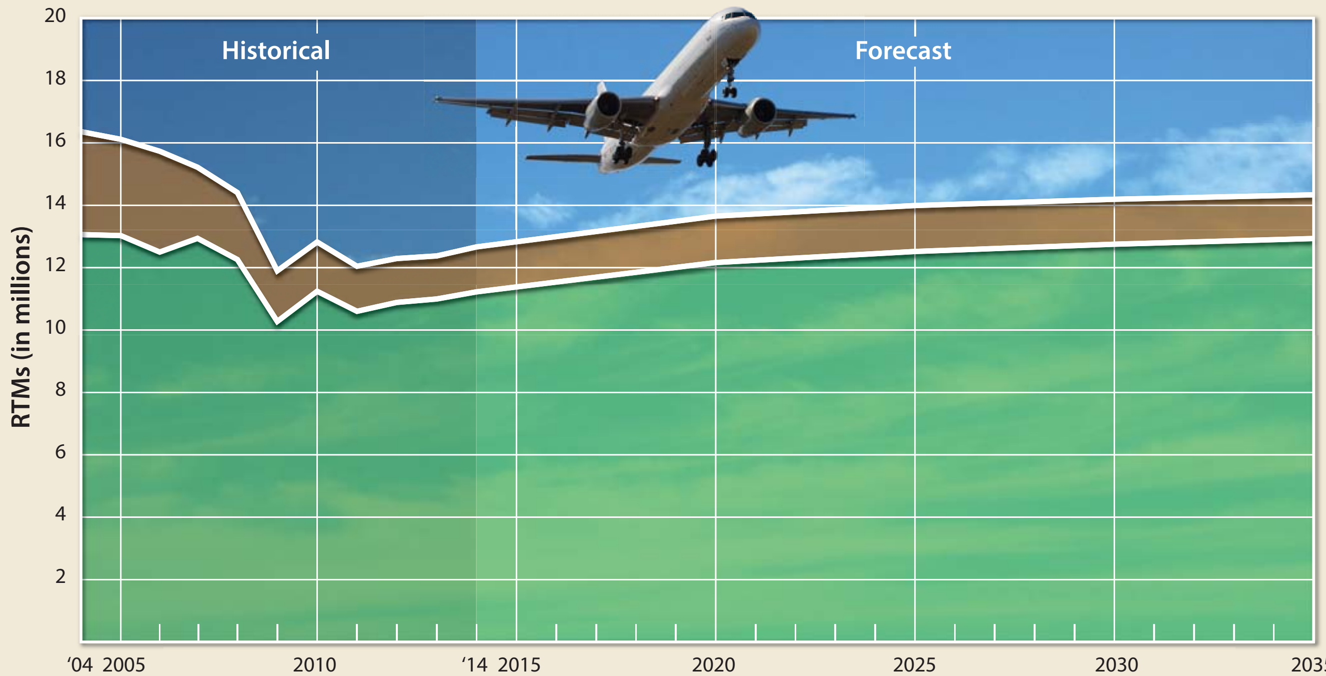
- **Increased use of mail substitutes** – Substitutes such as e-mail affect mail volume. The residual fear of mail because of terrorism has also been a factor.

The FAA forecast for RTMs was based on several specific assumptions exclusive to the air cargo industry. First, security restrictions will remain in place. Second, most of the shift from air to ground transportation has occurred. Finally, long-term cargo activity is tied to economic growth.

The largest growth will continue to be in international cargo, which is projected to grow at an annual average rate of 4.7 percent from 2014 through 2035. Total domestic air cargo is forecast to grow at an annual rate of 0.6 percent over the same period. Within the total domestic RTM, all-cargo carriers are projected to grow 0.7 percent annually while domestic passenger RTMs are forecast to experience -0.1 percent growth. The top half of **Exhibit 2J** depicts the FAA forecasts for total RTMs.

The number of large cargo jet aircraft increased by 17 aircraft in 2014, primarily due to the addition of 757Fs to the FedEx fleet. For the remainder of the forecast period, cargo large jet aircraft at U.S. carriers are forecast to grow at an average annual rate of 1.8 percent to 1,082 aircraft in 2035. The narrow-body,

DOMESTIC AIR CARGO REVENUE TON MILES (RTMs) U.S. COMMERCIAL CARRIER



REVENUE TON MILES[1]	2014	2020	2025	2035	AAGR 2014-2035
All-Cargo Carriers	11,225.6	12,165.2	12,519.7	12,934.1	0.68%
Passenger Carriers	1,440.7	1,488.1	1,472.6	1,401.2	-0.13%
TOTAL	**12,666.2**	**13,653.3**	**13,992.3**	**14,335.3**	**0.59%**

[1]In millions of tons
Source: FAA Aerospace Forecasts 2015-2035

ALBUQUERQUE INTERNATIONAL SUNPORT AIR CARGO TOTAL POUNDS

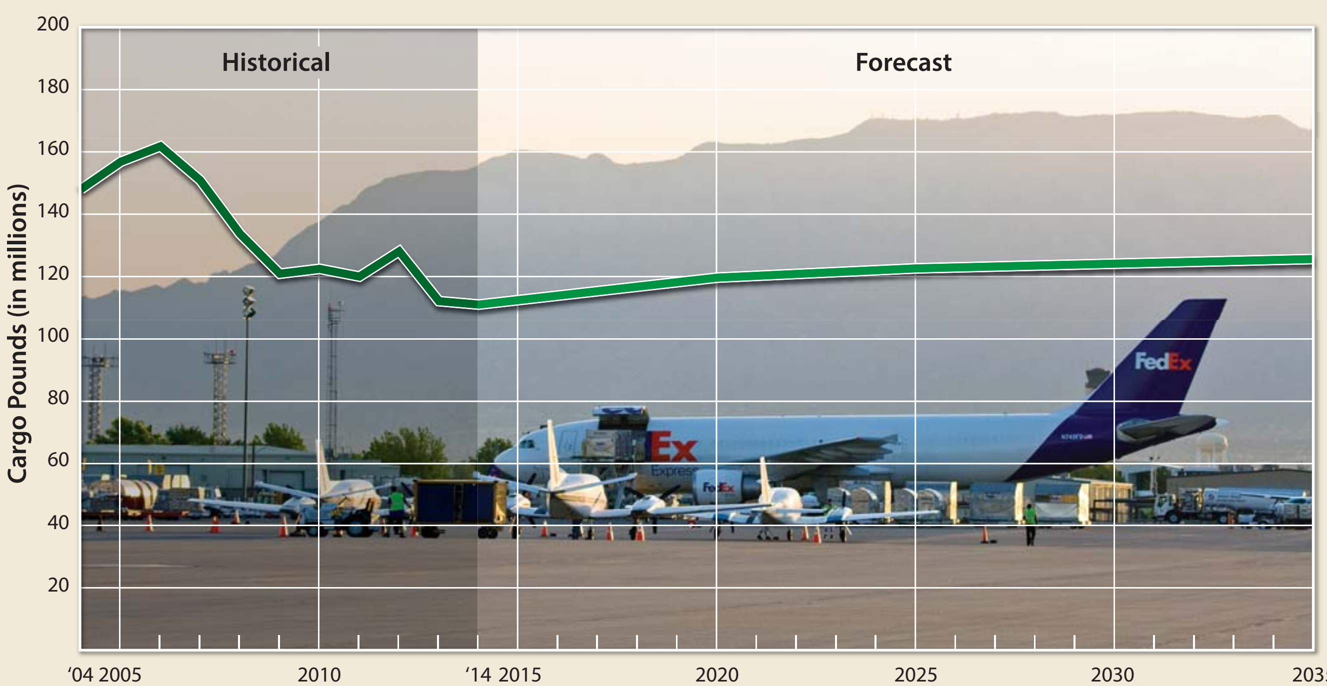


Exhibit 2J
AIR CARGO FORECASTS

cargo jet fleet is projected to increase by three aircraft per year over the forecast period as older 757s and 737s are converted to cargo service. The wide-body, cargo jet fleet is projected to increase by 13 aircraft yearly.

AIR CARGO FORECAST

Air cargo is comprised of air freight, air express, and air mail. Air freight and express is handled by both passenger airlines and all-cargo airlines. Air mail is now primarily handled by an all-cargo carrier under contract with the United States Postal Service.

Until the mid-1980s, air cargo to and from the Albuquerque area was carried almost exclusively by the passenger airlines as belly freight. That began to change with the introduction of the overnight package delivery carriers. In the mid-to-late 1980s, all-cargo carriers, such as Airborne (now DHL Worldwide), FedEx, and UPS began to serve ABQ with priority overnight service. That service later expanded to include next-day, second-day, and third-day service. Today, nearly all air cargo is handled by the dedicated air cargo operators.

Table 2N presents the forecast of total air cargo weight for the Sunport. The forecast was developed by comparing the total air cargo handled at the Sunport (both enplaned and deplaned) with the FAA's national forecast of air cargo revenue ton miles. Utilizing a constant market share of the national forecast, a long-term forecast emerges. The average annual growth rate of the forecast is 0.59 percent.

The bottom half of **Exhibit 2J** shows the forecast for the Sunport. The forecast indicates that the Sunport may expect a modest increase in total air cargo. The existing facilities are adequate to accommodate current and future air cargo activity.

TABLE 2N
Air Cargo Forecast
Albuquerque International Sunport

Year	ABQ Air Cargo Total (lbs.)[1]	ABQ Air Cargo Total Tons	U.S. Revenue Ton-Miles[2]	Airport Market Share
2004	158,294,120	79,147	15,150,100,000	1.044839%
2005	166,342,642	83,171	15,265,000,000	1.089700%
2006	167,979,472	83,990	15,380,900,000	1.092130%
2007	153,463,817	76,732	15,219,100,000	1.008363%
2008	136,244,528	68,122	14,407,600,000	0.945643%
2009	123,036,357	61,518	11,898,600,000	1.034041%
2010	124,061,134	62,031	12,823,100,000	0.967482%
2011	121,413,883	60,707	12,046,900,000	1.007843%
2012	128,742,484	64,371	12,294,800,000	1.047130%
2013	112,636,638	56,318	12,376,800,000	0.910063%
2014	111,404,466	55,702	12,666,200,000	0.879541%
Constant Market Share/Selected Forecast (AAGR = 0.59%)				
2020	120,086,000	60,043	13,653,300,000	0.879541%
2025	123,068,000	61,534	13,992,300,000	0.879541%
2035	126,085,000	63,043	14,335,300,000	0.879541%

Source: [1]Airport records include freight, express, and mail. [2]FAA Aerospace Forecasts Fiscal Years 2015-2035.

ALL-CARGO OPERATIONS

As presented in Chapter One – Inventory, the Sunport has five all-cargo carriers currently. FedEx and UPS are the mainline all cargo carriers. AmeriFlight and Empire Air are both feeder airlines for FedEx, and South Aero is a feeder airline for UPS.

Table 2P examines the cargo aircraft mix at the Sunport now and in the future. In 2014, there were 6,826 operations by the feeder airlines. FedEx and UPS accounted for an additional 3,376 operations for a total of 10,202 operations by cargo carriers. The air cargo carrier operations forecast is based on an annual growth rate of 0.59 percent (same as the FAA national forecast).

TABLE 2P
Air-Cargo Airline Landings
Albuquerque International Sunport

FAA Gross Landing Weight (lbs.)	Actual	Forecast		
	2014	2020	2025	2035
>320,000 (B767, DC10)	832	862	888	947
280,000-320,000 (A300)	759	786	810	864
210,000-280,000 (A310)	9	9	10	10
161,000-210,000 (B757)	77	80	82	88
30,000-161,000 (B727)	11	11	12	12
<30,000 (Commuter)	3,413	3,536	3,641	3,885
Annual Landings	**5,101**	**5,250**	**5,450**	**5,800**
Annual Operations	**10,202**	**10,500**	**10,900**	**11,600**

Note: Assumes constant growth rate of 0.59 percent annually

GENERAL AVIATION FORECASTS

General aviation encompasses all portions of civil aviation except commercial service and military operations. To determine the types and sizes of facilities that should be planned to accommodate general aviation activity at the Sunport, certain elements of this activity must be forecast. These indicators of general aviation demand include based aircraft, aircraft fleet mix, and annual operations.

