B. Forecasts of Aviation Activity

INTRODUCTION

Aviation activity forecasts evaluate future demand at an airport. The development of accurate and defensible forecasts is a key element in the Master Plan Study process. Forecasts inform the determination of future airport requirements, analysis of alternative development plans, assessment of the possible environmental effects of proposed plans, and the determination of the economic implications of future growth and development. While forecasting, by nature, is not an exact science, it does establish general estimates for future aviation activity levels and provides a defined rationale for necessary airport facility changes as demands increase.

Principally, local airport factors, aviation industry trends, and overarching regional socioeconomic market conditions influence aviation activity forecasts. They are developed to meet five main objectives:

- Provide a realistic and sustainable estimate.
- Be based on the latest available data.
- Reflect current conditions at the Airport.
- Be supported by information in the Master Plan Study.
- Provide adequate justification for future airport development.

The forecasts have a base year of 2020 and use the Federal Aviation Administration (FAA) Fiscal Year (FY) from October to September. The forecast period is 20 years from the base year with reporting intervals of every five years. In keeping with the industry standards, data from the past 10 years is used as the basis for historical trends. Using the previous 10 years helps the forecasts account for various economic conditions and provides a perspective of the effects of economic change on aviation activity. This Master Plan places an additional focus on economic and aviation activity since 2020 because of the COVID-19 pandemic impacts.

Data Sources

A variety of data sources were used in this chapter, as listed in **Table B-1**. However, most of the aviation activity occurring at Stillwater Regional Airport (SWO or the Airport) is derived from the FAA 2020 Terminal Area Forecast (TAF). The TAF is the official FAA forecast that is prepared annually by FAA Headquarters for each airport in the FAA National Plan of Integrated Airport Systems (NPIAS). TAF data comes from the U.S. Department of Transportation (USDOT) T-100 database, Airport Traffic Control Tower (ATCT) records, and FAA Form 5010, which airports submit annually to the FAA.

The TAF is generally reliable. However, its most recent data may lag a year behind other available records, and values for 2020 onward feature updates with data available from other databases and records. Therefore, 2021 year-to-date (at the time of forecast preparation, June 2021 was the most recent data available) and the most recent 12-months of data (when available) are presented.

Table B-1: Data Sources

Source	Description
FAA Terminal Area Forecasts (TAF)	The FAA TAF provides historical records and forecasts for passenger enplanements, aircraft operations and based aircraft. It does not forecast operations by aircraft type, peak activity level, critical aircraft, or air cargo. These forecasts serve as a comparison for forecasts prepared as part of this planning effort and provide historical information on aircraft activity. The 2020 TAF used in this forecast was released in May 2021.
FAA Traffic Flow Management System Counts (TFMSC)	TFMSC includes data collected from flight plans. These operations are categorized by aircraft type and used to identify trends in the SWO fleet mix. The advantage of the TFMSC data is its degree of detail and its insights into the itinerant users of SWO. A disadvantage of TFMSC data is that it does not include local operations or operations that did not file a flight plan. As such, the utility of TFMSC data is limited to larger aircraft, including scheduled commercial passenger, air cargo, charter operations, and private business jets.
FAA Aerospace Forecasts	The Aerospace Forecast 2021-2041 is a national-level forecast of aviation activity. The Aerospace Forecast helps guide local forecasts by serving as a point of comparison between local trends and national trends.
U.S. Department of Transportation (USDOT) T-100 Database	Scheduled, charter passenger, and air cargo airlines fill out the T-100 form monthly. The T-100 database is an online repository of the data recorded on the forms, such as number of seats sold, number of seats available, freight transported, aircraft used, and departures performed. The T-100 provides a detailed look at the operations of passenger and cargo airlines.
Woods & Poole Inc.	Socioeconomic data is provided by data vendor Woods & Poole Inc. (W&P), which is a data vendor providing socioeconomic data for gap years in the U.S. Census. The W&P dataset considers the Stillwater Metropolitan Statistical Area (MSA) equivalent to the boundary of Payne County. The dataset provides 124 data categories with records from 1970 to 2020 and forecast through 2050. Data categories considered include population, employment, earnings and income, and Gross Regional Product (GRP).
Operations Network (OPSNET)	OPSNET is the source of National Airspace System (NAS) air traffic operations and delay data. Provided information for monthly aircraft operations for 2020 and 2021, as well as Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) operations.
Stakeholder Interviews/Data Gathering	The Consultant conducted interviews with stakeholders during site visits and made contact via phone and email with others. Interviews included the Air Traffic Control Tower (ATCT), Transportation Security Administration (TSA), Aircraft Rescue and Fire Fighting (ARFF), Fixed Based Operator (FBO), the City of Stillwater, the Oklahoma State University (OSU) Flight Center, Envoy Airlines, and Martinaire Aviation LLC (SWO's air cargo operator).

