
B FORECASTS OF AVIATION ACTIVITY

INTRODUCTION. Forecasting, which generally commences by obtaining accurate historical and existing data, is a key component in the master planning process. The forecasts generated here are essential for analyzing existing airport facilities and identifying future needs and requirements for these facilities. Forecasting, by its very nature, is not exact, but it does establish some general parameters for development and, when soundly established, provides a defined rationale for various development activities in relation to anticipated demand. The purpose of this chapter is to not only present the Will Rogers World Airport aviation forecasts, but also to present the methodology, assumptions, and variables involved with the preparation of the forecasts.

A review and analysis of recent forecasts and planning documents relative to the Airport were conducted, which included the Federal Aviation Administration (FAA) *Terminal Area Forecast, 2006-2025*, the FAA *Aerospace Forecasts, Fiscal Years 2007-2020*, and the Bureau of Transportation Statistics *Intermodal Transportation Database*. This analysis assists in identifying quantifiable facts and trends, but because the documents were assembled in different years, the data are quite variable. This emphasizes the need for establishing a well-defined and well-documented set of base information from which to develop aviation activity forecasts.

Forecast Assumptions and Conditions

Prior to examining the current and future activity levels at the Airport, there are several conditions and assumptions that should be noted that form the basis, or foundation, for the development of the forecasts contained here. These variables represent a variety of physical, operational, and socioeconomic considerations and, to varying degrees, relate to and affect aviation activity at Will Rogers World Airport.

Weather Conditions

The most current and complete set of weather data available for Will Rogers World Airport was obtained and analyzed. With the exception of very few days annually, the Airport is not adversely affected by poor weather conditions.



Visual Flight Rules (VFR) meteorological conditions are experienced, on average, approximately 82.2% of the time annually. In addition, the Airport has a full complement of electronic landing guidance systems to assist aircraft operators during periods when weather conditions minimize a pilot’s visual capacity. Therefore, aircraft can operate at the Airport on a regular basis throughout the year, with limited interruption due to weather.

Socioeconomic Conditions

Historically, the socioeconomic conditions of a particular region affect aviation activity within that region. The most often analyzed indicators are population, employment, and income.

Population. As presented in the following table, entitled *POPULATION ESTIMATES AND PROJECTIONS 1990-2025*, the Oklahoma City Metropolitan Statistical Area (MSA) and the State of Oklahoma have demonstrated steady population growth since 1990. According to U.S. Census data compiled by the Oklahoma Department of Commerce, the population of the Oklahoma City MSA was 958,839 in 1990 and had grown to 1,083,346 in 2000. The estimated population of the metropolitan area was approximately 1,172,300 by 2006, an increase of 8.2% over 2000. Population projections indicate that the Oklahoma City MSA will increase to 1,281,300 by the year 2025, which is an increase of 9.3% from 2006 and translates into an annual growth rate of 0.5%. By comparison, the State of Oklahoma population increased from 3,145,585 in 1990 to 3,450,654 in 2000, and to 3,579,200 by 2006. It is projected to increase to 4,081,400 in 2025. This represents an increase of 14.0% from 2006, and an annual growth rate of 0.7%.

Table B1 **POPULATION ESTIMATES AND PROJECTIONS, 1990-2025**

	1990	2000	2006	2015	2025	Percent Change (2006-2025)	Annual Growth Rate
Oklahoma City Metropolitan Area	958,839	1,083,346	1,172,300	1,211,300	1,281,300	9.3%	0.5%
State of Oklahoma	3,145,585	3,450,654	3,579,200	3,838,400	4,081,400	14.0%	0.7%

Sources: Oklahoma Department of Commerce.



Employment. According to the U.S. Bureau of Labor Statistics data, and as illustrated in the following table entitled *HISTORIC AND EXISTING EMPLOYMENT DATA, 1997-2007*, the total employment figures for the Oklahoma City MSA have shown fairly steady increases since 1997, with a few slight decreases in the years 2000, 2002, and 2003. The unemployment rates for the Oklahoma City MSA have been consistently lower than the State and national rates for the time frame illustrated in the table.

Table B2 **HISTORIC AND EXISTING EMPLOYMENT DATA, 1997-2007**

	Oklahoma City MSA		State of Oklahoma		United States	
	Total Employment	Unemployment Rate	Total Employment	Unemployment Rate	Total Employment	Unemployment Rate
1997	519,021	3.4%	1,543,105	4.2%	122,776,000	4.9%
1998	526,672	3.6%	1,569,498	4.4%	125,930,000	4.5%
1999	538,355	2.7%	1,590,838	3.6%	128,993,000	4.2%
2000	537,507	2.7%	1,609,522	3.1%	131,785,000	4.0%
2001	540,931	3.6%	1,614,627	3.7%	131,826,000	4.7%
2002	539,297	4.5%	1,602,118	4.8%	130,341,000	5.8%
2003	535,753	5.2%	1,597,338	5.6%	129,999,000	6.0%
2004	543,762	4.6%	1,608,849	5.0%	131,435,000	5.5%
2005	549,635	4.3%	1,629,217	4.4%	133,703,000	5.1%
2006	554,424	3.9%	1,650,877	4.0%	136,174,000	4.6%
2007 ¹	585,500	4.6%	1,576,600	4.7%	138,038,000	4.5%

Source: Bureau of Labor Statistics. ¹ June 2007.

In addition, according to data compiled by the Oklahoma Department of Commerce, the largest employers within Oklahoma City are Tinker Air Force Base and the Oklahoma City Air Logistics Center, U.S. Postal Service, Integris Health, City Government, Oklahoma City School District, W.H. Braum Inc., Hertz Corp., OU Medical Center/HCA Healthcare of OK Inc., AT&T, OGE Energy, SSM Healthcare of Oklahoma, and the Putnam City Independent School District.

Income. Current data from the U.S. Bureau of Economic Analysis indicates that the per capita personal income for the Oklahoma City MSA, the State of Oklahoma, and the United States was \$32,875; \$32,210; and \$36,276; respectively, and Oklahoma had the third highest per capita income growth rate in the United States in 2006. Additionally, the median family income for the Oklahoma City MSA in 2006 was \$53,900, up from \$49,769 in 2005.



Gross Domestic Product. Gross Domestic Product (GDP) is the most comprehensive measure of economic activity. GDP by state is derived as the sum of the GDP originating in all the industries in a state. Real GDP by state is an inflation-adjusted measure based on national prices for the goods and services produced within a state. The latest data from the U.S. Bureau of Economic Analysis (June 2007) indicates that between 1997 and 2006, the real GDP for Oklahoma increased by over 27% compared to the national real GDP increase of 31%. The data also indicates that Oklahoma was ranked fourth in the nation for real GDP growth between 2005 and 2006 with an increase of 6.7%, almost twice the one-year national increase of 3.4%.