NATIONAL GENERAL AVIATION TRENDS

The FAA forecasts the fleet mix and hours flown for single engine piston aircraft, multi-engine piston aircraft, turboprops, business jets, piston and turbine helicopters, light sport, experimental, and others (gliders and balloons). The FAA forecasts "active aircraft," not total aircraft. An active aircraft is one that is flown at least one hour during the year. From 2010 through 2013, the FAA undertook an effort to have all aircraft owners re-register their aircraft. This effort resulted in a 10.5 percent decrease in the number of active general aviation aircraft, mostly in the piston category.

After growing rapidly for most of the decade, the demand for business jet aircraft slowed over the past few years, as the industry was hard hit by the 2008-2009 economic recession. Nonetheless, the FAA forecast calls for growth through the long-term, driven by higher corporate profits and continued concerns about safety, security, and flight delays. Overall, business aviation is projected to outpace personal/recreational use.

In 2014, the FAA estimated there were 139,890 piston-powered aircraft in the national fleet. The total number of piston-powered aircraft in the fleet is forecast to decline by 0.5 percent from 2014-2035, resulting in 125,935 by 2035. This includes -0.6 percent annually for single engine pistons and -0.4 percent for multi-engine pistons.

Total turbine aircraft are forecast to return to growth in 2014 and have an annual growth rate of 2.4 percent through 2035. The FAA estimates there were 28,085 turbine-powered aircraft in the national fleet in 2014, and there will be 45,905 by 2035. This includes annual growth rates of 1.5 percent for turboprops, 2.8 percent for business jets, and 2.8 percent for turbine helicopters.

While comprising a much smaller portion of the general aviation fleet, experimental aircraft, typically identified as home-built aircraft, are projected to grow annually by 1.4 percent through 2035. The FAA estimates there were 24,480 experimental aircraft in 2014, and these are projected to grow to 33,040 by 2035. Sport aircraft are forecast to grow 4.3 percent annually through the long-term, growing from 2,200 in 2014 to 5,360 by 2035. **Exhibit 2K** presents the historical and forecast U.S. active general aviation aircraft.

The FAA also forecasts total operations based upon activity at control towers across the U.S. Operations are categorized as air carrier, air taxi/commuter, general aviation, and military.

Through 2035, total general aviation operations are forecast to grow 0.4 percent annually.

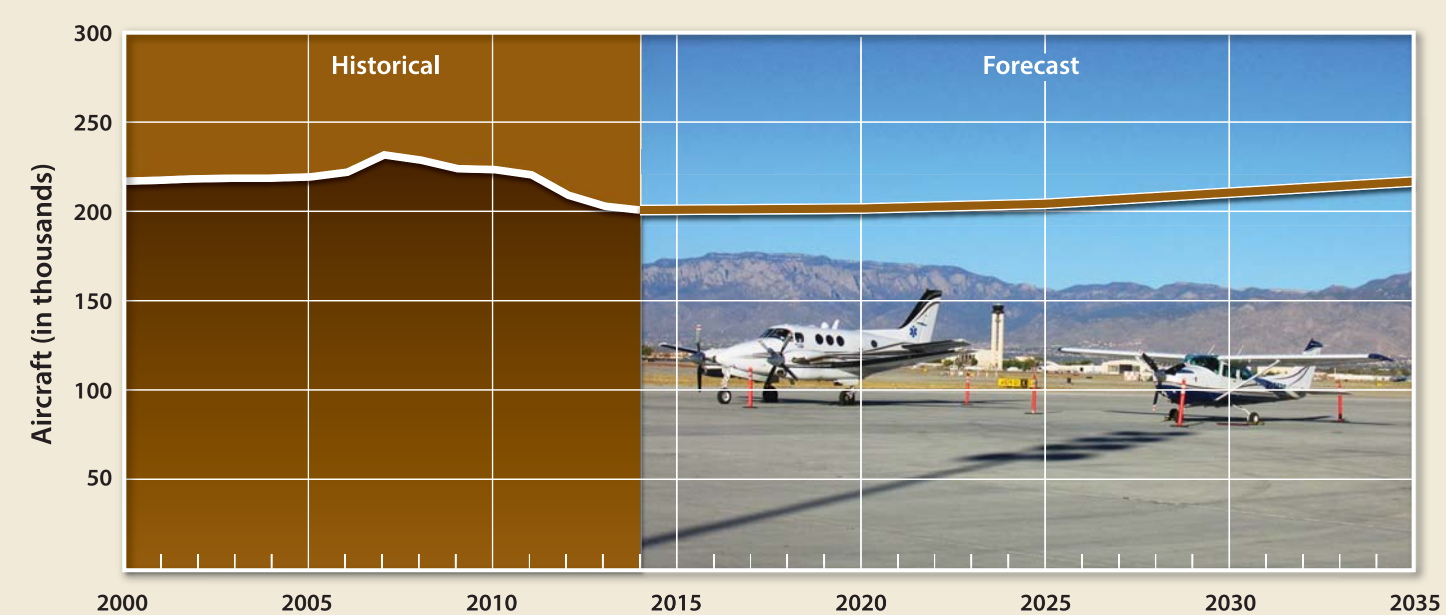
General aviation operations, both local and itinerant, declined significantly as a result of the 2008-2009 recession and subsequent slow recovery. Through 2035, total general aviation operations are forecast to grow 0.4 percent annually. Air taxi/commuter operations are forecast to decline by 3.6 percent through 2024, and then increase slightly through the remainder of the forecast period. Overall, air taxi/commuter operations are forecast to decline by 1.2 percent annually from 2014 through 2035.

General Aviation Aircraft Shipments and Revenue

As previously discussed, the 2008-2009 economic recession has had a negative impact on general aviation aircraft production, and the industry has been slow to recover. Aircraft manufacturing declined for three straight years from 2008 through 2010. According to the General Aviation Manufacturers Association (GAMA), there is optimism that aircraft manufacturing will stabilize and return to growth, which has been evidenced since 2011. **Table 2Q** presents historical data related to general aviation aircraft shipments.

U.S. ACTIVE GENERAL AVIATION AIRCRAFT

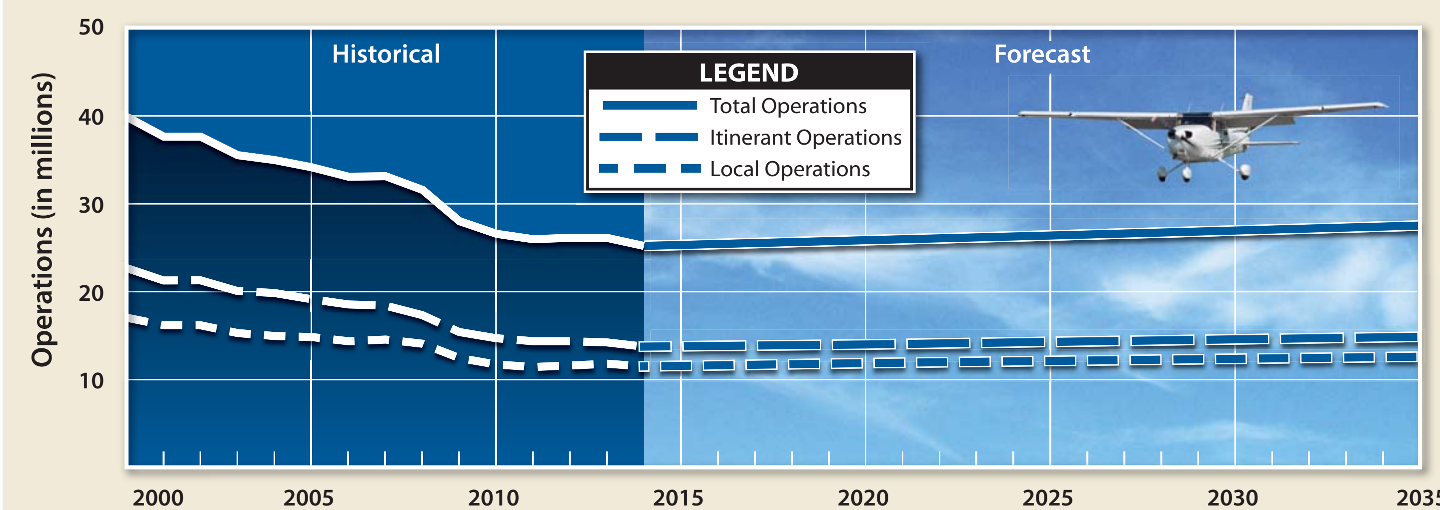
	2014	2020	2025	2035	AAGR 2014-2035
Fixed Wing					
Piston					
Single Engine	123,440	117,770	113,905	108,810	-0.60%
Multi-Engine	13,215	12,920	12,545	12,135	-0.41%
Turbine					
Turboprop	9,485	9,315	9,855	12,970	1.50%
Turbojet	11,750	13,115	15,000	20,815	2.76%
Rotorcraft					
Piston	3,235	3,785	4,165	4,990	2.09%
Turbine	6,850	8,410	9,595	12,120	2.75%
Experimental					
	24,480	26,795	28,875	33,040	1.44%
Sport Aircraft					
	2,200	3,170	3,970	5,360	4.33%
Other					
	4,205	4,130	4,060	4,020	-0.21%
Total Pistons	**139,890**	**134,475**	**130,615**	**125,935**	**-0.50%**
Total Turbines	**28,085**	**30,840**	**34,450**	**45,905**	**2.37%**
Total Fleet	**198,860**	**199,410**	**201,970**	**214,260**	**0.36%**



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

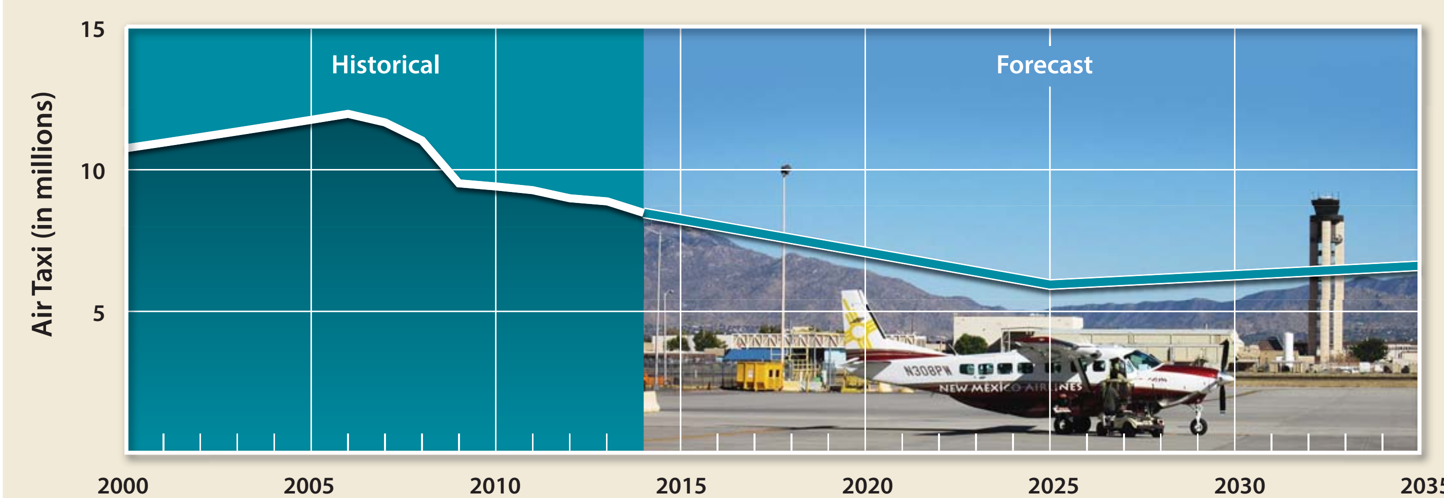
U.S. GENERAL AVIATION OPERATIONS

	2014	2020	2025	2035	AAGR 2014-2035
Itinerant					
	13,977,500	14,209,500	14,499,400	15,118,400	0.37%
Local					
	11,674,100	12,048,000	12,298,900	12,834,800	0.45%
Total GA Operations	**25,651,600**	**26,257,500**	**26,798,200**	**27,953,200**	**0.41%**



U.S. GENERAL AVIATION AIR TAXI

	2014	2020	2025	2035	AAGR 2014-2035
Air Taxi/Commuter Operations					
Itinerant	8,439,300	7,075,700	5,918,500	6,580,200	-1.18%



Source: FAA Aerospace Foreast - Fiscal Years 2015-2035

Exhibit 2K
NATIONAL GENERAL AVIATION/AIR TAXI FORECASTS

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TABLE 2Q
Annual General Aviation Airplane Shipments
Manufactured Worldwide and Factory Net Billings

Year	Total	SEP	MEP	TP	J	Net Billings ($millions)
1994	1,132	544	77	233	278	3,749
1995	1,251	605	61	285	300	4,294
1996	1,437	731	70	320	316	4,936
1997	1,840	1043	80	279	438	7,170
1998	2,457	1508	98	336	515	8,604
1999	2,808	1689	112	340	667	11,560
2000	3,147	1,877	103	415	752	13,496
2001	2,998	1,645	147	422	784	13,868
2002	2,677	1,591	130	280	676	11,778
2003	2,686	1,825	71	272	518	9,998
2004	2,963	1,999	52	321	591	11,918
2005	3,590	2,326	139	375	750	15,156
2006	4,053	2,513	242	412	886	18,815
2007	4,276	2,417	258	465	1,136	21,837
2008	3,970	1,943	176	538	1,313	24,772
2009	2,279	893	70	446	870	19,474
2010	2,020	781	108	368	763	19,715
2011	2,120	761	137	526	696	19,097
2012	2,133	790	91	580	672	18,873
2013	2,345	900	122	645	678	23,450
2014	2,445	986	143	603	722	24,499

SEP - Single Engine Piston; MEP - Multi-Engine Piston; TP - Turboprop; J - Turbofan/Turbojet
Source: General Aviation Manufacturers Association 2013 Statbook; 2014 data from Year End Report.