One of the primary drivers in the difference between the TAF and other records of data available is the operations that occur when the ATCT is closed. The SWO ATCT is open from 8:00 a.m. to 10:00 p.m., and it records aircraft operations that occur during this time. Operations occurring outside these hours are not reported. Therefore, TAF data is supplemented with data from the airport or tenants, TFMSC, or USDOT 1-100 when determined to be accurate. This data may include sources such as air carrier aircraft operations occurring when the ATCT is closed.

The FAA reviews airport master plan forecasts by comparing them to the TAF. Forecasts within 10 percent of the TAF over the first five-year period and within 15 percent within the 10-year period can be approved by the Airports District Offices. Forecasts outside these tolerances go to FAA Headquarters for review. Therefore, every preferred forecast component that has a corresponding TAF category is compared to the TAF for consistency.

EXISTING CONDITIONS AND ASSUMPTIONS

The level and type of aviation activity is dependent upon many factors, but it is generally reflective of:

- Local and national airline activity trends.
- Airport services available to the aviation community.
- Specific activity and businesses located on the airport or within the community the airport serves.
- General socioeconomic conditions prevalent within the surrounding area.

Regional Profile

Several regional underlying conditions were evaluated to develop a series of assumptions serving as a foundation for these forecasts. They represent a variety of locational, operational, and socioeconomic considerations that may affect aviation activity at SWO to varying degrees.

Regional Socioeconomic Conditions

Socioeconomic data generally correlates with aviation activity within the same geographic region. Population, employment, income, and gross domestic product (GDP) are indicators that typically influence aviation activity. Population is an indication of the general number of persons served by an airport, and therefore influences the potential customer base. Employment levels gauge economic activity and vitality. Income statistics reflect the degree to which an airport's customer base has sufficient disposable income to spend on aviation activities such as airline ticket purchases, pilot training, aircraft ownership, and aircraft charter or rental. GDP is the value of goods and services produced in an area and serves as an index for the health of the overall economy.

Despite significant short-term impacts, Woods & Poole determined that COVID-19 did not appear to have made a quantifiable long-term economic impact affecting the forecasts.

(Woods & Poole, Inc., *2020 Regional Projections and Database*)

The economic and demographic forecasting firm Woods & Poole, Inc, is used for most of the socioeconomic historical data and all the future projections in this Master Plan. When the data and projections were published in mid-2020 (using data through 2018), the effects on COVID-19 on the U.S. economy were being experienced. Sharp and significant declines in monthly retail sales, GDP, and employment were already evident through the first four months of the year. Woods & Poole analyzed the preliminary monthly data to determine what, if any conclusions about 2020 annual totals could be made and included in their models. The inclusion of a revised 2020 estimate of historical data that incorporated the COVID-19 impacts was decided against because the data were unclear about what the estimate should be and because the long-term impact of an estimate could not be made reliably. No doubt, many of the COVID-19 related economic impacts have been mitigated by the various federal government actions such as the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020, the Coronavirus Response and Consolidated Appropriations Act of 2021, and the American Rescue Plan (ARP) of 2021.

Population

According to Woods & Poole data, the Stillwater MSA population has seen a steady but slight increase since 2010. This compares favorably to both the state and national growth rates. Future growth expectations for both the city and state are slightly less than national rates. **Table B-2** details the population data over the past 10 years, contains projected conditions 20 years into the future, and shows the respective associated Compound Annual Growth Rates (CAGR).

Table B-2: Population Data, 2010-2040

Year	Stillwater	Oklahoma	United States
Historical			
2010	78,223	3,759,632	309,326,026
2015	81,324	3,909,831	320,745,038
2020	83,095	3,989,697	331,472,851
CAGR	**0.7%**	**0.6%**	**0.7%**
Projected			
2025	85,698	4,105,730	342,330,653
2030	88,147	4,217,120	353,002,641
2035	90,370	4,321,153	363,262,483
2040	92,313	4,415,738	372,934,650
CAGR	**0.5%**	**0.5%**	**0.6%**

Source: Woods & Poole, Inc., 2020.

Employment

Historical employment growth within Stillwater has lagged both the state and national growth rates. However, the unemployment rate within Stillwater has been lower than the historical state and national averages.

Evaluating the unemployment rates for Stillwater, Oklahoma, and the United States by quarter through 2020 and the first half of 2021, both Stillwater and Oklahoma have clearly returned to near pre-pandemic levels. The national unemployment rate, while declining, has not yet reached its pre-pandemic level.