Community Support

Will Rogers World Airport benefits from the support of local city and county governments, as well as local industry and the citizens of Oklahoma City and the entire metropolitan area. The Airport is recognized as a vital asset contributing to the economic stability of the city, region, and State. The overall position of the populace is one of continued growth and development, with special focus on the incentive that a high-quality commercial air service airport provides to attract additional economic and industrial development.

Community/Airport Location and Potential

Oklahoma City, as the State's capital, provides a strong and definable market area for commercial passenger service. The central location within the State provides for a primary and secondary air service area with a population over 1.2 million. Passengers are drawn from all over the western and southern parts of the State for the excellent commercial air service. The airfield configuration, numerous instrument approach procedures, and uninhibited airspace provide a safe aviation environment for all aircraft types. With ample undeveloped property served by an excellent infrastructure system, the Airport has the potential to attract additional aviation and non-aviation development in the future.

Negative or Neutral Factors

As a general comment, the Airport has very few negative factors and is in an enviable position due to its many positive features and conditions. However, there are some broad factors that can have a negative or neutralizing impact on the Airport, and the aviation industry, and these are considered in the planning process.

One factor is due to the state of the attitude of the traveling public toward commercial airline travel since the terrorist events of September 11, 2001. Certainly, business and pleasure travel declined in the aftermath of those events; however, strong recovery trends are being seen since



2002 at Will Rogers World Airport, and at most airports nationwide. The economic condition of many of the “legacy” airlines operating with the hub-and-spoke system is also of concern. This is being offset to a great degree by the positive economic conditions being experienced by the low-cost, point-to-point airlines.

The overall condition of the general aviation industry in the United States has been a negative factor for several years. Beginning in 1978, many sectors of the general aviation industry have been in recession, and, the FAA has identified several factors that precipitated this downturn, including economic recessions, fuel crises, the termination of the GI Bill, and the repeal of the investment tax credit. Factors including the rising expense of owning and operating an aircraft (i.e., costs of insurance, fuel, and maintenance), increases in air space restrictions affecting fair-weather flying, reductions in personal leisure time, and shifts in personal preference as to how leisure time is spent have tended to restrict the single engine light aircraft segment of the industry in particular.

There are also a number of bright spots having a positive impact in certain segments of the general aviation industry. They include the passage of the General Aviation Revitalization Act of 1994. This legislation has caused renewed interest and optimism among U.S. aircraft manufacturers, who are either re-entering the single engine aircraft market after several years’ absence, or are increasing future production schedules to meet expected renewed demand. The growth in the amateur-built aircraft market, the strength of the used aircraft market, and the introduction of light-sport aircraft indicate that demand for inexpensive personal aircraft is still relatively strong.

Other Aviation Factors

Nationally, the business/corporate component of general aviation is growing at a much faster rate than other aspects of the industry. Continued concerns for corporate safety/security for corporate staff, combined with increased processing times at some U.S. airports, have made fractional ownership, corporate, and on-demand charter flights practical alternatives to travel on commercial flights. In the post-9/11 environment, the speed and efficiency of business jet travel has created large dividends for the corporate community in terms of offering greater schedule flexibility over the commercial air carriers and less aggravated security considerations.

The business/corporate segment should continue to benefit from the growing market for Very Light Jets (VLJs). VLJs began entering the fleet in 2007 and, according to some industry forecasts, are expected to grow by 400 to 500 aircraft per year after that. These relatively inexpensive (compared to traditional business jets) turbojet powered aircraft are about the size of



twin-engine piston aircraft and are designed to take off and land at comparable speeds to twin-engine piston aircraft, as well. Such aircraft have the promise to transport six to eight adults in safety and comfort at operating costs and to destinations currently unreachable with the existing business jet fleet. While it is anticipated that the popularity of VLJs will be relatively strong, there is no responsible means to speculate with any measure of accuracy, how and to what extent VLJs will be specifically employed.

Historical and Existing Activity Summary

A tabulation of historical aviation activity since 1997 is presented in the following table entitled *HISTORICAL AVIATION ACTIVITY, 1997-2006*. This table presents the number of enplaned passengers and four categories of aircraft operations (an operation is defined as either a takeoff or a landing), including: commercial, general aviation, military, and total operations.

Table B3 **HISTORICAL AVIATION ACTIVITY, 1997-2006**

Year	Passenger Enplanements	%	Commercial Operations	General Aviation Operations	Military Operations	Total Aircraft Operations
1997	1,733,992		61,220	71,045	26,957	159,222
1998	1,713,744	-1.2%	63,026	65,619	30,380	159,025
1999	1,717,520	0.2%	67,688	66,798	28,976	163,462
2000	1,752,450	2.0%	65,162	64,147	35,221	164,530
2001	1,748,593	-0.2%	62,617	59,433	43,343	165,393
2002	1,574,738	-9.9%	57,169	62,943	57,774	177,886
2003	1,604,358	1.9%	64,000	43,874	55,268	163,142
2004	1,666,115	3.8%	63,482	32,197	42,875	138,554
2005	1,736,722	4.2%	60,624	28,360	19,000	107,984
2006	1,809,354	4.2%	61,414	25,459	21,445	108,318

Source: Oklahoma City Department of Airports records, Fiscal Year from July 1-June 30.

Note: % equals the percentage increase or decrease from previous year.



Passenger Enplanements

Historic passenger enplanements at Will Rogers World Airport have increased overall between 1997 and 2000, with the exception of 1998. Enplanements declined in 2001 and 2002, which can be attributed to the events of September 11, 2001 and the nationwide economic recession that began in late 2000. The increasing trend beginning in 2003 has returned the Airport's enplaned passenger counts to pre-9/11 levels in 2006. The numbers demonstrate a consistent passenger market base for the area.

Aircraft Operations

Commercial Operations. The number of commercial aircraft operations (i.e., defined as all scheduled passenger aircraft, air cargo aircraft, and air taxi aircraft operations) has fluctuated during the historical period presented in the table. The highest number of operations occurred in 1999, the lowest in 2002. Since 2002, the number of commercial aircraft operations has remained within the 60,000-64,000 range. The overall lower number is primarily a result of airlines reorganizing their route structures to meet the ever-changing demands of the aviation industry. Because this Master Plan Update focuses primarily on the planning of physical facilities, air taxi operations (i.e., defined as a company or individual performing air passenger and/or air cargo transportation service on a non-scheduled basis over unspecified routes) will be included in the general aviation operations category, since most air taxi operations are performed by general aviation aircraft.

General Aviation Operations. General aviation aircraft operations are defined as those operations that are not commercial passenger service, air cargo, or military. During the historical period presented in Table B3, general aviation operations at Will Rogers World Airport have decreased dramatically. General aviation aircraft activity usually has many "peaks and valleys" in response to changes in the local and national economies. However, it should also be noted that, nationwide, there has been an overall trend of declining general aviation activity associated with pleasure flying and training over the past few years.