Worldwide shipments of general aviation airplanes increased for the fourth year in a row in 2014. A total of 2,445 units were delivered around the globe, as compared to 2,345 units in 2013. Worldwide general aviation billings were also higher than the previous year.

Business Jets: General aviation manufacturers delivered 722 business jets in 2014, as compared to 678 units in 2013. Similar to 2013, demand was stronger in 2014 for large-cabin business jets than it was for medium and light business jets.

Turboprops: In 2014, 603 turboprop airplanes were delivered to customers around the world, a slight decline from the 645 delivered in 2013. Overall, the turboprop market has experienced significant gains since 2010.

Pistons: Piston deliveries increased from 1,022 units during 2013 to 1,129 in 2014. The piston segment continued to fare best for unit deliveries among the three segments by which GAMA tracks the airplane manufacturing industry. This is due in part by deliveries to flight schools in emerging markets.

Most industry observers believe that the general aviation market, particularly the business aviation market, is in a position for sustained growth. Industry net orders are back to positive and most leading indicators continue to improve. The large jet category of the market is expected to expand faster than the other categories.

BASED AIRCRAFT FORECAST

The number of based aircraft is the most basic indicator of general aviation demand.

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft for the Sunport, other general aviation activities and demand can be projected. The process of developing forecasts of based aircraft begins with an analysis of aircraft ownership in the primary general aviation service area through a review of historical aircraft registrations.

The forecasts to follow consider civilian based aircraft and not military based aircraft. For security reasons, the specific number of military aircraft based at Kirtland AFB is not publicly available; however, the FAA Form 5010 estimates there to be 54. This approximation is necessary when considering projects that could impact military activity.

Bernalillo County is the primary service area for general aviation demand.

Area Aircraft Ownership (Registered Aircraft)

Analysis presented earlier indicates that Bernalillo County is the primary service area for general aviation demand. Aircraft ownership trends for the primary service area typically dictate the based aircraft trends for an airport. As such, an analysis of Bernalillo County aircraft registrations was made.

Table 2R presents the history of registered aircraft in Bernalillo County from 1993 through 2014 (excluding balloons, gliders, ultralights, etc.). These figures are derived from the FAA aircraft registration database that categorized registered aircraft by county based on the zip code of the registered aircraft. Although this information generally provides a correlation to based aircraft, it is not uncommon for some aircraft to be registered in the county, but based at an airport outside the county or vice versa.

In 2014, there were 605 aircraft registered in the county, which is the eighth consecutive year of decline. This represented the lowest level since before 1993, and is an indicator of how the national recession of 2008-2009 negatively impacted general aviation as a whole. The highest number of registered aircraft was 837 in 2007. Now that the actual number of registered aircraft has been identified, several projections of future registered aircraft are considered for the 20-year planning horizon.

In 2014, there were 605 aircraft registered in the county.

TABLE 2R
Bernalillo County Registered Aircraft

Year	SEP	MEP	TP	J	H	Total
1993	532	81	20	22	11	**666**
1994	536	93	21	21	11	**682**
1995	547	94	22	29	11	**703**
1996	574	92	25	29	9	**729**
1997	554	82	25	32	11	**704**
1998	559	80	26	29	12	**706**
1999	587	81	30	36	13	**747**
2000	608	91	31	34	16	**780**
2001	595	91	42	53	15	**796**
2002	589	93	44	51	15	**792**
2003	544	70	55	102	14	**785**
2004	533	69	58	111	13	**784**
2005	536	70	60	110	12	**788**
2006	604	134	35	20	21	**814**
2007	589	154	53	21	20	**837**
2008	576	104	106	35	13	**834**
2009	571	93	72	37	14	**787**
2010	567	91	62	27	33	**780**
2011	557	87	55	27	36	**762**
2012	496	77	46	34	54	**707**
2013	457	69	49	25	45	**645**
2014	429	64	39	27	46	**605**

SEP-Single engine piston; MEP-Multi-engine Piston, TP-Turboprop, J-Jet, H-Helicopter
Source: FAA Aircraft Registration Database

Registered aircraft projections are presented in **Table 2S**. These projections evaluate the potential growth of aircraft demand (registered aircraft) in Bernalillo County over the next 20 years.

Since 2007, the number of registered aircraft in Bernalillo County has declined annually. In 2014, there were 605 registered aircraft compared to 837 in 2007. As a result, various regression and time-series analyses did not result in a reliable forecast. Therefore, several market share forecasts have been developed.

The first two projections consider the county's market share of total active general aviation aircraft in the U.S. fleet as identified in the FAA's annual forecasts. The first projection considers the county maintaining its 2014 percent (0.3042%) as a constant into the forecast years. This results in a long-term projection of 652 registered aircraft and an annual growth rate of 0.36 percent. The second projection considers the potential for a return to growth by reclaiming the 15-year average market share of registered aircraft as a ratio to the U.S. active aircraft fleet (0.3537 percent). This results in an annual growth rate of 1.08 percent. By 2035, this projection results in 758 registered aircraft in the county.

The next two projections consider the ratio of forecast population for the county to registered aircraft. The first of these projections considers the county maintaining its 2014 ratio of 0.8758 aircraft per 1,000 people in the county. This results in a 2035 projection of 816 registered aircraft and an annual growth rate of 1.44 percent. The second projection considers reclaiming the 15-year average (1.2269) of registered aircraft per 1,000 county residents which is an annual growth rate of 3.08 percent.

TABLE 2S
Registered Aircraft Projections
Bernalillo County

Year	County Registrations[1]	U.S. Active Aircraft[2]	Market Share	County Population[3]	Aircraft Per 1,000 Residents
2000	780	217,533	0.3586%	556,678	1.4012
2001	796	211,446	0.3765%	564,241	1.4107
2002	792	211,244	0.3749%	576,532	1.3737
2003	785	209,606	0.3745%	587,049	1.3372
2004	784	219,319	0.3575%	600,449	1.3057
2005	788	224,257	0.3514%	615,320	1.2806
2006	814	221,942	0.3668%	628,632	1.2949
2007	837	231,606	0.3614%	638,978	1.3099
2008	834	228,664	0.3647%	646,879	1.2893
2009	787	223,876	0.3515%	655,279	1.2010
2010	780	223,370	0.3492%	662,564	1.1772
2011	762	220,453	0.3457%	669,416	1.1383
2012	707	209,034	0.3382%	672,444	1.0514
2013	645	199,927	0.3226%	674,221	0.9567
2014	605	198,880	0.3042%	690,834	0.8758
Constant Market Share of U.S. Active Aircraft Projection (AAGR = 0.36%)					
2020	607	199,410	0.3042%	780,244	0.7775
2025	614	201,970	0.3042%	835,325	0.7355
2035	652	214,260	0.3042%	932,091	0.6993
Reclaim 15-Year Average Market Share of U.S. Active Aircraft Projection (AAGR = 1.08%)					
2020	632	199,410	0.3167%	780,244	0.8094
2025	665	201,970	0.3292%	835,325	0.7960
2035	758	214,260	0.3537%	932,091	0.8131
Constant Ratio of Aircraft per 1,000 County Residents (AAGR = 1.44%)					
2020	683	199,410	0.3427%	780,244	0.8758
2025	732	201,970	0.3622%	835,325	0.8758
2035	816	214,260	0.3810%	932,091	0.8758
Reclaim 15-Year Average Ratio of Aircraft per 1,000 County Residents (AAGR =3.08%)					
2020	752	199,410	0.3770%	780,244	0.9636
2025	878	201,970	0.4348%	835,325	1.0514
2035	1,144	214,260	0.5337%	932,091	1.2269
Selected Projection (AAGR = 1.34%)					
2020	***620***	199,410	0.3109%	780,244	0.7946
2025	***680***	201,970	0.3367%	835,325	0.8141
2035	***800***	214,260	0.3734%	932,091	0.8583

[1]County Aircraft Registrations from FAA Aircraft Registration Database
[2]U.S. Active Aircraft from FAA Aerospace Forecasts – Fiscal Years 2015-2035
[3]Historical population from the US Census Bureau - Population division; Population projections from New Mexico County Population Projections July 1, 2010 to July 1, 2040, Geospatial and Population Studies Group, University of New Mexico. Released November 2012

The selected forecast of registered aircraft considers slow growth in the short-term with slightly accelerated growth by the longer term. By 2035, 800 county aircraft registrations are forecast. This figure is below the high registration total of 837 realized in 2007.

The registered aircraft projection is one data point to be used in the development of a based aircraft forecast. The following section will present several potential based aircraft forecasts as well as the selected based aircraft master plan forecast.

Based Aircraft Forecasts

Determining the number of based aircraft at an airport can be a challenging task. Aircraft storage can be somewhat transient in nature, meaning aircraft owners can and do move their aircraft. Some aircraft owners may store their aircraft at an airport for only part of the year. For many years, the FAA did not require based aircraft records; therefore, historical records are often incomplete or non-existent. For this study, the Sunport provided based aircraft counts beginning in 2006. As of 2014, there were 165 aircraft based at the Sunport.

The FAA TAF is an initial forecast source for based aircraft at airports. The 2015 TAF estimated that there were 174 based aircraft in 2014, which was forecast to grow to 268 by 2035 for an annual growth rate of 2.08 percent. **Table 2T** shows the FAA TAF history and forecasts of based aircraft. As can be seen, the 2015 TAF overestimates the current number of based aircraft by nine aircraft. Form 5010 is the FAA *Airport Master Record* for an airport and it presents a single year based aircraft figure. In 2014, Form 5010 for the Sunport identified 172 based aircraft. Obviously, there is a range of based aircraft that have been reported for the Airport.

TABLE 2T
Existing Based Aircraft Forecasts
Albuquerque International Sunport

	HISTORY			FORECAST		
	2006	**2010**	**2014**	**2020**	**2025**	**2035**
Actual Based Aircraft	271	175	165			
FAA TAF 2015	360	201	174	196	218	268
Form 5010 Airport Master Record			172			

TAF - Terminal Area Forecast

Several forecasts of based aircraft for the Sunport have been developed. As with forecasts of registered aircraft, the goal is to develop a planning envelope of reasonable forecasts, then select a 20-year planning forecast for use in this study.

Table 2U considers several market share forecasts for based aircraft utilizing the previously developed forecast of registered aircraft in the county. In 2014, the Sunport with 165 based aircraft, accounted for 27.27 percent of the registered aircraft in the county. By maintaining this percent as a constant, a long-term forecast of based aircraft emerges which results in 218 based aircraft by 2035. A second projection considers a modestly decreasing market share of the county's registered aircraft. This forecast results in 184 based aircraft by 2035. A third projection shown utilizes the 2015 TAF projected annual growth rate of 2.08 percent which has a 2035 forecast of 268 based aircraft.