Woods & Poole employment projections throughout the 20-year future period indicate a smaller growth rate for Stillwater than the state and nation. **Table B-3** details the historical and projected employment data for the City of Stillwater, the state, and nation.

Table B-3: Employment Data, 2010-2040

Year	Stillwater		Oklahoma		United States	
	Employment[1]	Unemployment Rate[2]	Employment[1]	Unemployment Rate[2]	Employment[1]	Unemployment Rate[2]
Historical						
2010	46,674	5.1	2,130,129	6.5	172,901,690	9.6
2015	49,123	3.3	2,286,959	4.3	190,315,792	5.3
2020	51,304	4.8	2,413,383	6.1	206,901,316	8.1
CAGR	**1.0%**	**N/A**	**1.3%**	**N/A**	**1.8%**	**N/A**
2020-2021 by Quarter[2]						
1Q 2020	---	2.5	---	3.3	---	4.1
2Q 2020	---	9.3	---	10.3	---	12.9
3Q 2020	---	4.6	---	6.3	---	8.9
4Q 2020	---	3.1	---	4.7	---	6.5
1Q 2021	---	3.4	---	4.8	---	6.5
2Q 2021	---	2.8	---	3.6	---	5.8
Projected						
2025	53,752	---	2,541,470	---	221,248,604	---
2030	55,994	---	2,661,667	---	234,749,589	---
2035	58,100	---	2,776,376	---	247,922,569	---
2040	60,105	---	2,886,756	---	260,952,286	---
CAGR	**0.8%**	**N/A**	**0.9%**	**N/A**	**1.2%**	**N/A**

Sources: [1] Woods & Poole, Inc., 2020.
[2] Bureau of Labor Statistics, 2021.

Notes: --- Data not available.

With over 6,000 employees, Oklahoma State University (OSU) is Stillwater's largest employer. Because of its public education function, OSU is not as affected by variations of the local, state, or national economies as private entities, and is therefore less prone to large employment swings. OSU's employment is expected to remain steady and will continue to be Stillwater's largest employer throughout the planning period.

Other top employers within Stillwater and Payne County include:

- **Stillwater Medical Center** (over 1,000 employees)
- **Stillwater Public Schools** (over 750 employees)
- **City of Stillwater** (over 550 employees)
- **Stillwater Design/Kicker** (over 175 employees)
- **ASCO Aerospace** USA (over 150 employees)
- **National Standard** (over 150 employees)
- **OnCue** (over 150 employees)
- **Meridian Technology Center** (over 125 employees)
- **Frontier Electronic Systems** (over 100 employees)
- **Stan Clark Companies** (over 100 employees)
- **Armstrong World Industries** (over 100 employees).

Income

Personal per capita income growth within Stillwater has also historically lagged both the state and national growth rates. Using quarterly state and national data from the Bureau of Economic Analysis, the COVID-19

pandemic clearly has had a negative effect on income levels in the third and fourth quarters of 2020. However, income levels have rebounded to pre-pandemic levels by the first quarter of 2021.

Woods & Poole projections continue the trend that income growth within Stillwater will be behind the state and national rates, although the City's per capita income rate is expected to make up ground in both the state and national growth rates during the 20-year future period. **Table B-4** details the historical and projected employment data for the city, state, and nation.

Table B-4: Per Capita Personal Income Data, 2010-2040

Year	Stillwater	Oklahoma	United States
Historical[1]			
2010	$30,912	$36,544	$40,546
2015	$35,455	$44,245	$48,977
2020	$39,646	$48,752	$57,668
CAGR	**2.5%**	**2.9%**	**3.6%**
2020-2021 by Quarter[2]			
1Q 2020	---	$47,644	$57,523
2Q 2020	---	$52,502	$62,060
3Q 2020	---	$48,683	$60,184
4Q 2020	---	$48,293	$59,532
1Q 2021	---	$55,504	$66,889
Projected[1]			
2025	$48,247	$59,531	$71,114
2030	$60,293	$74,663	$89,940
2035	$75,952	$94,387	$114,601
2040	$95,749	$119,390	$146,088
CAGR	**4.5%**	**4.6%**	**4.8%**

Source: [1] Woods & Poole, Inc., 2020.
[2] Bureau of Economic Analysis, 2021.

Notes: --- Data not available.

Gross Domestic Product

Historical GDP for Stillwater has consistently increased but has not equaled both state and national growth rates. Quarterly data from the Bureau of Economic Analysis indicates the GDP for both the state and nation declined in the second quarter of 2020 but has regained and exceeded those levels by the first quarter of 2021.

Woods & Poole projects the City's GDP growth rate will still be below state and national rates but will increase at a slightly greater rate than the historical growth rate. Meanwhile, expectations for the state and nation are a decrease in the future growth rate compared to the historical rates. **Table B-5** lists the historical and projected GDP breakdown of the city, state, and nation.