Military Operations. The majority of historic military operations at Will Rogers World Airport can be attributed to the Air National Guard training flights of C-130 aircraft, with some use by T-1, T-6, T-37, T-38, and C-21 aircraft. Historic military aircraft operations have varied from a high of nearly 58,000 in 2002 to a low of 19,000 in 2005. The variation in operations is attributed to increased activity leading up to, and during, the initial stages of the war in Iraq, which began in March 2003, with a decrease during the subsequent years as the troop build-up ended. As stated in the previous chapter, a recent Base Realignment and Closure (BRAC) decision reassigned the C-130 aircraft operated and maintained by the 137th Airlift Wing at the



Air National Guard station and transition to KC-135 tanker aircraft, which will be based at Tinker AFB. Mission changes have resulted in the relocation of the Air Force Flight Standards Agency C-21 aircraft, the Oklahoma Army National Guard C-12 and C-23 fixed wing aircraft, and the OH-58 rotary wing aircraft to the Air National Guard station.

Local and Itinerant Operations

Aircraft operations are placed into two categories, local and itinerant. Local operations generally reflect training operations. The *Air Traffic Control Handbook* defines a local operation as any operation performed by an aircraft operating in the local traffic pattern or within sight of the control tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at an airport. Itinerant operations are all other aircraft operations. The historic data indicates that local operations have accounted for less than 10% of the total operations at Will Rogers World Airport. Of the local operations performed in 2006, general aviation aircraft accounted for less than 8% of the total, and over 92% were attributed to military aircraft.

Existing Operations by Aircraft Type

The current level of aviation activity by aircraft type is summarized in the following table entitled *EXISTING OPERATIONS BY AIRCRAFT TYPE, 2006*. This summary is indicative of the air taxi operations counted as general aviation operations, and the commercial service operations accounting for only scheduled airline service operations. Of the total 2006 aircraft operations at Will Rogers World Airport, approximately 52% were attributed to commercial service operations. General aviation aircraft accounted for roughly 24%, air cargo aircraft comprised about 4% of operations, and military aircraft performed approximately 20% of all aircraft operations.

As can be seen, the Airport currently experiences a sizeable number of business jet general aviation operations when compared with other aircraft types. This is reflective of the importance of Will Rogers World Airport to the business and corporate community of the region, and is indicative of the nationwide trend in general aviation aircraft operations, a trend that is expected to continue in the future. Of the general aviation aircraft operations, single engine aircraft performed approximately 34% and about 20% were attributed to multi-engine piston aircraft. Some 11% were credited to turboprop aircraft, business jet aircraft accounted for roughly 34%, and helicopters performed approximately 1%.



Currently, air cargo at Will Rogers World Airport is transported using turboprop aircraft (i.e., Cessna 208 and Piper PA-31), narrow body jet aircraft (i.e., B-727-200, B-757-200, and DC-9-30), and the belly compartments of passenger aircraft. The vast majority of air cargo aircraft operations were performed by narrow body jet aircraft (i.e., 70%), with roughly 30% conducted by single engine turboprop aircraft, and less than 1% were by twin-engine aircraft.

Of the military aircraft operations, approximately 72% were attributed to jet aircraft (T-1, T-38, T-37, E-6, E-3 and KC-135) and 28% were by turboprop aircraft (C-130 and T-6). Again, the majority of historical military activity resulted from the Air National Guard operation and maintenance of C-130 aircraft associated with 137th Airlift Wing. More recent activity has been a result of training operations, the Air National Guard station mission change to supporting the Air Force Flight Standards Agency and its two C-21 aircraft, and the relocation of Oklahoma Army National Guard flying missions of four OH-58 rotary aircraft and one C-12 fixed wing aircraft.

Table B4 **EXISTING OPERATIONS BY AIRCRAFT TYPE, 2006**

Aircraft Type	Operations	
<i>Commercial Service</i> ¹	56,652	52.3%
Regional Jet	32,118	56.7%
Narrow Body Jet	24,534	43.3%
<i>General Aviation</i> ²	26,375	24.3%
Single Engine ³	8,862	33.6%
Multi-Engine ³	5,354	20.3%
Turboprop ³	2,849	10.8%
Business Jet ³	8,941	33.9%
Helicopter ³	369	1.4%
<i>Air Cargo</i> ¹	3,846	3.6%
Single Engine	1,120	29.1%
Twin-Engine	20	0.5%
Narrow Body Jet	2,706	70.4%
<i>Military</i> ¹	21,445	19.8%
Turboprop	6,005	28.0%
Jet	15,440	72.0%
TOTAL	108,318	

Sources: ¹ Will Rogers World Airport records. ² Will Rogers World Airport records. Includes air taxi operations. ³ Will Rogers World Airport Air Traffic Control Tower personnel estimate.



Air Cargo

As revealed in the following table, Will Rogers World Airport has largely followed the conventional air cargo patterns for non-hub airports in small to medium-sized markets. However, the losses have been even more dramatic, with the Airport incurring losses in total air cargo volumes of almost 33% between 1997 and 2006. In 1997, mail comprised roughly 20% of the Airport's total air cargo volumes, but this particular tonnage has fallen more than 85% during the decade. During this period, freight fell by almost 20%. Total cargo fell five consecutive years beginning in 2000 until a modest (less than 4%) increase in 2005, and an even smaller increase in 2006 (approximately 1%).

Table B5 **CARGO TONNAGE (METRIC TONNES), 1997 - 2006**

Year	Enplaned Freight	Deplaned Freight	Total Freight	Enplaned Mail	Deplaned Mail	Total Mail	Total Cargo	Percent Change
1997	18,423	21,902	40,325	4,772	5,031	9,803	50,128	
1998	19,198	22,281	41,479	3,950	4,941	8,891	50,370	0.5%
1999	20,332	24,199	44,531	4,237	4,397	8,634	53,165	5.5%
2000	19,100	23,865	42,965	4,782	4,207	8,989	51,954	-2.3%
2001	18,732	22,156	40,888	3,465	2,927	6,392	47,280	-9.0%
2002	14,491	17,634	32,125	1,492	1,018	2,510	34,635	-26.7%
2003	13,461	15,956	29,417	1,354	1,493	2,847	32,264	-6.8%
2004	12,758	16,767	29,525	1,175	1,468	2,643	32,168	-0.3%
2005	14,597	17,098	31,695	643	1,026	1,669	33,364	3.7%
2006	14,308	18,098	32,406	724	583	1,307	33,713	1.0%

Source: Airports Council International – North America.

As noted in the following table, the extent of three integrated¹ carriers' cargo dominance at Will Rogers World Airport is hard to overstate. For the 12 months (July 2006 – June 2007), FedEx had almost 63% market share at the Airport, and almost 70% of enplaned freight. The three integrated carriers combined market share was almost 94%. Even more extreme than at many other airports, the market share of passenger carriers has fallen precipitously to less than 5%.