TABLE 2U
Based Aircraft Forecast
Albuquerque International Sunport

Year	Bernalillo County Registered Aircraft	Based Aircraft	Market Share
2006	814	271	33.29%
2007	837	265	31.66%
2008	834	210	25.18%
2009	787	201	25.54%
2010	780	175	22.44%
2011	762	175	22.97%
2012	707	175	24.75%
2013	645	165	25.58%
2014	605	165	27.27%
Constant Share Projection (AAGR 1.34%)			
2020	620	169	27.27%
2025	680	185	27.27%
2035	800	218	27.27%
Declining Share Projection (AAGR 0.52%)			
2020	620	161	26.00%
2025	680	170	25.00%
2035	800	184	23.00%
TAF Growth Rate (AAGR =2.08%)			
2020	620	196	31.61%
2025	680	218	32.06%
2035	800	268	33.50%
Selected Planning Forecast (AAGR 1.38%)			
2020	620	***170***	27.42%
2025	680	***190***	27.94%
2035	800	***220***	27.50%

AAGR: Average Annual Growth Rate

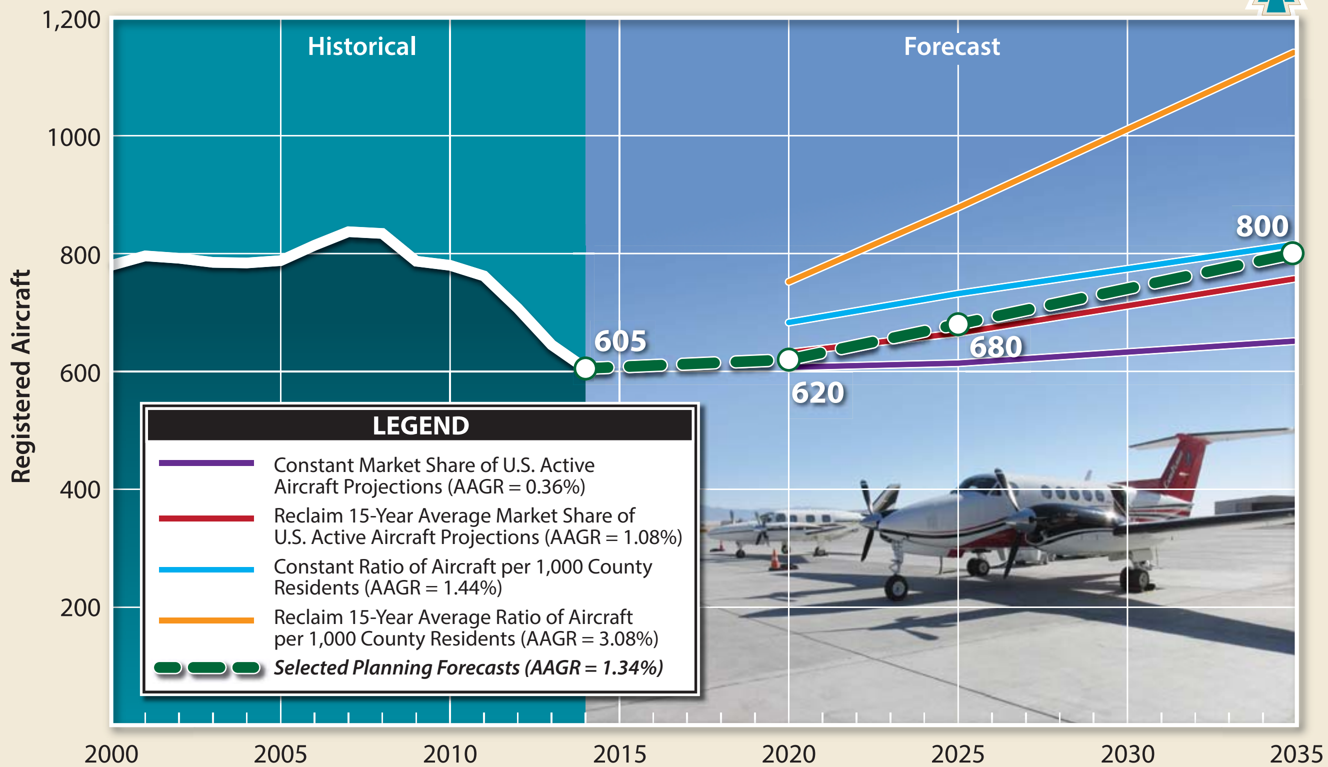
The three new forecasts represent the reasonable planning envelope. The selected forecast is closest to the constant market share of registered aircraft forecast. In the next five years, 170 based aircraft are projected. In 10 years, 190 are projected and by 2035, 220 based aircraft are projected. **Exhibit 2L** illustrates both the registered and the based aircraft forecast.

BASED AIRCRAFT FLEET MIX

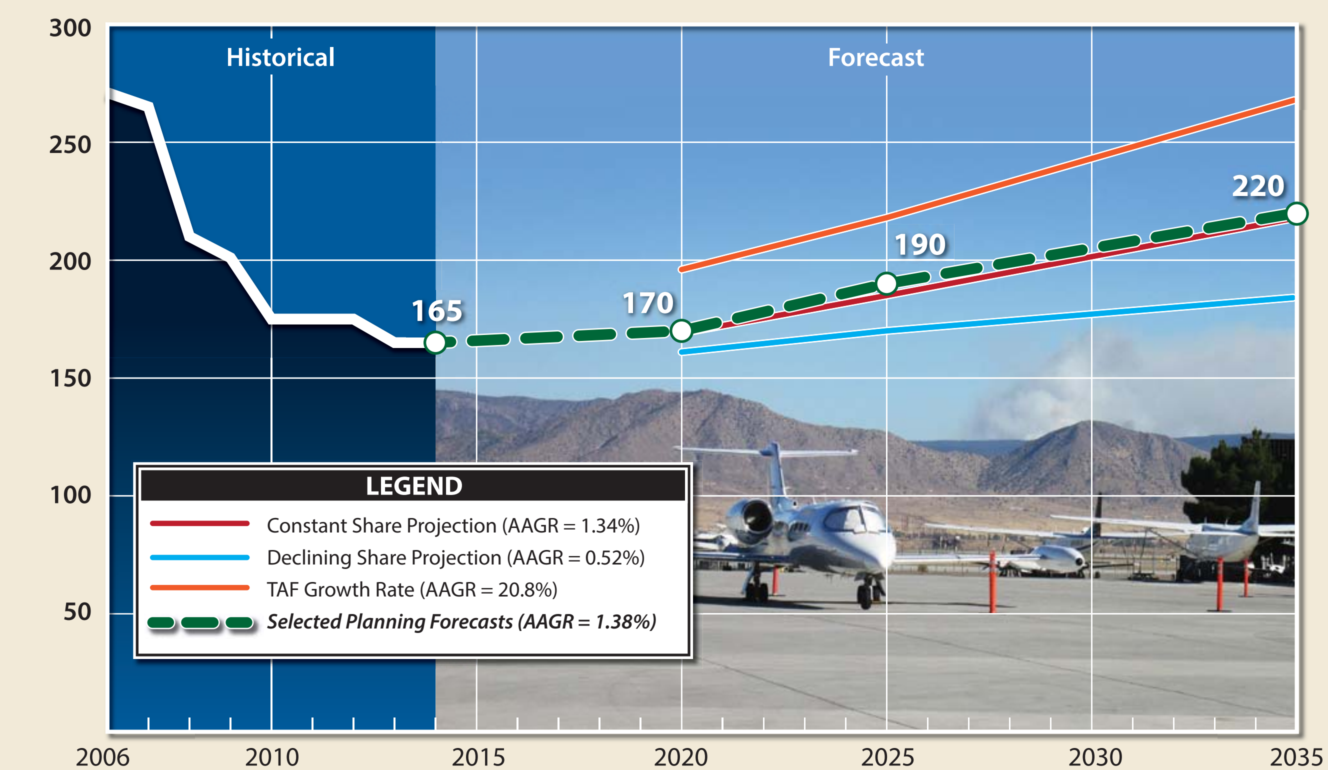
The fleet mix of based aircraft is oftentimes more important to airport planning and design than the total number of aircraft. For example, the presence of one or a few large business jets can impact design standards for the runway and taxiway system more than a large number of smaller single engine piston-powered aircraft.

The based aircraft fleet mix forecast for the Sunport is presented in **Table 2V**. It has been developed based on local aircraft type usage and national trends as presented in FAA *Aerospace Forecasts - Fiscal*

REGISTERED AIRCRAFT - BERNALILLO COUNTY



BASED AIRCRAFT



- County Aircraft Registrations from FAA Aircraft Registration Database
- U.S. Active Aircraft from FAA Aerospace Forecasts – Fiscal Years 2015-2035
- Historical population from the US Census Bureau - Population division; Population projections from New Mexico County Population Projections July 1, 2010 to July 1, 2040, Geospatial and Population Studies Group, University of New Mexico. Released November 2012

AAGR: Average Annual Growth Rate

Exhibit 2L: REGISTERED AND BASED AIRCRAFT FORECASTS

Years 2015-2035. The FAA expects business jets will continue to be the fastest growing general aviation aircraft type in the future. The Sunport is well-positioned to accommodate business jets in the future; nevertheless, smaller piston-powered aircraft will continue to have a presence at the Sunport.

TABLE 2V
Based Aircraft Fleet Mix
Albuquerque International Sunport

	EXISTING		FORECAST					
Aircraft Type	**2014**	**%**	**2020**	**%**	**2025**	**%**	**2035**	**%**
Single Engine	60	36.36%	61	35.88%	64	33.68%	70	31.82%
Multi-Engine	49	29.70%	49	28.82%	51	26.84%	55	25.00%
Turboprop	30	18.18%	31	18.24%	35	18.42%	41	18.64%
Jet	19	11.52%	21	12.35%	27	14.21%	36	16.36%
Helicopter	7	4.24%	8	4.71%	13	6.84%	18	8.18%
Totals	**165**	**100.00%**	**170**	**100.00%**	**190**	**100.00%**	**220**	**100.00%**

Source: Airport Records; Coffman Associates Analysis

There are currently 19 business jets based at the Sunport which are forecast to increase to 36 by 2035. Turboprops are forecast to increase from 30 currently to 41 by 2035. Helicopters based at the Sunport are forecast to grow from seven currently to 18 by the long-term. Single and multi-engine piston aircraft are forecast to increase slightly over the 20-year forecast period.

GENERAL AVIATION OPERATIONS

General aviation (GA) operations are classified by the airport traffic control tower (ATCT) as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of an airport, or which executes simulated approaches or touch-and-go operations at an airport. Itinerant operations are those performed by aircraft with a specific origin or destination away from an airport. Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use, since business aircraft are operated on a higher frequency.

Itinerant Operations

Table 2W depicts general aviation itinerant operations at the Sunport from 2000 through 2014. General aviation itinerant operations have experienced a declining trend since the most recent national recession in 2008; however, 2014 saw a reversal of that trend. National general aviation itinerant operations have been declining since at least 2000, but have taken a steeper decline since the beginning of the recession and have yet to recover; however, the FAA forecasts a reversal by 2015. From 2014 through 2035, the FAA forecasts an annual growth rate of 0.4 percent for itinerant general aviation operations.

The FAA forecasts an annual growth rate of 0.4 percent for itinerant general aviation operations.

TABLE 2W
General Aviation Itinerant Operations Forecast
Albuquerque International Sunport

Year	ABQ GA Itinerant Ops[1]	US GA Itinerant Ops[2]	Market Share Itinerant Ops	ABQ Based Aircraft[3]	Itinerant Ops Per Based Aircraft
2000	63,184	22,844,100	0.2766%	[redacted]	[redacted]
2001	59,637	21,432,900	0.2782%	[redacted]	[redacted]
2002	67,647	21,450,500	0.3154%	[redacted]	[redacted]
2003	59,285	20,231,300	0.2930%	[redacted]	[redacted]
2004	41,353	20,007,200	0.2067%	[redacted]	[redacted]
2005	38,953	19,303,200	0.2018%	[redacted]	[redacted]
2006	39,677	18,707,100	0.2121%	271	146
2007	40,976	18,575,200	0.2206%	265	155
2008	37,468	17,492,700	0.2142%	210	178
2009	29,864	15,571,100	0.1918%	201	149
2010	27,927	14,863,900	0.1879%	175	160
2011	26,144	14,527,900	0.1800%	175	149
2012	26,679	14,521,700	0.1837%	175	152
2013	26,422	14,177,400	0.1864%	165	160
2014	28,548	13,977,500	0.2042%	165	173
Constant Market Share of 2014 Percent (AAGR = 0.37%)					
2020	29,022	14,209,500	0.2042%	170	171
2025	29,614	14,499,400	0.2042%	190	156
2035	30,878	15,118,400	0.2042%	220	140
Increasing Market Share (AAGR = 1.15%)					
2020	29,840	14,209,500	0.2100%	170	176
2025	31,899	14,499,400	0.2200%	190	168
2035	36,284	15,118,400	0.2400%	220	165
Constant Operations Per Based Aircraft (AAGR = 1.38%)					
2020	29,413	14,209,500	0.2070%	170	173
2025	32,873	14,499,400	0.2267%	190	173
2035	38,064	15,118,400	0.2518%	220	173
Increasing Operations Per Based Aircraft (AAGR = 2.08%)					
2020	29,750	14,209,500	0.2094%	170	175
2025	34,200	14,499,400	0.2359%	190	180
2035	44,000	15,118,400	0.2910%	220	200
2015 FAA TAF Projections (AAGR = 0.50%)					
2020	28,578	14,209,500	0.2011%	170	168
2025	29,592	14,499,400	0.2041%	190	156
2035	31,725	15,118,400	0.2098%	220	144
Selected Planning Forecast (AAGR = 1.14%)					
2020	***29,300***	14,209,500	0.2062%	170	172
2025	***31,600***	14,499,400	0.2179%	190	166
2035	***36,200***	15,118,400	0.2394%	220	165

[1]Historical data from ATCT records as reported to FAA.
[2]FAA Forecasts Fiscal Years 2015-2035
[3]Airport records
AAGR = Average Annual Growth Rate from 2014 to 2035
Source: Coffman Associates analysis

Prior to 2003, the Sunport averaged more than 60,000 annual itinerant general aviation operations. From 2004 through 2008, the average was around 40,000 annual itinerant general aviation operations. From 2009 to 2014, itinerant general aviation operations leveled off around 28,000 annual operations.