Table B-5: GDP Data (In Millions), 2010-2040

Year	Stillwater	Oklahoma	United States
Historical[1]			
2010	$2,987	$159,774	$155,562,809
2015	$3,173	$180,442	$175,776,505
2020	$3,250	$194,054	$198,107,361
CAGR	**0.8%**	**2.0%**	**2.4%**
2020-2021 by Quarter[2]			
1Q 2020	---	$195,606	$215,611,390
2Q 2020	---	$173,061	$195,201,140
3Q 2020	---	$186,883	$211,702,520
4Q 2020	---	$190,776	$214,947,310
1Q 2021	---	$198,008	$220,615,030
Projected[1]			
2025	$3,444	$209,939	$220,128,092
2030	$3,618	$225,596	$242,580,423
2035	$3,782	$241,402	$265,938,763
2040	$3,938	$257,486	$290,419,913
CAGR	**1.0%**	**1.4%**	**1.9%**

Sources: [1] Woods & Poole, Inc., 2020.
[2] Bureau of Economic Analysis, 2021.

Notes: --- Data not available.

Community/Airport Location and Potential

Stillwater is centrally located between two large metropolitan areas: Tulsa 65 miles to the east and Oklahoma City 60 miles to the south. North-central Oklahoma provides a strong and definable market area for all forms of aviation activity.

SWO is less than 3 miles northwest of downtown Stillwater. With over 1,400 acres of undeveloped property and development potential remaining high, SWO is poised to attract additional aviation and non-aviation development in the future. SWO's largest tenant, the OSU Flight Center, provides flight instruction, on-site classroom instruction, simulator technology, and aircraft maintenance for its current aircraft fleet. There are approximately 300 students enrolled in the six undergraduate and graduate degree programs.

Community Support

SWO benefits from an exceptional relationship with and support from the City of Stillwater, as well as OSU, local industry, and surrounding citizens. SWO is recognized as a vital asset that contributes to the stability and future of the city and region's economy. The overall position of the populace is one of continued growth and development, with special focus on the incentive of a commercial service airport continuing to attract additional economic and industrial development to the area.

Air Carrier Service Profiles

Envoy Airlines, one of nine regional air carriers operating as American Eagle under a codeshare agreement with American Airlines, initiated service in 2016 and is the only commercial air carrier currently serving SWO.

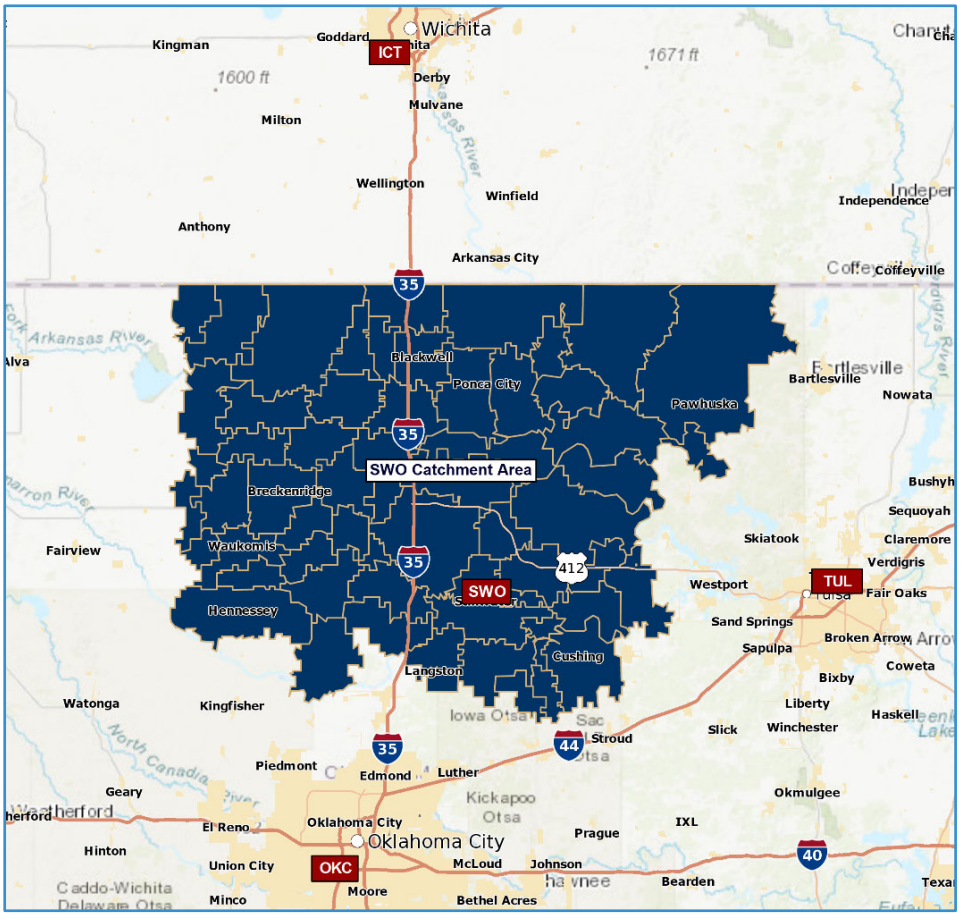
The carrier currently provides two daily flights between SWO and Dallas-Fort Worth International Airport (DFW). Up to mid-2021, the flights used both the 50-seat Embraer ERJ-145 and the 44-seat Embraer ERJ-140 aircraft. As of mid-2021, Envoy Airlines has discontinued use of the ERJ-140.