¹ So-called because of the integration of proprietary services – specifically multi-modal transportation including owned aircraft and trucking services, as well as freight forwarding and customs brokerage.



Table B6 AIR FREIGHT MARKET SHARE, 2006

Carrier	Enplaned Freight	Deplaned Freight	Total Market Share
FedEx	69.9%	57.5%	62.9%
UPS	13.8%	24.1%	19.6%
DHL/ABX	11.8%	10.5%	11.1%
Integrated Carriers Total	95.5%	92.1%	93.6%
All Freighters	97.0%	94.0%	95.3%
Belly Carriers	3.0%	6.0%	4.7%

Source: Airports Council International – North America.

Based Aircraft

The number of aircraft that can be expected to base at any airport is dependent upon many factors, such as aircraft maintenance facilities, airport communication practices, services provided at the Airport, airport proximity and ease of access from both home and work, aircraft basing amenities available at surrounding airports, and similar factors. According to the FAA *Airport Master Record*, Form 5010-1 for Will Rogers World Airport, there were 43 aircraft based at the Airport in 2006. Of that total, two are single engine aircraft, 21 are multi-engine aircraft, and 20 are jet aircraft. The historical summary of based aircraft is presented in the following table entitled *SUMMARY OF BASED AIRCRAFT, 1997-2006*. Historical data from 1997 through 2005 were compiled from FAA’s *Terminal Area Forecasts, Fiscal Years 2006 to 2025*.



Table B7 **SUMMARY OF BASED AIRCRAFT, 1997-2006**

Year	Total Based Aircraft
1997 ¹	61
1998 ¹	61
1999 ¹	56
2000 ¹	56
2001 ¹	60
2002 ¹	57
2003 ¹	57
2004 ¹	45
2005 ¹	43
2006 ²	43

Sources: ¹ FAA Terminal Area Forecasts, Fiscal Years 2006 to 2025.

² FAA Airport Master Record, Form 5010-1.

Aviation Activity Forecasts

Aviation activity forecasts for airports are often established using several sets of assumptions that generate different forecast scenarios. To provide a broad view of future airport utilization potentials, several forecast scenarios are used in this Master Plan Update.

The forecasting of any type of future activity is as much an art as a science, particularly in the current era of airline deregulation and changing operating methodologies (legacy airline hub & spoke systems vs. low cost carrier’s point-to-point systems). Any forecast represents a “best guess” or “deducted guess” at a particular point in time. It must, therefore, be revised and updated periodically to reflect new conditions and developments.

Passenger Enplanement Forecast

Passenger enplanement forecasts are an important element of the forecasting effort as they form the cornerstone for formulating projections for commercial service aircraft operations, passenger terminal building requirements, terminal apron requirements, and commercial service gate requirements. Total enplanements at the Airport were evaluated as a percentage of the total U.S. domestic enplanements, as presented in the following table entitled *MARKET SHARE OF TOTAL U.S. DOMESTIC ENPLANEMENTS, 2000-2006*. As can be seen, for the seven-year period, the Airport has enplaned a steady percentage of the total nationwide domestic enplanements, with an average market share of approximately 0.27%.



Table B8 MARKET SHARE OF U.S. DOMESTIC ENPLANEMENTS, 2000-2006

Year	U.S. Domestic Enplanements ¹	Will Rogers World Airport Enplanements ²	Percentage of the U.S. Market
2000	641,155,514	1,752,450	0.27%
2001	626,751,076	1,748,593	0.28%
2002	574,627,537	1,574,738	0.27%
2003	587,829,547	1,604,358	0.27%
2004	628,492,083	1,666,115	0.27%
2005	669,433,868	1,736,722	0.26%
2006	668,414,385	1,809,354	0.27%

Sources: ¹ FAA Aerospace Forecasts, Fiscal Years 2007-2020. ² Will Rogers World Airport personnel.

Forecasts of passenger enplanements were produced for various scenarios and are presented in the following table entitled *PASSENGER ENPLANEMENTS FORECASTS, 2006-2026*. Also presented are a trend projection (TP) based on historical data and forecasts generated in the FAA *Terminal Area Forecasts, Fiscal Years 2006-2025* (TAF). As can be seen in the table, the trend projection indicates a decreasing growth rate of 0.3%. According to the forecast contained in the *Terminal Area Forecasts*, passenger enplanements at Will Rogers World Airport are expected to increase at an average annual growth rate of approximately 2.0%.

Table B9 PASSENGER ENPLANEMENTS FORECASTS, 2006-2026

Year	TP	TAF	Scenario One	Scenario Two	Scenario Three
2006 ¹	1,809,354	1,786,342	1,809,354	1,809,354	1,809,354
2007	1,704,557	1,820,811	1,845,500	1,873,700	1,873,700
2008	1,704,338	1,856,179	1,882,400	1,932,400	1,932,400
2009	1,704,120	1,892,472	1,920,100	1,992,800	1,992,800
2010	1,703,901	1,929,719	1,958,500	2,056,600	2,056,600
2011	1,703,683	1,967,950	1,997,700	2,123,100	2,123,100
2016	1,702,590	2,174,941	2,205,600	2,507,400	2,507,400
2021	1,701,498	2,411,457	2,435,200	2,768,400	2,982,500
2026	1,700,405	---	2,688,600	3,056,500	3,523,200

Sources: BARNARD DUNKELBERG & COMPANY. TP - Trend Projection, based on 1996-2006 data. Average annual growth rate of -0.3%. TAF - FAA *Terminal Area Forecast, Fiscal Years 2006-2025*. Average annual growth rate of 2.0%. ¹ Actual. --- Indicates data unavailable or not necessary for forecasting effort of this Master Plan Update.



Three forecast scenarios were developed to appropriately reflect current enplanement figures and provide realistic projections for the 20-year planning period. The forecast scenarios generated for this Master Plan Update assume, for the most part, straight-line growth. While it is recognized that straight-line (consistent) growth never occurs year after year for many years, average annual growth methodologies serve intermediate and long-range planning purposes quite well. It should be noted that it is not the actual numbers that are most important, but the reasoning, assumptions, and trends that the numbers represent.

Scenario One. Scenario One is a conservative projection with a 20-year average annual growth rate of 2.0%. This is the same annual average growth rate that is used by the FAA in the TAF projection for Will Rogers World Airport, with the only difference being the base year number (i.e., FAA estimated that annual enplanements in 2006 were 1,786,342; while the actual count was 1,809,354).

Scenario Two. This is a moderate forecast that recognizes the recent trend over the past three years of more significant increases in passenger enplanements and the increased airline service that was initiated in 2007. Scenario Two assumes that Will Rogers World Airport will maintain its market share of the U.S. domestic enplaned passengers for the initial ten years of the 20-year planning period, which, as indicated previously, is approximately 0.27%. The total forecast for domestic enplaned passengers has been published most recently in the FAA's *Aerospace Forecasts, Fiscal Years 2007-2020*, which indicates an annual average growth rate of 3.4% through the year 2020. In the last ten years of the planning period, this scenario projects that enplanements will increase at the same rate identified in the TAF (i.e., 2.0% annually).