Five forecasts are considered to develop the planning envelope for future local general aviation operations. The planning envelope is intended as the range where the forecast may reasonably fall. The first two forecasts consider future itinerant general aviation operations in comparison to the Sunport's market share of national itinerant general aviation operations as forecast by the FAA. The first of these two considers the Sunport maintaining a constant market share (0.2042 percent) of national itinerant general aviation operations which yields 30,878 operations by 2035. The next considers the Sunport beginning to regain market share with a modestly increasing share of national itinerant general aviation operations. By the long-term, the increasing market share forecast results in 36,284 operations.

The next two projections consider the relationship between based aircraft and itinerant general aviation operations. In 2014, there were 173 itinerant general aviation operations per based aircraft. When maintaining this ratio, a forecast results in 38,064 itinerant general aviation operations by 2035. This represents an annual growth rate of 1.38 percent. The second forecast considers an increasing number of itinerant general aviation operations per based aircraft. By 2035, itinerant general aviation operations reach 44,000, which correspond to 200 operations per based aircraft and an annual growth rate of 2.08 percent.

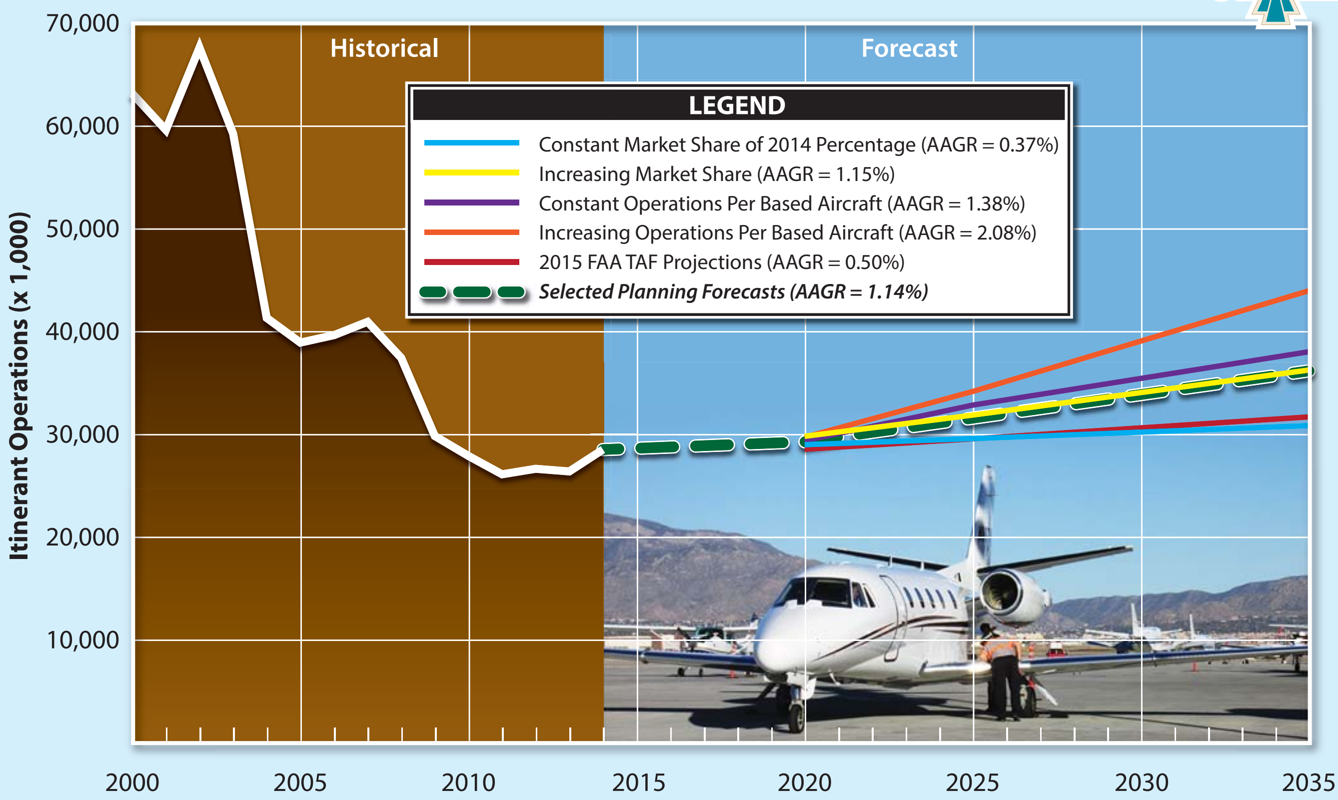
The 2015 FAA TAF also presents an itinerant general aviation operation forecast which is included in the table. The TAF forecasts a growth rate of 0.50 percent annually. This results in a 2035 itinerant general aviation operations projection of 31,725. It should be noted that the TAF estimate for 2014 itinerant general aviation operations was 27,750 which was below the actual figure documented by the control tower.

The selected planning forecast is a rounded average of the five forecasts. In the next five years, itinerant general aviation operations are forecast to reach 29,300. In 10 years, 31,600 itinerant general aviation operations are forecast and by 2035, 36,200 itinerant general aviation operations are projected. **Exhibit 2M** presents both the itinerant and local general aviation operations forecast.

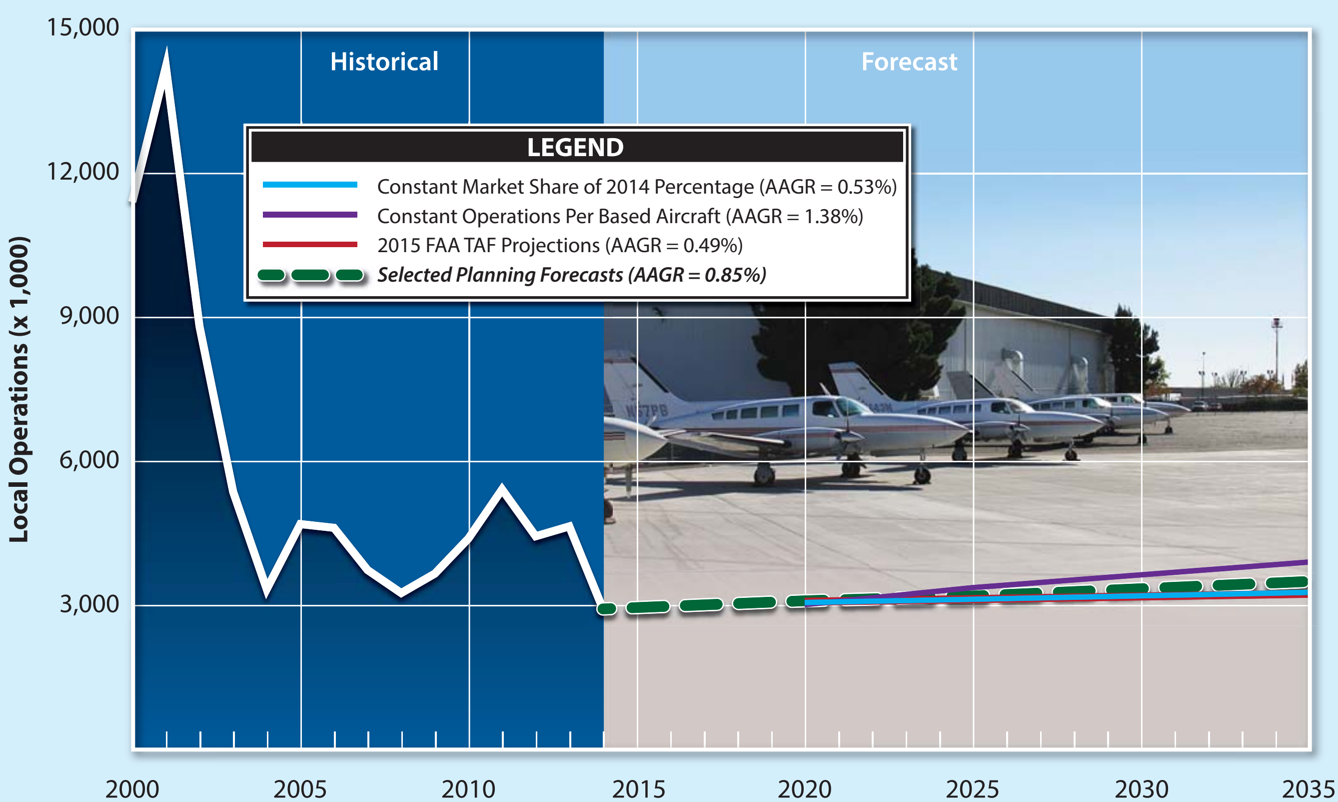
Local Operations

A similar methodology was utilized to forecast local general aviation operations. **Table 2X** depicts the history of local operations at the Sunport and examines its historic market share of GA local operations at towered airports in the United States. Historical local operations range from a low of 2,930 in 2014 to a high of 14,224 in 2001. As a busy commercial service airport, it is not unusual to have a low percentage of local operations. This is especially true at the Sunport where large military aircraft are frequently in the traffic pattern.

GENERAL AVIATION ITINERANT OPERATIONS



GENERAL AVIATION LOCAL OPERATIONS



Historical data from ATCT records as reported to FAA
AAGR: Average Annual Growth Rate from 2014 to 2035

Exhibit 2M: LOCAL & ITINERANT GENERAL AVIATION OPERATIONS FORECAST

TABLE 2X
General Aviation Local Operations Forecast
Albuquerque International Sunport

Year	ABQ GA Local Ops[1]	US GA Local Ops[2]	Market Share Local Ops	ABQ Based Aircraft[3]	Local Ops Per Based Aircraft
2000	11,409	17,034,400	0.0670%		
2001	14,224	16,193,600	0.0878%		
2002	8,819	16,172,800	0.0545%		
2003	5,372	15,292,700	0.0351%		
2004	3,343	14,960,400	0.0223%		
2005	4,698	14,843,600	0.0317%		
2006	4,620	14,365,400	0.0322%	271	17
2007	3,740	14,556,800	0.0257%	265	14
2008	3,261	14,081,200	0.0232%	210	16
2009	3,665	12,448,000	0.0294%	201	18
2010	4,398	11,716,300	0.0375%	175	25
2011	5,420	11,437,000	0.0474%	175	31
2012	4,444	11,608,300	0.0383%	175	25
2013	4,650	11,748,300	0.0396%	165	28
2014	2,930	11,674,100	0.0251%	165	18
Constant Market Share of 2014 Percent (AAGR = 0.53%)					
2020	3,064	12,207,100	0.0251%	170	18
2025	3,131	12,474,700	0.0251%	190	16
2035	3,275	13,048,100	0.0251%	220	15
Constant Operations Per Based Aircraft (AAGR = 1.38%)					
2020	3,019	12,207,100	0.0247%	170	18
2025	3,374	12,474,700	0.0270%	190	18
2035	3,907	13,048,100	0.0299%	220	18
2015 FAA TAF Projections (AAGR = 0.49%)					
2020	3,080	12,207,100	0.0252%	170	18
2025	3,135	12,474,700	0.0251%	190	17
2035	3,245	13,048,100	0.0249%	220	15
Selected Planning Forecast (AAGR = 0.85%)					
2020	***3,100***	12,207,100	0.0254%	170	18
2025	***3,200***	12,474,700	0.0257%	190	17
2035	***3,500***	13,048,100	0.0268%	220	16

[1]Historical data from ATCT records as reported to FAA.
[2]FAA Forecasts Fiscal Years 2015-2035
[3]Airport records
AAGR = Average Annual Growth Rate from 2014 to 2035
Source: Coffman Associates analysis

As with national itinerant operations, local operations have been declining for some time. The FAA TAF and the national projections estimate a modest annual growth rate going forward of approximately 0.5 percent. Since significant growth in the local general aviation operations category is not anticipated, three forecasts are considered.