Martinaire Aviation, LLC is a FAR Part 135 air cargo carrier based in Dallas, Texas, that has served SWO since 2009. They currently provide an approximate weekly schedule to SWO through Cessna C208 Caravan aircraft. Other air cargo at SWO is transported in the belly compartments of Envoy Air commercial service aircraft or via non-scheduled chartered air cargo aircraft.

Catchment Area/True Market

An airport catchment area is the surrounding geographic area containing the population of passengers who should reasonably be expected to use the airport considering drive times to competing airports. It is also representative of the local market and most travelers using or expected to use the airport. The area is presented in the Passenger Demand Analysis prepared separately (see **Appendix Two**) and portrayed in **Figure B-1**. SWO's catchment area comprises 60 zip codes and has a 2020 population of 250,782.

Figure B-1: SWO's Catchment Area



An airport's true market estimate is based on data from the airline's reporting origin and destination statistics to the U.S. DOT and by ticket data from Airline Reporting Corporation (ARC). ARC data includes tickets sold through travel agencies as well as via online travel agencies by passengers using SWO within the catchment area. It does not include tickets issued directly by airline websites or reservation offices. As presented in the Passenger Demand Analysis, SWO's 2020 true market is estimated at 351,291 origin and destination passengers. This is mostly representative of domestic passengers (318,455 or 91 percent), with the remainder being international passengers (32,836 or 9 percent).

Airfares

According to the Passenger Demand Analysis, SWO's 2020 overall average domestic airfare was 209 dollars. This is 25 dollars higher than average domestic airfares at Oklahoma City's Will Rogers' World Airport (OKC), 23 dollars higher than Tulsa International Airport (TUL), and 19 dollars higher than Dallas Fort Worth International Airport (DFW). From 2017 through 2020, overall airfares increased at a lower CAGR at SWO compared to DFW, but were higher than OKC, TUL, and Wichita Dwight D. Eisenhower National Airport (ICT).

New Air Service Opportunities

While SWO is one of the few airports in the country that had no commercial air service since airline deregulation and was able to successfully recruit traditional legacy service, it is unlikely to add service to a new hub either through American Airlines or a different air carrier. According to the Passenger Demand Analysis, the benchmarks indicating the need to consider additional service are improvement in passenger numbers on existing flights (i.e., higher boarding load factors) and consistent revenue per available seat mile that is on par or above peer markets. Long-term, service to Chicago O'Hare International Airport (ORD) on American Airlines or new service via United Airlines to Denver International Airport (DEN) would be the most likely candidates.

Potential Challenges

Few negative factors have the potential to significantly impact future aviation activity at SWO. However, as part of the planning process, considering broad factors that could have a negative or neutralizing effect is important.