Scenario Three. This is a more aggressive projection that is based on the positive aspects of the local and regional economies and the anticipation that these factors will continue to influence passenger activity at the Airport for the next 20 years. Basically, Scenario Three indicates Will Rogers World Airport will maintain its market share (i.e., 0.27% of total domestic annual enplanements), and that enplanements will increase at a rate of 3.4% (the same average rate of growth projected in the FAA's *Aerospace Forecasts, Fiscal Years 2007-2020*) for the entire 20-year planning period.

Recommended Forecast Scenario. *The recommended forecast for this Master Plan Update is Scenario One.* This forecast reflects a steady, progressive, and realistic increase in enplanements. This scenario will be used for facilities planning to assist in determining the appropriate development objectives for the Airport.



Commercial Service Operations Forecast

The relationship between passenger enplanements and commercial service operations can vary significantly, in that enplanements can increase without a corresponding increase in operations, or even increase following a decrease in operations. Often, this results from the use of larger aircraft with greater seating capacity, and/or more efficient scheduling with increased passenger load factors. These variables make commercial service operational forecasting more challenging.

The establishment of projected passenger enplanements is required to properly project commercial service operations. To accommodate the expected increases in passenger enplanements, various strategies can be employed, including: utilizing larger aircraft on the same number of flights; increase the frequency of flights while using the same size aircraft; and, increase the Boarding Load Factor (BLF) by enplaning more passengers on the same number of flights and same size aircraft. Or, as is the case in most instances, a combination of the three strategies can be used.

Fleet Mix. The process of forecasting commercial service operations involves the evaluation of the type of aircraft currently providing service to the Airport and a projection of the type that may be expected to serve the Airport in the future. With the type of aircraft known, average seating capacity and load factors can be formulated, which then can be equated to a quantity of aircraft operations that will be required to accommodate forecast enplanement demand. The average seating capacity per aircraft departure at Will Rogers World Airport during the fiscal year was 86.81.

The FAA indicates that the national average seating capacity of air carrier aircraft used in the domestic market was 120.4 in 2005 and 120.2 in 2006. The FAA expects aircraft size to increase to 121.3 seats by 2011, then decline gradually through 2015 to 120.9 seats. Seating capacity will start to recover in 2016 and increase to 121.4 seats by 2020. According to the FAA, the mainline aircraft average seating capacity was 150.4 seats in 2006 and predicts this average will decrease to approximately 150.3 in 2007. The overall average for mainline carriers will peak in 2010 at 151.2 seats and then gradually decline to 147.7 by 2020. The regional airline fleet had an average capacity of 50.0 seats in 2006. It is expected to increase to 50.8 seats in 2007 and 59.0 seats in 2020. This is reflective of the larger regional jets (70-90 seats) that are currently entering the fleet. The trend toward the use of larger regional jets is expected to continue in the future.

Boarding Load Factor (BLF). Boarding Load Factor (BLF) is the ratio of seats available on any particular aircraft compared to the number of passengers actually boarding (e.g., an aircraft has



50 seats and 25 passengers board, the BLF is 50%). In 2006, the BLF ratio for all aircraft serving Will Rogers World Airport was approximately 73.6%. According to FAA estimates, the nationwide average 2006 BLF being achieved within the domestic market was 78.7%, and foresees this ratio increasing to approximately 80.3% by 2020.

The commercial service aircraft operational forecasts have been generated utilizing the selected enplanement forecast (i.e., Scenario One) and are presented in the following table entitled *COMMERCIAL SERVICE OPERATIONS FORECAST, 2006-2026*. Currently, the percentage of regional jet aircraft providing service to the Airport is approximately 57%, compared to the percentage of narrow body jet aircraft of 43%. The percentage use of regional jets is projected to decrease slightly to 55% in 2026, compared to 45% for narrow body aircraft. The forecast assumes that operations by the smaller regional jet aircraft (i.e., 50 or less seats) will actually decrease, but will remain a significant portion of the overall total commercial service aircraft operations. It is expected that, as passenger enplanements increase, larger regional jet aircraft will replace smaller regional jets on selected routes, narrow body jet aircraft with greater passenger seating will be utilized, new generation aircraft will replace aging aircraft, and additional markets will be served.

Also presented in the table are the average seats per departure and the BLF used as assumptions in the forecasting process. The average seats per departure increases as larger regional jets replace the smaller regional jets, and the use of narrow body jet aircraft increases slightly. The BLF increases slightly during the 20-year period, from 73.6% currently to just below 80% (slightly lower than the FAA forecast). The overall commercial service aircraft operations have an annual growth rate of 1.3%.



Table B10 **COMMERCIAL SERVICE OPERATIONS FORECAST, 2006-2026**

Aircraft	Seats	2006¹	2011	2016	2021	2026
<i>Regional Jets</i>						
CRJ-200, ERJ-145	50	24,914	25,000	25,000	24,000	23,000
CRJ-700, ERJ-170	70	6,046	7,500	9,000	10,000	12,000
CRJ-900, ERJ-190	90	1,158	1,600	2,300	3,500	5,000
<i>Narrow Body Jets</i>						
B-737-500, A-318, DC-9-30/40	100-120	3,822	4,200	4,800	5,500	6,000
MD-80/83, B-737-300/ 700, DC-9-50, A-319	121-140	18,924	20,000	21,000	23,000	24,000
B-737-800/900, MD-88, A-320	140-180	1,686	1,800	2,000	2,300	3,000
B-757-200, A-321	180+	102	125	150	200	250
TOTAL		56,652	60,225	64,250	68,500	73,250
Avg. Seats per Departure		86.81	87.90	88.64	90.77	92.15
BLF		73.6%	75.5%	77.5%	78.3%	79.7%

Source: BARNARD DUNKELBERG & COMPANY. ¹ Actual. BLF - Boarding Load Factor. --- Indicates no operations anticipated by aircraft type during the applicable time frame.

General Aviation Activity Forecast

As discussed earlier, recessions and growth periods in the country’s economic cycle have historically impacted general aviation operations overall. However, with more of the general aviation aircraft fleet being used for business purposes than it was in the past, the economy should have somewhat less of an effect upon overall general aviation activity. As is occurring at many airports around the nation (particularly commercial service airports), the amount of general aviation activity has been declining over the past several years. This decline is attributable to less flying for pleasure and training. This trend is countered, to some degree, by increases in the amount of corporate/business activity utilizing turbine-powered aircraft. However, the increases for business use numbers do not equal the decreases in the number of operations conducted by smaller, piston driven aircraft. Because of the economic conditions that prevail in the Oklahoma City Metropolitan Area, the previously mentioned legislative action limiting general aviation aircraft and parts manufacturers liability, and the Airport’s excellent facilities (runways, taxiways, approaches, and available landside development areas), it is anticipated that general aviation itinerant traffic and business activity will increase at the Airport. However, this increase is likely to revolve around increased business activity, as opposed to significant increases in training and/or pleasure flying.