The first two forecasts of local general aviation operations consider the Sunport's market share of national local general aviation operations as counted by the FAA. The first maintains the Sunport's 2014 market share at 0.0251 percent resulting in 3,275 local general aviation operations by 2035. This forecast results in an annual growth rate of 0.53 percent. The second forecast applies a constant number of local general aviation operations per based aircraft. This forecast results in 3,907 local general aviation operations by 2035 and an annual growth rate of 1.38 percent.

The 2015 FAA TAF projection is also presented in the table. The TAF identifies a 2035 projection of 3,245 local general aviation operations. This is an annual growth rate of 0.49 percent.

The selected forecast is the approximate average of the three new forecasts presented. The planning forecast for local general aviation operations considers 3,100 by 2020, 3,200 by 2025, and 3,500 by 2035. The average annual growth rate is 0.85 percent.

OTHER AIR TAXI & MILITARY OPERATIONS FORECASTS

Air taxi operations as reported by the air traffic control tower (ATCT) include commuter passenger, commuter cargo, as well as for-hire general aviation operations. Some operations by aircraft operated under fractional ownership programs are also counted as air taxi operations. Since the airline and cargo operations have been forecast, this section reviews the growth potential for the "other air taxi" operations.

In 2014, there were a total of 12,304 other air taxi operations. Because the other air taxi operations are more closely related to corporate aircraft flying, they were projected to increase at the rate of general aviation turboprops and jets. The resulting forecast is also presented in **Table 2Y**.

TABLE 2Y
Other Air Taxi Operations
Albuquerque International Sunport

Year	Other Air Taxi Operations
2014	12,304
Forecast (AAGR = 1.14%)	
2020	13,200
2025	13,900
2035	15,800

MILITARY ACTIVITY

Military operations are an important factor in air traffic activity at the Sunport because of the joint use agreement with Kirtland Air Force Base. Kirtland is home to the 58th Special Operations Wing (58th SOW), an Air Education and Training Command (AETC) unit that provides formal aircraft type/model/series training to the Air Force Special Operations Command (AFSOC) special operations forces (SOF) and Air Combat Command (ACC) combat search and rescue (CSAR) communities. The 58th SOW operates the MC-130H Combat Talon II, HC-130P/N King, HC-130J, MC-130J, UH-1N Huey, HH-60G Pave Hawk, and CV-22 Osprey aircraft. The 150th Special Operations Wing of the New Mexico Air National Guard, an Air Combat Command (ACC)-gained unit, is also home-based at Kirtland.

In 2014, there were 18,913 military operations. This total represents the lowest level the Sunport has experienced since at least 2000. Developing a reliable forecast of military activity is inherently difficult primarily because the military mission can change rapidly. Generally during peace time, civilian airports will experience higher levels of military operations. When there are overseas commitments, many of those pilots and equipment will be

In 2014, there were 18,913 military operations.

out of the country. The FAA recognizes these challenges to forecasting military activity and, therefore, provides only a flat forecast for both local and itinerant military activity.

Table 2Z presents the history of military activity at the Sunport. The forecast presented considers a zero growth scenario of 18,900 annual military operations. This is the rounded military operations from the FAA TAF. These operations are then categorized as either local or itinerant based on historical trends.

TABLE 2Z
Military Operations Forecast
Albuquerque International Sunport

Year	Military Itinerant	Military Local	Total
2000	22,232	20,076	42,308
2001	22,338	23,440	45,778
2002	29,298	17,599	46,897
2003	21,907	11,753	33,660
2004	21,053	7,682	28,735
2005	23,683	6,557	30,240
2006	23,509	7,258	30,767
2007	18,956	4,715	23,671
2008	18,105	3,830	21,935
2009	17,891	5,198	23,089
2010	16,878	7,538	24,416
2011	15,534	7,243	22,777
2012	17,147	7,216	24,363
2013	15,509	5,297	20,806
2014	16,683	2,230	18,913
Military Operations Forecast (AAGR - 0.0%)			
2018	16,100	2,800	18,900
2023	16,100	2,800	18,900
2033	16,100	2,800	18,900

Note: History from ATCT records as reported to FAA
Source: Coffman Associates analysis

FORECAST COMPARISON TO THE FAA TAF

The FAA will review the forecasts presented in this master plan for comparison to the *Terminal Area Forecast*. The local Airports District Office (ADO) of the FAA can approve the forecasts if they do not differ by more than 10 percent in the first five years and 15 percent for years 6-10. If the master planning forecasts exceed these parameters, then the forecasts must be forwarded to FAA headquarters in Washington, D.C. for further review. Any deviation from these thresholds will require specific local documentation. **Table 2AA** presents the direct comparison of the master planning forecasts with the TAF published in January 2015.

The reason the FAA allows this differential is because the TAF forecasts are not meant to replace forecasts developed locally (i.e., in this Master Plan). While the TAF can provide a point of reference or comparison, their purpose is much broader in defining FAA national workload measures.

TABLE 2AA
Forecast Comparison to the 2015 FAA Terminal Area Forecast (TAF)
Albuquerque International Sunport

	Baseline 2014	2020	2025	2035	AAGR 2014-2035
Passenger Enplanements					
Master Plan Forecast	2,446,388	2,490,000	2,750,000	3,330,000	1.48%
FAA TAF	2,395,478	2,415,367	2,665,158	3,230,043	1.51%
% Difference	2.1%	3.1%	3.2%	3.1%	
Commercial Operations					
Master Plan Forecast[1]	76,678	80,300	85,800	97,400	1.15%
FAA TAF	81,777	83,659	89,564	105,770	1.23%
% Difference	-6.2%	-4.0%	-2.6%	-7.9%	
Total Operations					
Master Plan Forecast	130,069	131,600	139,500	156,000	0.87%
FAA TAF	131,604	134,243	141,217	159,666	0.97%
% Difference	-1.2%	-2.0%	-1.2%	-2.3%	
Based Aircraft					
Master Plan Forecast	165	170	190	220	1.45%
FAA TAF	174	196	218	268	2.18%
% Difference	-5.2%	-13.3%	-12.8%	-17.9%	

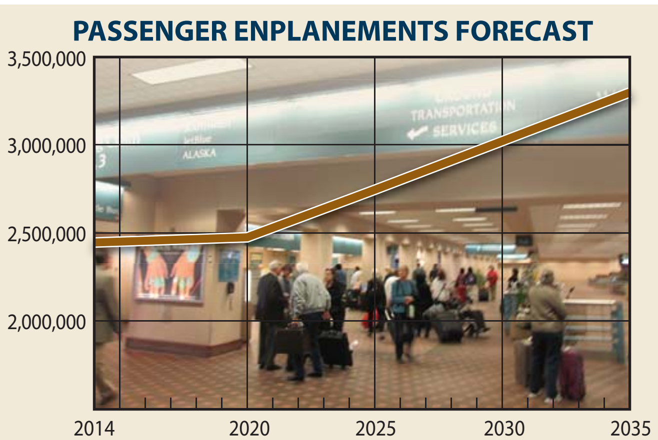
[1]Includes air carrier, commuter, air cargo, and a portion of air taxi.
Source: Coffman Associates analysis

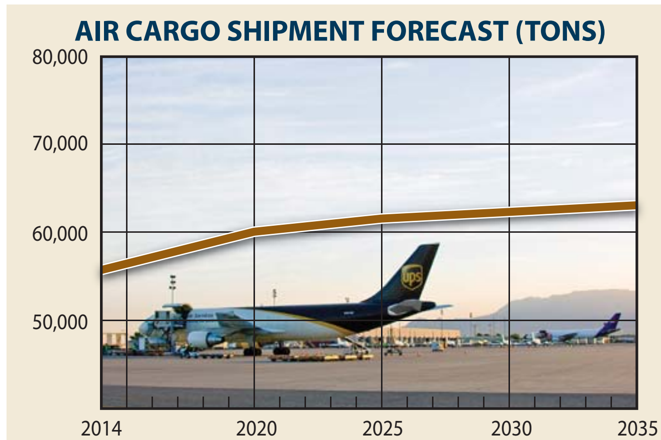
In the five- and ten-year planning horizons, enplanements and operations are within the FAA tolerance in relation to the TAF. In the five-year horizon, based aircraft is forecast at 13.3 percent below the FAA TAF. This is a direct result of the TAF 2014 baseline figure being nine aircraft higher than the actual figure of 165. The ten-year based aircraft projection is within the 15 percent FAA tolerance even with the discrepancy in the baseline figure.

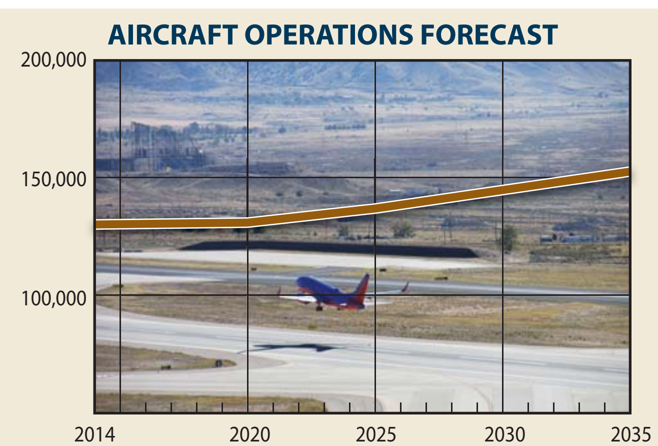
FORECAST SUMMARY

This chapter has outlined the various activity levels that might reasonably be anticipated over the planning period. **Exhibit 2N** is a summary of the aviation forecasts prepared in this chapter. Actual activity is included for 2014, which was the base year for these forecasts.

	Base Year	2020	2025	2035
TOTAL ENPLANEMENTS				
ANNUAL ENPLANEMENTS	***2,446,388***	***2,490,000***	***2,750,000***	***3,330,000***
TOTAL AIR				
AIR CARGO (tons)	***55,702***	***60,043***	***61,534***	***63,043***
ANNUAL OPERATIONS				
ITINERANT OPERATIONS				
Air Carrier	57,172	56,600	61,000	70,000
Air Cargo	10,202	10,500	10,900	11,600
Other Air Taxi	12,304	13,200	13,900	15,800
General Aviation	28,548	29,300	31,600	36,200
Military	16,683	16,100	16,100	16,100
TOTAL ITINERANT OPERATIONS	*124,909*	*125,700*	*133,500*	*149,700*
LOCAL OPERATIONS				
General Aviation	2,930	3,100	3,200	3,500
Military	2,230	2,800	2,800	2,800
Total Local Operations	*5,160*	*5,900*	*6,000*	*6,300*
TOTAL OPERATIONS	***130,069***	***131,600***	***139,500***	***156,000***
BASED AIRCRAFT	***165***	***170***	***190***	***220***







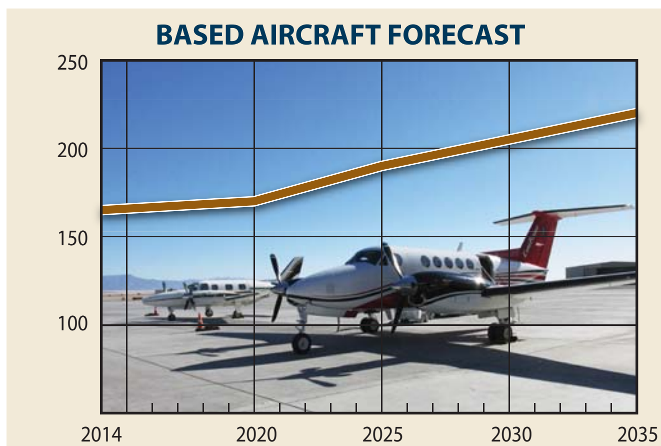


Exhibit 2N
FORECAST SUMMARY

In 2014, the Airport had 2.45 million passenger enplanements. Enplanements have decreased each year since 2008. Enplanements are forecast to reach 2.49 million within the next five years and 3.33 million within 20 years. Overall, Airport operations are forecast to continue to grow from 130,069 in 2014 to 156,000 by 2035. Based aircraft are forecast to grow from 165 in 2014 to 220 by 2035.