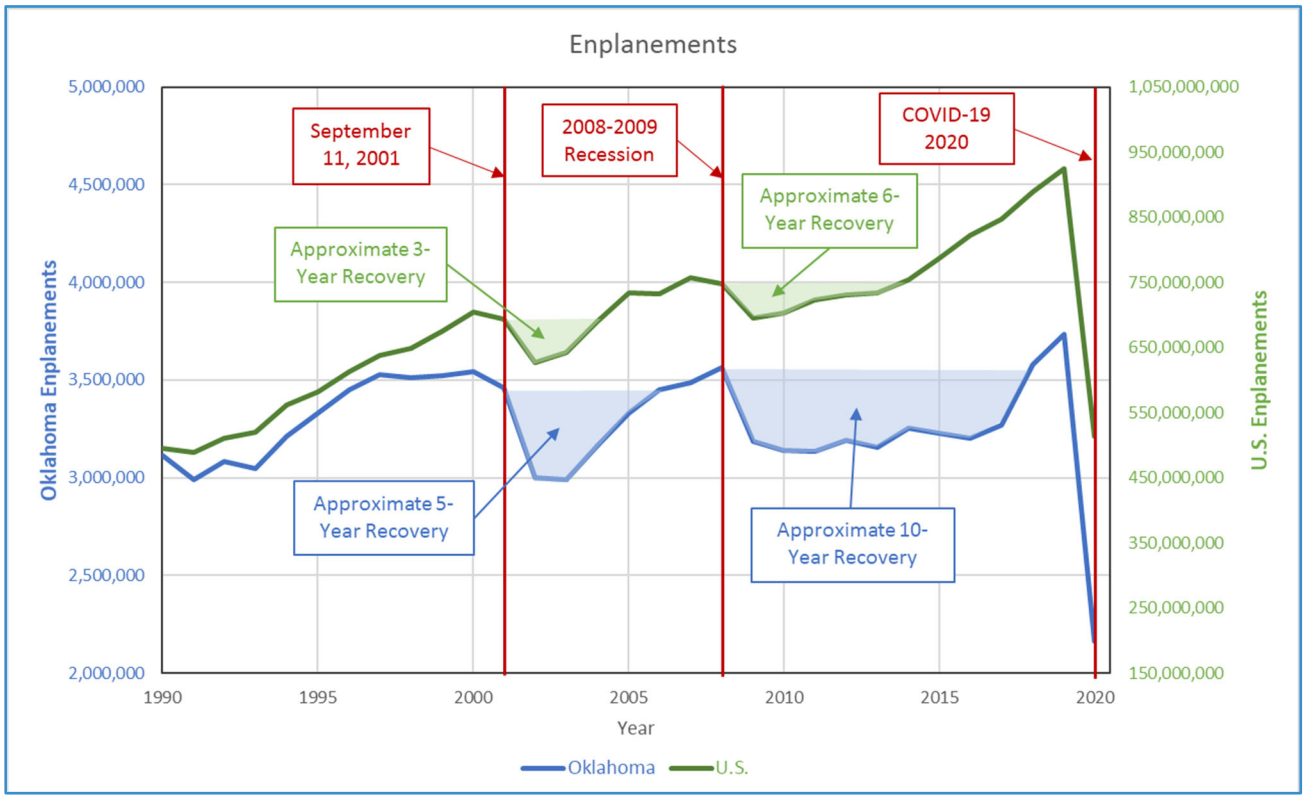
COVID-19

The effects of the COVID-19 pandemic and the emergence of the COVID-19 Delta variant in the summer of 2021 are lingering concerns. Beginning in March 2020 and continuing through the fall/winter of that year, the pandemic and resulting lockdowns had serious negative effects on worldwide economies, and in particular, the aviation industry. Airline travel was severely affected, causing air carriers to reduce flights, cut back services, and ground aircraft, thus reducing system-wide capacity. Service to SWO was reduced from three daily flights in the summer of 2019 to one daily flight in the spring of 2020. By summer 2020 the second flight had been reinstated but service was once again reduced to one daily flight in late summer. However, in mid-summer 2021, the second daily flight was reinstated.

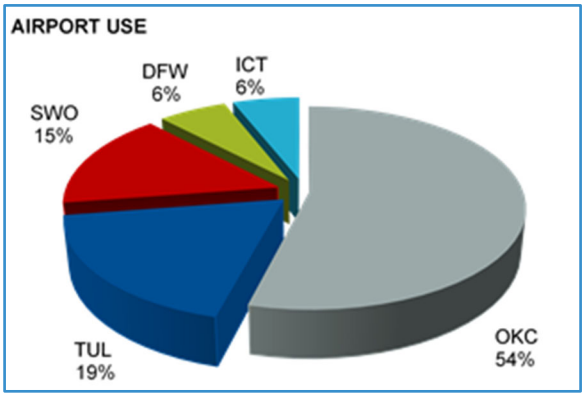
The length of time required for enplanements to recover from the COVID-19 pandemic might be gleaned by examining recovery times from recent past global economic crises. **Figure B-2** illustrates the historical TAF data for statewide and nationwide enplanements since 1990, with a focus on enplanements recovery after the September 11, 2001, terrorist attacks and the 2008-2009 recession. Both events took a toll on passenger enplanements, but the impact of the COVID-19 pandemic is even more severe than those two events.