In developing the general aviation activity forecasts, as with the enplanements and commercial service operations forecasts, several general aviation forecasts and national trends were reviewed. Included in this assessment, and presented in the following table entitled *GENERAL AVIATION OPERATIONS FORECAST SCENARIOS, 2006-2026*, are several general aviation operational forecasts, including the forecasts generated in the FAA's *Terminal Area Forecasts (TAF), Fiscal Years 2006-2025* and two scenarios developed for this Master Plan Update. Because of the decline in the number of general aviation operations over the past few years, the trend projection shows unrealistic rapidly declining numbers and is not included in the following table. As can be noted in the following table, the TAF forecast projects 1.0% average annual growth through 2025. According to forecast contained in the FAA's *Aerospace Forecasts, Fiscal Years 2007-2020*, general aviation operations at airports with both FAA operated and contract air traffic control towers are projected to grow at an average annual rate of 1.8%. These same forecasts expect general aviation aircraft hours flown to increase at an average annual growth rate of 3.4%.

Table B11 **GENERAL AVIATION OPERATIONS FORECAST SCENARIOS, 2006-2026**

Year	TAF	Scenario One	Scenario Two
2006 ¹	18,149	26,375	26,375
2007	18,385	26,640	26,850
2008	18,623	26,900	27,330
2009	18,865	27,170	27,830
2010	19,111	27,450	28,330
2011	19,360	27,720	28,840
2016	20,463	29,130	31,530
2021	21,322	30,620	34,470
2026	---	32,180	37,680

Sources: BARNARD DUNKELBERG & COMPANY. TAF – FAA Terminal Area Forecast, Fiscal Years 2006-2025. Average annual growth rate of 1.0%. ¹ Actual, including non-scheduled air taxi operations.
 --- Indicates data unavailable or not necessary for forecasting effort of this Master Plan Update.

Scenario One. The operations forecast reflected in Scenario One illustrates an annual growth rate of approximately 1.0%, which parallels the growth rate projected in the FAA's TAF for Will Rogers World Airport. The difference between this forecast scenario and the TAF is that the base year number utilizes fiscal year data provided by the Airport and includes the air taxi operations that cannot be attributed to commercial passenger or air cargo activity (i.e., the general aviation operations for 2006 are 26,375 compared to the estimated TAF 2006 data of



18,149). This scenario assumes that the local, regional, and national economies will remain constant, but growth in the general aviation activity at Will Rogers World Airport will not be as strong as it is on average nationwide.

Scenario Two. This forecast uses an annual growth rate of 1.8%, which corresponds to the FAA nationwide general aviation operations forecast growth rate expected at towered airports. This scenario assumes that the local, regional, and national economies continue to improve and have a positive influence on general aviation activity. It also assumes that the Airport is able to provide lease options and aviation fuel costs that are competitive with other airports in the region, and in consideration of the FAA's activity forecast, the Airport will maintain its current market share of the total general aviation activity on a national basis. *This is the recommended general aviation operations forecast for use in this Master Plan Update.*

Military Operations Forecast

The amount of military operations at any one airport is determined by two primary components. The first is Department of Defense (DOD) funding, which has been increasing in recent years, but has an uncertain future and is difficult to predict with any long-term accuracy. The second is training agreements or fueling contracts an airport or a fixed base operator (FBO) may have with the DOD. Due to the recent re-assignment of the Air National Guard C-130 aircraft, a dramatic decrease is expected in military aircraft operations. However, the fewer C-130 operations should be offset somewhat by the relocation of Oklahoma Army National Guard C-12, C-23, and OH-58 aircraft, and the Air Force Flight Standards Agency C-21 aircraft, to the Air National Guard station. Additionally, training activity by various aircraft, including T-1, T-6, T-37, T-38, C-130, C-21, E-6, and KC-135 aircraft, are expected to continue at or near existing levels during the 20-year period of this planning document. The following table, entitled *MILITARY OPERATIONS FORECAST, 2006-2026*, presents the total military operations forecasts.



Table B12 **MILITARY OPERATIONS FORECAST, 2006-2026**

Year	Operations
2006 ¹	21,445
2011	15,800
2016	15,800
2021	15,800
2026	15,800

Source: BARNARD DUNKELBERG & COMPANY. ¹ Actual.

Air Cargo Activity Forecast

The following narrative is a summary of a study contained in Appendix One, which is entitled *Cargo Forecast Will Rogers World Airport*. As presented earlier, air cargo volumes decreased by almost 33% from 1997 through 2006. Many of the same forces that have diminished air cargo volumes recently will continue to challenge its growth. Boeing projects the Intra-North America market to grow at only 3.8% per year through year 2025. Moreover, much of that growth will accrue at regional cargo hubs, rather than spoke markets like Will Rogers World Airport. International routes linking North America to Asia and Europe are projected to grow at higher rates. However, Will Rogers World Airport, and most other North American markets, is unlikely to benefit from that growth as carriers like FedEx and UPS allocate new freighters to fast-growing Intra-Asia and Domestic China routes on which the carriers are still developing their hub-and-spoke networks. Slow-growth U.S. markets are more likely to have their growth met with trucks to the greatest extent possible and then by changes in gauge of aircraft rather than additional freighter frequencies.

The slow air cargo growth projected for North American airports is likely to be even more marginal for non-hub airports such as Will Rogers World Airport, which will not directly participate in the growth in trans-Pacific cargo volumes. As presented in the following table, entitled *AIR CARGO FORECAST (METRIC TONNES), 2006-2026*, growth for mail has been forecast at a steady 1% annual growth rate for the 20-year period, while growth rates for freight are more variable and generally higher than for mail, with an overall annual growth rate of 2.8%. Overall, total air cargo (i.e., both freight and mail) is expected to increase by an average annual growth rate of 2.7%. While these growth rates may seem conservative, it bears noting that a strict trend analysis based on the preceding ten years would actually have the Airport's cargo volumes further diminishing in the future. The projections suggest that air cargo volume may not reach the former peak year (i.e., 53,165 metric tonnes in 1999) until near the end of the forecast period.