Projections of aviation demand will be influenced by unforeseen factors and events in the future. In the recent past, factors such as the terrorist attacks of September 11, 2001, and two economic recessions impacted aviation demand. Nonetheless, the forecasts developed for this master planning effort are considered reasonable for planning purposes. The FAA will review and, if acceptable, approve these forecasts for planning purposes.

AIRCRAFT/AIRPORT/RUNWAY CLASSIFICATION

The FAA has established several aircraft classification systems that group aircraft types based on their performance (approach speed in landing configuration) and on design characteristics (wingspan and landing gear configuration). These classification systems are used to determine the appropriate airport design standards for specific airport elements such as runways, taxiways, taxilanes, and aprons.

AIRCRAFT CLASSIFICATION

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using or are expected to use an airport. The critical design aircraft is used to define the design parameters for an airport. The design aircraft may be a single aircraft type or a composite aircraft representing a collection of aircraft. The design aircraft is classified by three parameters: Aircraft Approach Category (AAC), Airplane Design Group (ADG), and Taxiway Design Group (TDG). FAA AC 150/5300-13A, *Airport Design*, describes the following airplane classification systems, the parameters of which are presented on **Exhibit 2P**.

Aircraft Approach Category (AAC): A grouping of aircraft based on a reference landing speed (V_{REF}), if specified, or if V_{REF} is not specified, 1.3 times stall speed (V_{SO}) at the maximum certificated landing weight. V_{REF}, V_{SO}, and the maximum certificated landing weight are those values as established for the aircraft by the certification authority of the country of registry.

The AAC generally refers to the approach speed of an aircraft in landing configuration. The higher the approach speed, the more restrictive the applicable design standards. The AAC, depicted by a letter A through E, is the aircraft approach category and relates to aircraft approach speed (operational characteristic). The AAC generally applies to runways and runway-related facilities, such as runway width, runway safety area (RSA), runway object free area (ROFA), runway protection zone (RPZ), and separation standards.

AIRCRAFT APPROACH CATEGORY (AAC)

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

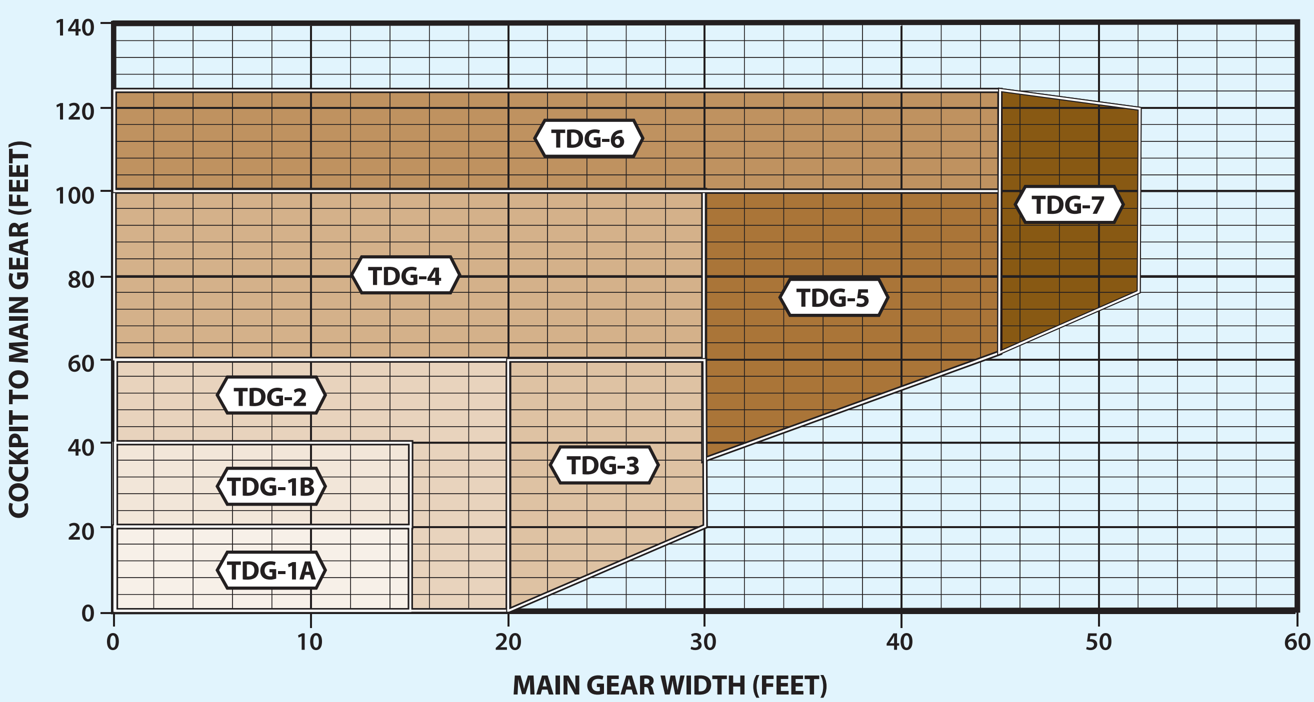
AIRPLANE DESIGN GROUP (ADG)

Group #	Tail Height (ft)	Wingspan (ft)
I	<20	<49
II	20-<30	49-<79
III	30-<45	70-<118
IV	45-<60	118-<171
V	60-<66	171-<214
VI	66-<80	214-<262

VISIBILITY MINIMUMS

RVR (ft)	Flight Visibility Category (statute miles)
VIS	3-mile or greater visibility minimums
5,000	Lower than 3 miles but not lower than 1-mile
4,000	Lower than 1-mile but not lower than ¾-mile (APV ≥ ¾ but < 1-mile)
2,400	Lower than ¾-mile but not lower than ½-mile (CAT-I PA)
1,600	Lower than ½-mile but not lower than ¼-mile (CAT-II PA)
1,200	Lower than ¼-mile (CAT-III PA)

TAXIWAY DESIGN GROUP (TDG)



KEY

APV: Approach Procedure with Vertical Guidance
PA: Precision Approach
RVR: Runway Visual Range
TDG: Taxiway Design Group

Source: FAA AC 150/5300-13A, Change 1, Airport Design

Exhibit 2P
AIRCRAFT CLASSIFICATION PARAMETERS

Airplane Design Group (ADG): The ADG, depicted by a Roman numeral I through VI, is a classification of aircraft which relates to aircraft wingspan or tail height (physical characteristic). When the aircraft wingspan and tail height fall in different groups, the higher group is used. The ADG influences design standards for taxiway safety area (TSA), taxiway object free (TOFA), taxilane object free area, apron wingtip clearance, and various separation distances.

Taxiway Design Group (TDG): A classification of airplanes based on outer-to-outer Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance. The TDG relates to the undercarriage dimensions of the design aircraft. The taxiway design elements determined by the application of the TDG include the taxiway width, taxiway edge safety margin, taxiway shoulder width, taxiway fillet dimensions, and, in some cases, the separation distance between parallel taxiways/taxilanes. Other taxiway elements, such as the taxiway safety area (TSA), taxiway/taxilane object free area (TOFA), taxiway/taxilane separation to parallel taxiway/taxilanes or fixed or movable objects, and taxiway/taxilane wingtip clearances are determined solely based on the wingspan (ADG) of the design aircraft utilizing those surfaces. It is appropriate for taxiways to be planned and built to different TDG standards based on expected use.

Exhibit 2Q summarizes the classification of the most common jet aircraft in operation today. Generally, business jets will fall in approach categories B and C, while commercial aircraft will fall in C and D. Business jets typically have slower approach speeds as compared to commercial transport aircraft. Recreational and business piston and turboprop aircraft will generally fall in approach categories A and B and airplane design groups I and II.

AIRPORT AND RUNWAY CLASSIFICATION

These classifications, along with the aircraft classifications defined previously, are used to determine the appropriate FAA design standards to which the airfield facilities are to be designed and built.

Airport Reference Code (ARC): An airport designation that signifies the airport's highest Runway Design Code (RDC), minus the third (visibility) component of the RDC. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely on the airport. The current Airport Layout Plan (ALP) for the Sunport, which will be updated as part of this master planning effort, identifies an ARC of D-V currently and in the future.

Runway Design Code (RDC): A code signifying the design standards to which the runway is to be built. The RDC is based upon planned development and has no operational component.

The AAC, ADG, and runway visual range (RVR) are combined to form the RDC of a particular runway. The RDC provides the information needed to determine certain design standards that apply. The 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 most restrictive. The third component relates to the visibility minimums expressed by RVR values in feet of 1,200 (⅛-mile), 1,600 (¼-mile), 2,400

(½-mile), 4,000 (¾-mile), and 5,000 (1-mile). The RVR values approximate standard visibility minimums for instrument approaches to the runways. The third component should read "VIS" for runways designed for visual approach use only.

Approach Reference Code (APRC): A code signifying the current operational capabilities of a runway and associated parallel taxiway with regard to landing operations. Like the RDC, the APRC is composed of the same three components: the AAC, ADG, and RVR. The APRC describes the current operational capabilities of a runway under particular meteorological conditions where no special operating procedures are necessary, as opposed to the RDC which is based upon planned development with no operational component. The APRC for a runway is established based upon the minimum runway to taxiway centerline separation.

Departure Reference Code (DPRC): A code signifying the current operational capabilities of a runway and associated parallel taxiway with regard to takeoff operations. The DPRC represents those aircraft that can takeoff from a runway while any aircraft are present on adjacent taxiways, under particular meteorological conditions with no special operating conditions. The DPRC is similar to the APRC, but is composed of two components, ACC and ADG. A runway may have more than one DPRC depending on the parallel taxiway separation distance.

CRITICAL DESIGN AIRCRAFT

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using or are expected to use an airport. The critical design aircraft is used to define the design parameters for an airport. The design aircraft may be a single aircraft or a composite aircraft representing a collection of aircraft classified by the three parameters: AAC, ADG, and TDG. In the case of an airport with multiple runways, a design aircraft is selected for each runway.

The first consideration is the safe operation of aircraft likely to use an airport. Any operation of an aircraft that exceeds design criteria of an airport may result in either an unsafe operation or a lesser safety margin; however, it is not the usual practice to base the airport design on an aircraft that uses the airport infrequently.

The design aircraft is defined as the most demanding category of aircraft, or family of aircraft, which conducts at least 500 itinerant operations per year at an airport or the most demanding aircraft in regularly scheduled commercial service. Planning for future aircraft use is of particular importance since the design standards are used to plan separation distances between facilities. These future standards must be considered now to ensure that short-term development does not preclude the reasonable long range potential needs of the airport.