Nationwide enplanements decreased a total of 9.4 percent from FY 2001 to 2002, 7.0 percent from FY 2008 to 2009, and 44.4 percent from FY 2019 to 2020. Statewide enplanements decreased 13.4 percent from FY 2001 to 2002, 10.5 percent from FY 2008 to 2009, and 42.1 percent from FY 2019 to 2020. Since SWO did not have scheduled passenger service until mid-2016, historical passenger enplanement data is not relevant. However, SWO passenger enplanements decreased 20.9 percent from FY 2019 to 2020. The data indicates that an average of four years were required for nationwide passenger enplanements to recover after each event. Statewide numbers show longer recovery times, where an average of seven years was required for passenger enplanements to recover to pre-event levels. This indicates the post-COVID pandemic passenger level recovery may be prolonged since the reduction was much more drastic in terms of total passenger enplanement decreases.

Figure B-2: State and National Enplanements, 1990-2020



Proximity to Other Commercial Service Airports



Stillwater's proximity and relative ease of vehicle access to both OKC and TUL make it challenging to retain commercial service passengers and expand air service. In addition to using OKC or TUL rather than SWO, local airport users were shown to travel out of state to DFW in Texas and ICT in Kansas. According to the Passenger Demand Analysis, of the total SWO true market, only 15 percent of the domestic passengers and 14 percent of the international passengers used SWO. OKC captured the most domestic and international passengers of SWO's true market, with 55 percent and 47 percent, respectively. TUL captured 19 percent and 14 percent of domestic and international passengers, respectively, of SWO's true market.

Because of the presence of low-cost carriers such as Allegiant and Frontier at the competing airports, it is thought that many residents within SWO's catchment area will continue to choose the approximate one-hour drive to either OKC or TUL.

State of General Aviation

Other potential challenges could include the relatively slow growth in general aviation (GA) activity nationally for the past 20 years. New general aviation aircraft deliveries and active general aviation aircraft have declined. According to the General Aviation Manufacturer Association (GAMA) Annual Report 2020, worldwide shipments of all GA aircraft declined by more than 23 percent since 2000. Fewer planes being produced would suggest less demand for planes, which indicates fewer planes used worldwide. This is confirmed by data published in the FAA's Aerospace Forecasts 2021-2041, which reports active GA aircraft in the United States declined by over 8 percent from 2010 to 2020, resulting in a CAGR of -0.9 percent. The FAA Aerospace Forecasts also reported that GA aircraft operations at towered airports declined by over 6 percent from 2010 to 2020, a CAGR of -0.6 percent.

HISTORICAL AND EXISTING AVIATION ACTIVITY PROFILE

Aviation activity forecasting commences by using the present time as a starting point, supplemented with historical data obtained from various sources. Normal activity profiles use data from the previous 10 years (i.e., 2010 to 2020) for historical trends in an attempt to explain the changes that have occurred. This Master Plan includes an analysis from the 10-year period of 2009 to 2019 to draw conclusions prior to the COVID-19 pandemic for projecting what a long-term recovery might look like. The Master Plan also, where records are available, includes SWO's activity for FY 2021 Year-to-Date (i.e., October 2020 through June 2021) and for the previous 12 months (i.e., July 2020 through June 2021) for the most recent data to evaluate how SWO is

currently recovering since the full effects of the COVID-19 pandemic began in March 2020. The historical profile serves as a baseline for the forecasts and includes information on passengers, air carrier, air cargo, GA, and military aviation activity.

The SWO ATCT records flights from 8:00 a.m. to 10:00 p.m. Operations that occur outside of these hours are not included in records submitted to the FAA. Commercial airline operations are reported to the DOT and capture operations occurring outside of ATCT operating hours. USDOT does not record GA operations.

Commercial Service

Commercial service encompasses scheduled passenger flights, cargo flights, and non-scheduled charter flights. The following sections describe the passenger enplanements, commercial operations, and air cargo service at SWO.

Passenger Enplanements and Airline Operations

The FAA TAF defines a passenger enplanement as a passenger who boards a scheduled commercial or chartered aircraft with more than nine seats for turboprops (or any number of seats for jet aircraft). The aircraft must be operating under Title 14 Code of Federal Regulations (CFR) Part 121 that applies to air carriers and commercial operators. Passenger enplanements include revenue and non-revenue passengers who paid taxes and passenger facility charges (PFC) for their carriage. Passenger enplanements do not include pilots, flight attendants, and any other members of the airline crew.

Passenger enplanements are categorized as air carrier or air taxi/s based on the type of carrier that is operating the route. For example, passengers on an American Airlines B 737 would be categorized as air carrier enplanements, whereas passengers on an American Eagle ERJ 145 would be categorized as air taxi enplanements. Airline operations are categorized based on aircraft seating capacity. Aircraft operating with more than 60 seats are classified as air carrier; aircraft with 60 or fewer seats are classified as air taxi.