Table B13 **AIR CARGO FORECAST (METRIC TONNES), 2006-2026**

Year	Enplaned Freight	Deplaned Freight	Total Freight	Enplaned Mail	Deplaned Mail	Total Mail	Total Freight & Mail
2006 ¹	14,308	18,098	32,406	724	583	1,307	33,713
2007	14,680	18,569	33,249	731	589	1,320	34,569
2008	15,062	19,051	34,113	739	595	1,334	35,446
2009	15,453	19,547	35,000	746	601	1,347	36,347
2010	15,855	20,055	35,910	753	607	1,360	37,270
2011	16,267	20,576	36,844	761	613	1,374	38,217
2016	18,950	23,970	42,920	800	644	1,444	44,363
2021	21,756	27,519	49,274	841	677	1,518	50,792
2026	24,735	31,287	56,022	883	711	1,594	57,617

Source: Webber Air Cargo. ¹ Actual.

Forecasting air cargo aircraft operations is only broadly related to annual freight volume forecasts. Air cargo aircraft capacity is much more a function of daily and directional demand. The same air cargo aircraft completes two different operations – inbound and outbound – on a daily basis. With virtually all of the Airport’s mail either carried in the belly compartments of air carrier passenger aircraft or already reported in the volumes of air cargo airlines, air cargo aircraft operations projections will consider only air freight volumes (i.e., mail is excluded).

The projected incremental growth in enplaned and deplaned air cargo is projected to be less than two metric tonnes in each direction until the year 2010. Given the capacity of air cargo aircraft currently operating at the Airport, air cargo airlines are likely to absorb some growth with existing fleets and frequencies, unless existing flights are already full in either direction. Long-term, air cargo airlines may use larger aircraft to avoid adding frequencies or even to reduce frequencies. Air cargo airlines may also utilize trucks for deferred shipments (i.e., two days and more), which the integrated air cargo carriers report are the fastest growing domestic segments. Alternatively, air cargo airlines may split capacity between multiple markets such that a single aircraft might operate between a hub airport and two spoke airports, before returning to the hub airport.

Given the alternatives available to increased flight operations, as well as the competition for new air cargo aircraft from faster growing regions, the following table, entitled *AIR CARGO AIRCRAFT OPERATIONS FORECAST, 2006-2026*, provides the expected air cargo aircraft operations that will meet the increased air cargo volume shipments.



Table B14 AIR CARGO AIRCRAFT OPERATIONS FORECAST, 2006-2026

Year	Total Air Cargo ¹ (Metric Tonnes)	Total Daily Increase (Metric Tonnes)	Average Daily Operations	Annual Operations
2006 ²	32,406		16	3,846
2007	33,249	3.4	16	3,846
2008	34,113	3.5	16	3,846
2009	35,000	3.5	16	3,846
2010	35,910	3.6	18	4,374
2011	36,844	3.7	18	4,374
2016	42,920	5.2	20	4,902
2021	49,274	5.4	22	5,430
2026	56,022	5.7	24	5,958

Source: Webber Air Cargo. ¹ Excludes air mail volumes. ² Actual.

This forecast of air cargo activity does not exclude the potential for some extraordinary event such as the selection of Will Rogers World Airport as a regional hub by an air cargo carrier. Such an assumption is not built into the air cargo forecast, as the likelihood of this event happening is not certain enough. However, the potential does exist and should be recognized.



Operations Forecast by Aircraft Type

With the total number of aircraft operations projected for each category of user, the next step in the forecasting process involves the individual and collective use of the Airport by various types of aircraft. The types of aircraft expected to use the Airport assist in determining the amount and type of facilities needed to meet the aviation demand.

The following table, entitled *SUMMARY OF OPERATIONS FORECAST BY AIRCRAFT TYPE, 2006-2026*, depicts the approximate level of use by aircraft types that are projected to use Will Rogers World Airport. As can be noted, total annual operations are anticipated to increase during the planning period by approximately 19.5% by the year 2026 (over 2006 annual operations). As a percentage of total operations, commercial service aircraft operations are expected to increase from 52.3% in 2006 to 56.6% in 2026; general aviation aircraft operations are projected to increase from 26.1% to 31.2%; and, military aircraft operations are forecast to decrease from 19.8% to 12.2%.

Table B15 **SUMMARY OF OPERATIONS FORECAST BY AIRCRAFT TYPE, 2006-2026**

Operations By Type	2006¹	2011	2016	2021	2026
<i>Commercial Service</i>	56,652	60,225	64,250	68,500	73,250
Regional Jet	32,118	34,100	36,300	37,500	40,000
Narrow Body Jet	24,534	26,125	27,950	31,000	33,250
<i>General Aviation</i>	26,375	28,840	31,530	34,470	37,680
Single Engine	8,862	9,720	10,690	11,720	12,810
Multi-Engine	5,354	5,710	5,990	6,310	6,590
Turboprop	2,849	3,170	3,560	3,930	4,320
Business Jet	8,941	9,810	10,810	12,000	13,380
Helicopter	369	430	470	520	570
<i>Air Cargo</i>	3,846	4,374	4,902	5,430	5,958
Single Engine	1,120	1,120	1,120	1,120	1,120
Twin Engine	20	20	20	20	20
Narrow Body Jet	2,706	3,234	3,762	4,290	4,818
<i>Military</i>	21,445	15,800	15,800	15,800	15,800
Turboprop	6,005	5,800	5,800	5,800	5,800
Jet	15,440	9,500	9,500	9,500	9,500
Helicopter	---	500	500	500	500
TOTAL	108,318	109,239	116,482	124,200	132,688

Source: BARNARD DUNKELBERG & COMPANY. ¹ Actual.



In the commercial service category of operations, the percentage of narrow body jets compared to regional jets will increase slightly. Regarding general aviation operations, it is forecast that the Airport will continue to experience a significant amount of business jet operations relative to other aircraft types. This is the result of a higher percentage of use for business-related purposes and a lower percentage of use for training and pleasure flying.

Local and Itinerant Operations Forecast

Forecasts of operations have also been categorized accordingly into local and itinerant operations. Will Rogers World Airport will certainly remain the principal commercial service airport for the majority of the State of Oklahoma. Therefore, itinerant operations will continue to be the dominant aircraft activity at the Airport. It is anticipated that the approximate 90% itinerant operations recorded at the Airport in 2006 are expected to increase slightly through the planning period to about 91%. Based on these assumptions, forecasts of local and itinerant operations are shown on the following table entitled *SUMMARY OF LOCAL AND ITINERANT OPERATIONS, 2006-2026*.

Table B16 **SUMMARY OF LOCAL AND ITINERANT OPERATIONS, 2006-2026**

Year	Local		Itinerant		Total
2006 ¹	10,930	10.1%	97,388	89.9%	108,318
2011	11,030	10.1%	98,209	89.9%	109,239
2016	11,650	10.0%	104,832	90.0%	116,482
2021	11,800	9.5%	111,500	90.5%	124,200
2026	11,940	9.0%	120,748	91.0%	132,688

Source: BARNARD DUNKELBERG & COMPANY. ¹ Actual.