According to FAA AC 150/5300-13A, *Airport Design*, "airport designs based only on existing aircraft can severely limit the ability to expand the airport to meet future requirements for larger, more demanding aircraft. Airport designs that are based on large aircraft never likely to be served by the airport are not

TURBINE AIRCRAFT CLASSIFICATION

AIRCRAFT	AAC	ADG	TDG
Eclipse 500	A	I	1
Premier 390	B	I	1
Beechjet 400, T-1, Hawker 400	B	I	1
Cessna 500, 501, Citation I, SP	B	I	1
Cessna Mustang 510	B	I	1
Cessna 525, 526, CitationJet, CJ1	B	I	1
Embraer Phenom 100	B	I	1
Falcon 10	B	I	1

AIRCRAFT	AAC	ADG	TDG
Cessna 525A (CJ2)	B	II	2
Cessna 525B (CJ3)	B	II	2
Cessna Citation II Bravo 550, SP	B	II	2
Cessna Citation V, Ultra, Encore 560	B	II	2
Cessna 560 XLS	B	II	2
Cessna Citation III, VI, VII, 650	B	II	2
Cessna Citation Sovereign 680	B	II	3
Falcon 20, **50**, 900, 2000	B	II	2
Embraer Phenom 300	B	II	2

AIRCRAFT	AAC	ADG	TDG
BAe HS 125-1, 2, 3, 400, 600	C	I	2
BAe HS 125, 700, 800, Hawker 800	C	I	2
Learjet 23, 24, 25, 28	C	I	1
Learjet 31 A/B	C	I	1
Learjet 35, 36, **45**, 55	C	I	2
Lear 60	C	I	4
IAI Westwind	C	I	2

AIRCRAFT	AAC	ADG	TDG
IAI Astra 1125	C	II	2
Cessna Citation 750 (X)	C	II	3
Challenger 300	C	II	3
Challenger 600, 601, 604	C	II	3
Lockheed 1329 Jetstar	C	II	3
Gulfstream III, G300, G-1159	C	II	3
Hawker 800XP, 1000, 4000	C	II	3
Falcon 900EX, F-Series	C	II	3
Embraer ERJ 135, 140, 145	C	II	3
Canadair CRJ 200, 700, 900	C	II	3

AIRCRAFT	AAC	ADG	TDG
Gulfstream G150	D	II	3
Gulfstream II, G200	D	II	3
Gulfstream IV, G400	D	II	3
IAI Galaxy, Gulfstream G200	D	II	3

AIRCRAFT	AAC	ADG	TDG
Global Express, 5000	C	III	3
Gulfstream V, 550, 650	C	III	3
Falcon 7FX	C	III	3
B727-200	C	III	5
B-737-100, 200, 300, 400, 500, 600, 700	C	III	3
MD-81, 82, 87, 90	C	III	4
A318, A319, A320	C	III	3
A321	C	III	5
Embraer 170, 175, 190, 195	C	III	3
B-737-800, 900	D	III	3
MD-83, 88	D	III	4

AIRCRAFT	AAC	ADG	TDG
B-707	C	IV	5
B-757-200	C	IV	5
B-767-200, 300	C	IV	5
B-787 -800	C	IV	5
B-777-200	C	V	6
A330-200F	C	V	5
A330-200, 300	C	V	6

AIRCRAFT	AAC	ADG	TDG
MD-11	D	IV	6
DC-10	D	IV	5
B-747-100,200,300,400	D	V	6
B-757-300	D	IV	5
B-777-300	D	V	6
A340-200,300,500,600	D	V	6
A350-900	D	V	6

AIRCRAFT	AAC	ADG	TDG
B-747 -8, F	D	VI	6
B-767-200ER, 300ER, 400	D	VI	5
A380-800	D	VI	7

KEY: **AAC** - Aircraft Approach Category (based on approach speed); **ADG** - Airplane Design Group (based on wingspan); **TDG** - Taxiway Design Group (based on width/length of landing gear)
Note: Plane pictured is in bolded text.

Exhibit 2Q
EXAMPLE TURBINE AIRCRAFT CLASSIFICATION

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economical." Selection of the current and future critical design aircraft must be realistic in nature and supported by current data and realistic projections.

AIRPORT DESIGN AIRCRAFT

The Sunport experiences frequent activity by both commercial service and business jets. The largest commercial passenger service jet currently in service at the Sunport is the Boeing 757 as operated by United Airlines. The largest commercial air cargo jet in service is the Airbus 300-600. The Sunport experiences activity by the largest business jets, including the Gulfstream V and Bombardier Global Express.

The FAA maintains the Traffic Flow Management System Count (TFMSC) database which documents certain aircraft operations at airports. Information is added to the TFMSC database when pilots file flight plans and/or when flights are detected by the National Airspace System, usually via radar. It includes documentation of commercial traffic (air carrier and air taxi), general aviation, and military aircraft. Due to factors, such as incomplete flight plans and limited radar coverage, TFMSC data does not account for all aircraft activity at an airport by a given aircraft type. Therefore, it is likely that there are more operations at the airport than are captured by this methodology. TFMSC data is available for activity at the Sunport and was utilized in this analysis.

Exhibit 2R presents the TFMSC annual activity from 2005 through 2014. Aircraft in AAC D accounted for 3,666 operations in 2014 and have averaged 3,562 since 2005. Aircraft in ADG IV accounted for 4,454 operations in 2014 and have averaged 4,642 since 2005. Both of these categories exceed the 500 operations threshold. Aircraft classified in ADG V and VI will occasionally operate at the Sunport, but total operations by these aircraft have not reached the FAA's critical aircraft threshold in the recent past.

It is recommended that the design aircraft be changed from D-V-6 (Boeing 747) to D-IV-5 (Airbus 300-600).

The current design aircraft for the Sunport is D-V-6 as identified on the Airport Layout Plan and represented by a Boeing 747. It is recommended that the design aircraft be changed from D-V-6 (Boeing 747) to D-IV-5 (Airbus 300-600). Because there is not a single D-IV aircraft that meets the operational threshold, the design aircraft is a composite. Operations in approach category D such as the Boeing 737-800/900 and the MD-83/88 exceeds the 500 operations threshold and operations in ADG IV such as the Boeing 757, 767, and Airbus 300-600 also exceeds 500 operations threshold.

RUNWAY DESIGN AIRCRAFT

Each runway is assigned an RDC. The RDC relates to specific FAA design standards that should be met in relation to each runway.

Runway 8-26 is the primary runway and should be designed to accommodate the critical design aircraft. This runway is 13,793 feet long and has an instrument landing system providing visibility minimums as

COMMERCIAL TRANSPORT JET ITINERANT OPERATIONS BY CLASSIFICATION

ARC/ ADG	Aircraft Type	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
C-III	B-727	998	1,006	942	506	72	126	42	4	6	24
	B-737 (100, 200)	52	36	80	44	16	8	32	36	28	4
	B-737 (300)	29,986	26,252	25,722	18,610	13,182	16,238	15,326	12,374	9,582	7,756
	B-737 (400, 500, 600)	3,814	3,854	4,998	4,790	3,738	3,658	1,934	1,900	758	590
	B-737 (700)	13,786	15,888	19,216	26,534	25,088	18,680	20,520	20,790	19,892	19,206
	MD-81, 82, 87, 90	6,450	5,986	5,088	5,248	5,458	4,854	4,272	4,842	3,624	3,421
	A318, A319, A320, A321	4,620	5,976	5,642	7,218	7,516	4,278	2,652	2,124	3,522	1,284
	DC-9 (10,30.50)	1,258	6,480	1,142	1,168	470	416	256	132	76	90
TOTAL C-III		**60,964**	**65,478**	**62,830**	**64,118**	**55,540**	**48,258**	**45,034**	**42,202**	**37,488**	**32,375**
C-IV	B-707	18	22	10	14	10	6	2	-	-	-
	B-757 (200, 300)	2,936	1,392	1,452	1,388	1,084	950	1,154	940	900	1,142
	B-767 (200, 300)	440	398	290	320	740	690	734	772	1,074	1,496
	B-787 (800)	-	-	-	-	-	-	6	-	2	2
	A-300/310 (600)	2,510	2,596	2,866	3,164	2,626	2,544	2,392	2,218	1,968	1,600
TOTAL C-IV		**5,904**	**4,408**	**4,618**	**4,886**	**4,460**	**4,190**	**4,288**	**3,930**	**3,944**	**4,240**
C-V	B-777 (200)	-	-	2	-	-	2	-	-	-	-
	A-330 (200, 300)	-	-	-	-	-	2	2	-	2	2
TOTAL C-V		**0**	**0**	**2**	**0**	**0**	**4**	**2**	**0**	**2**	**2**
D-III	B-737 (800)	2,130	400	776	220	270	318	372	284	814	864
	B-737 (900)	8	6	4	10	8	6	8	22	16	24
	MD-83, 88	1,422	4,208	3,772	3,246	2,524	3,276	2,548	2,298	2,906	2,770
TOTAL D-III		**3,560**	**4,614**	**4,552**	**3,476**	**2,802**	**3,600**	**2,928**	**2,604**	**3,736**	**3,658**
D-IV	MD-11	-	-	-	-	8	150	134	12	8	12
	DC-10	34	22	20	16	4	24	144	286	296	202
TOTAL D-IV		**34**	**22**	**20**	**16**	**12**	**174**	**278**	**298**	**304**	**214**
D-V	B-747 (100, 200, 300, 400)	6	4	6	-	2	2	4	6	2	6
	B-777 (300)	2	-	-	-	4	-	-	-	-	-
	A-340/350/360 (200)	4	2	-	4	6	-	-	2	-	-
TOTAL D-V		**12**	**6**	**6**	**4**	**12**	**2**	**4**	**8**	**2**	**6**
D-VI	B-747 (8/F)	-	-	-	-	-	-	-	-	-	-
	B-767 (200ER, 300ER, 400)	2	2	-	-	-	-	-	-	-	-
	AN-124	-	8	4	-	-	2	6	6	-	2
TOTAL D-VI or larger		**2**	**10**	**4**	**0**	**0**	**2**	**6**	**6**	**0**	**2**
TOTAL ITINERANT JET OPERATIONS CAPTURED		**70,476**	**74,538**	**72,032**	**72,500**	**62,826**	**56,230**	**52,540**	**49,048**	**45,476**	**40,497**

TOTAL JET OPERATIONS BY CLASSIFICATION

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Aircraft Approach Category										
C	66,868	69,886	67,450	69,004	60,000	52,452	49,324	46,132	41,434	36,617
D	3,574	4,630	4,562	3,480	2,814	3,604	2,938	2,618	3,738	3,666
Airplane Design Group										
III	64,524	70,092	67,382	67,594	58,342	51,858	47,962	44,806	41,224	36,033
IV	5,938	4,430	4,638	4,902	4,472	4,364	4,566	4,228	4,248	4,454
V	12	6	8	4	12	6	6	8	4	8
VI	2	10	4	0	0	2	6	6	0	2

Exhibit 2R
JET OPERATIONS BY CLASSIFICATON

low as ½-mile (civilian) ⅜-mile (military) for instrument approaches to Runway 8. **Therefore, the applicable RDC is D-IV-1600**. The RDC is planned to remain the same into the future.

Runway 3-21 is the commercial crosswind runway measuring 10,000 feet long and 150 feet wide. This runway is heavily utilized by the commercial carriers when the winds dictate or as directed by the tower. The lowest visibility minimum is ½-mile to Runway 3. **The RDC for Runway 3-21 is D-IV-2400.** It is planned to remain the same into the future.

Runway 12-30 is the general aviation crosswind runway which is 6,000 feet long and 150 feet wide. This runway is most heavily used by general aviation aircraft as the winds dictate or as the tower instructs. **The RDC for Runway 12-30 is B-III-VIS.** Ultimately, a non-precision instrument approach with not lower than 1-mile visibility minimums is considered. Therefore, the future RDC for this runway is B-III-5000.

The AAC and ADG design components for each Runway RDC are anticipated to remain unchanged into the future. The RVR (visibility component) may change based on analysis and recommendations regarding potential instrument approach capability. **Table 2BB** summarizes the design aircraft components as applied currently to the airport and the runways.

TABLE 2BB
Design Aircraft
Albuquerque International Sunport

Airport Design Aircraft	Airport Reference Code (ARC)	Airport Design Aircraft	Representative Aircraft	
	D-IV	D-IV-5	Airbus 300-600	
Runway Design Parameters	**Runway Design Code (RDC)**	**Approach Reference Code (APRC)**	**Departure Reference Code (DPRC)**	**Representative Aircraft**
Runway 8-26 (500' rwy/twy separation)	D-IV-1600 (⅜-mile)	D-VI-2400 & D-V-1600	D-VI	A300-600
Runway 3-21 (450' rwy/twy separation)	D-IV-2400 (½-mile)	D-VI-2400 & D-V-2400	D-IV & D-V	B-767-300F
Runway 12-30 (340' rwy/twy separation)	B-III-VIS	B-III-VIS & D-II-5000 (1-mile)	B-III & D-II	ATR-72

Source: Current Airport Layout Plan; FAA AC 150/5300-13A, Airport Design

SUMMARY

This chapter has outlined the various activity levels that might reasonably be anticipated over the planning period as well as the critical design aircraft for the airport. Airline passenger enplanements are forecast to grow at an annual rate of 1.40 percent. Total operations are forecast to grow 0.76 percent annually. Based aircraft are forecast to grow from 165 currently to 220 by the long-term for an annual growth rate of 1.45 percent. Air cargo tons handled and operations are forecast to grow 0.59 percent and 0.61 percent, respectively.

The critical design aircraft for the Sunport is anticipated to remain unchanged from the D-V airport reference code. The runway design code for each runway is also planned to remain unchanged except for possible improvement to the visibility minimums for Runway 12-30.

The next step in the planning process is to assess the capabilities of the existing facilities to determine what upgrades may be necessary to meet future demands. The range of forecasts developed here will be taken forward in the next chapter as planning horizon activity levels that will serve as milestones or activity benchmarks in evaluating facility requirements. Peak activity characteristics will also be determined for the various activity levels for use in determining facility needs.