Peak Period Forecast

An additional element in assessing airport use and determining various capacity and demand considerations is to ascertain peak period activities. According to Air Traffic Control (ATC) records, the peak month for aircraft activity in 2006 was October, with 10,567 operations. This translates to approximately 341 operations during an average day during the peak month, and roughly 34 peak hour operations. Based upon FAA statistics and assumptions from airports with similar activity and operational characteristics, peak period forecasts have been projected. The peak period operational activities are illustrated in the following table entitled *PEAK PERIOD AIRCRAFT OPERATIONS, 2006-2026*.



Table B17 PEAK PERIOD AIRCRAFT OPERATIONS, 2006-2026

Year	Annual	Peak Month	Average Day of Peak Month	Peak Hour/ Average Day Ratio	Peak Hour
2006 ¹	108,318	10,567	341	10.00%	34
2011	109,239	10,660	344	10.00%	34
2016	116,482	11,360	366	10.00%	37
2021	124,200	12,120	391	10.00%	39
2026	132,688	12,940	417	10.00%	42

Source: BARNARD DUNKELBERG & COMPANY, from methodology contained in FAA AC 150/5070-6A, *Airport Master Plans* and FAA AC 150/5060-5, *Airport Capacity and Delay*. ¹ Actual.

Based Aircraft Forecast

The number and type of aircraft anticipated to be based at an airport are vital components in developing the plan for the Airport. Depending on the potential market and forecast, the Airport will tailor the plan in response to anticipated demand. Generally, there is a relationship between general aviation activity and based aircraft, stated in terms of operations per based aircraft (OPBA). Sometimes a trend can be established from historical information of operations and based aircraft. The national trend has been changing with more aircraft being used for business purposes and less for pleasure flying. This impacts the OPBA in that business aircraft are usually flown more often than pleasure aircraft.

The OPBA trend at Will Rogers World Airport has fluctuated wildly, but has been in an overall decrease from 1,167 in 1997 to 613 in 2006, with the historical average being 937. It is expected that the OPBA at the Airport will increase slightly over the existing number, as more aircraft based there are used for business purposes.

The summary of based aircraft forecasts, as well as the selected general aviation aircraft operations forecast and the resultant OPBA, is presented in the following table entitled *BASED AIRCRAFT FORECAST SCENARIOS, 2006-2026*. Included in the table is the forecast presented in the FAA’s *Terminal Area Forecasts, Fiscal Years 2006-2025* of based aircraft at the Airport. As can be seen, the TAF forecast projects an average annual growth rate of 1.2% through 2025. The FAA expects the active general aviation fleet nationwide to increase at an average annual growth rate of 1.4%, as projected in the *Aerospace Forecasts, Fiscal Years 2007-2020*. Based aircraft are forecast to increase from 43 presently to 59 by 2026, an average annual growth rate of 1.6%.



Table B18 **BASED AIRCRAFT FORECAST SCENARIOS, 2006-2026**

Year	TAF	Based Aircraft	Selected General Aviation Operations Forecast	OPBA
2006 ¹	43	43	26,375	613
2007	44	44	26,850	613
2008	45	45	27,330	614
2009	45	45	27,830	615
2010	46	46	28,330	617
2011	46	47	28,840	620
2016	50	50	31,530	625
2021	53	55	34,470	630
2026	---	59	37,680	635

Sources: BARNARD DUNKELBERG & COMPANY. TAF – FAA Terminal Area Forecast, Fiscal Years 2006 – 2025. Average annual growth rate of 1.2% ¹ Actual. --- Indicates data unavailable or not necessary for forecasting effort of this Master Plan Update.

The mix of based aircraft for incremental periods is shown in the following table entitled *BASED AIRCRAFT FORECAST BY TYPE, 2006-2026*. Multi-engine turbine-powered aircraft (turboprop and business jet) are expected to increase as a percentage of the total based aircraft population at the Airport. This is actually analogous to overall national trends in general aviation and the FAA expectations and projections characteristic of the general aviation fleet. By the end of the planning period, single engine aircraft are expected to comprise roughly 10% of the total based aircraft fleet, multi-engine (including both piston-powered and turbine-powered) will account for about 42%, and approximately 48% are expected to be business jet aircraft based at Will Rogers World Airport.

Table B19 **BASED AIRCRAFT FORECAST BY TYPE, 2006-2026**

Aircraft Type	2006 ¹		2011		2016		2021		2026	
Single Engine	2	4.7%	3	6.4%	4	8.0%	5	9.1%	6	10.2%
Multi-Engine	21	48.8%	23	48.9%	23	46.0%	24	43.6%	25	42.4%
Business Jet	20	46.5%	21	44.7%	23	46.0%	26	47.3%	28	47.5%
TOTAL	43		47		50		55		59	

Source: BARNARD DUNKELBERG & COMPANY. ¹ Actual.



Summary

A summary of the aviation forecasts prepared for this study is presented in the following table entitled *SUMMARY OF AVIATION ACTIVITY FORECASTS, 2006-2026*. This information will be used in the following chapters to analyze the capacity of the Airport, develop facility requirements, and to determine future terminal area plans and projects. In other words, the aviation activity forecasts are the foundation from which future plans will be developed and implementation decisions will be made.

Table B20 **SUMMARY OF AVIATION ACTIVITY FORECASTS, 2006-2026**

Operations	2006¹	2011	2016	2021	2026
<i>Commercial Service</i>	56,652	60,225	64,250	68,500	73,250
Regional Jet	32,118	34,100	36,300	36,500	40,000
Narrow Body Jet	24,534	26,125	27,950	31,000	33,250
<i>General Aviation</i>	26,375	28,840	31,530	34,470	37,680
Single Engine	8,862	9,720	10,690	11,720	12,810
Multi-Engine	5,354	5,710	5,990	6,310	6,590
Turboprop	2,849	3,170	3,560	3,930	4,320
Business Jet	8,941	9,810	10,810	12,000	13,380
Helicopter	369	430	470	520	570
<i>Air Cargo</i>	3,846	4,374	4,902	5,430	5,958
Single Engine	1,120	1,120	1,120	1,120	1,120
Twin Engine	20	20	20	20	20
Narrow Body Jet	2,706	3,234	3,762	4,290	4,818
<i>Military</i>	21,445	15,800	15,800	15,800	15,800
Turboprop	6,005	5,800	5,800	5,800	5,800
Jet	15,440	9,500	9,500	9,500	9,500
Helicopter	---	500	500	500	500
TOTAL OPERATIONS	108,318	109,239	116,482	124,200	132,688
Local Operations	10,930	11,030	11,650	11,800	11,940
Itinerant Operations	97,388	98,209	104,832	112,400	120,748
Passenger Enplanements	1,809,354	1,997,700	2,205,600	2,435,200	2,688,600
Based Aircraft By Type					
Single Engine	2	3	4	5	6
Multi-Engine	21	23	23	24	25
Business Jet	20	21	23	26	28
TOTAL	43	47	50	55	59

Source: BARNARD DUNKELBERG & COMPANY. ¹ Actual.