TAF Airline Classification System

Classification	Air Carrier	Air Taxi
Enplanements	Operated by a mainline carrier	Operated by a regional carrier
Operations	More than 60 seats	60 or fewer seats

Enplanements for 2009 to 2021 are shown in **Table B-6**. The air carrier enplanements are primarily the result of university athletic teams using chartered mainline air carrier flights into and out of SWO. SWO air carrier enplanements have fluctuated but remained somewhat steady throughout the years (averaging 1,665) with an overall decrease, resulting in a CAGR of -3.4 percent between 2009 to 2019 (10-year pre-pandemic analysis), and by a decrease of 2.7 percent decrease from 2010 to 2020 (10-year analysis to include the pandemic).

Since scheduled commercial service is provided by Envoy Airlines (i.e., a regional carrier), the airline enplanements are classified as air taxi/commuter. With the resumption of scheduled passenger air service in mid-2016, the air taxi/commuter enplanements analysis is limited to the changes experienced since 2017, the first full year of service. Air taxi/commuter enplanements increased at a CAGR of 3.2 percent between 2017

and 2019 prior to the COVID-19 pandemic. While only a two-year dataset, this is reflective of healthy growth. With the sharp enplanement declines experienced in 2020, the three-year CAGR was a decrease of 14.6 percent.

Table B-6: Passenger Enplanements, 2009-2021

Fiscal Year	Air Carrier	Air Taxi/Commuter	Total	Percent Change
2009[1]	2,028	214	2,242	N/A
2010[1]	1,718	288	2,006	-10.5%
2011[1]	1,304	141	1,445	-28.0%
2012[1]	2,115	79	2,194	51.8%
2013[1]	1,888	0	1,888	-13.9%
2014[1]	1,588	32	1,620	-14.2%
2015[1]	1,642	0	1,642	1.4%
2016[1]	1,386	2,131	3,517	114.2%
2017[1]	1,929	25,825	27,754	689.1%
2018[1]	1,629	24,689	26,318	-5.2%
2019[1]	1,441	27,523	28,964	10.1%
CAGR	**-3.4% (2009-2019)**	**3.2% (2017-2019)**	**2.2% (2017-2019)**	**N/A**
2020[1]	1,308	16,102	17,410	-39.9%
CAGR	**-2.7% (2010-2020)**	**-14.6% (2017-2020)**	**-14.4% (2017-2020)**	**N/A**
2021 (YTD)	887[2]	10,951[3]	11,838	-32.0%
2021 (Previous 12 Months)	1,066[2]	13,683[3]	14,749	-15.3%
CAGR (2017-2021)	**-13.8**	**-14.7%**	**-15.4%**	**N/A**

Sources: [1] FAA TAF, 2021.
[2] SWO staff.
[3] Envoy Airlines SWO station manager and SWO staff (includes revenue and non-revenue passengers, plus 538 athletic sports team passengers boarding chartered air aircraft with 60 seats or less).

Notes: YTD=Year-to-Date (October 2020 through June 2021). Previous 12 Months=July 2020 through June 2021.

The year-to-date (i.e., October 2020 through June 2021) and previous 12-month total (i.e., July 2020 through June 2021) analysis indicates that enplanements are behind 2020 levels. However, this is to be expected as FY 2020 enplanements included five months of non-pandemic enplanements that were on pace to exceed FY 2019 enplanements before the full effects of COVID-19 pandemic were felt. Additionally, from May 2019 through February 2020, SWO did not experience a decrease in monthly enplanements from the previous year, averaging a monthly increase of 10.9 percent from the previous year. Finally, during the fall and winter of 2020-2021, the OSU administration imposed seating restrictions on its athletic events reducing most athletic facilities to 25 percent of maximum capacity. These restricted seating events, especially during the fall football season, had an additional negative impact on passenger enplanements as some ticket holders who would normally have flown commercially were unable or chose not to attend the athletic events. These seating restrictions have since been lifted and are not expected to be reimposed.

The TAF also divides commercial service operations (an operation is defined as either a takeoff or a landing) into two categories: air carrier and air taxi/commuter. Air carrier operations are defined as activity by aircraft of more than 60 seats and air cargo aircraft with more than 18,000 pounds of payload capacity. Air taxi/commuter activity is defined as aircraft with 60 seats or fewer that transport regional passengers on

scheduled commercial flights, non-scheduled or for-hire flights, and air cargo flights with 18,000 pounds or less payload. The air taxi category includes all air cargo and non-airline operations that involve direct on-demand transactions rather than a regularly scheduled flight. Air carrier operations include all scheduled operations with a commercial component regardless of number of seats, such as operations through Envoy Airlines Embraer ERJ 140 and 145, which are 44- and 50-seat aircraft, respectively. As shown in **Table B-7**, air carrier commercial service aircraft operations have decreased during the historical timeframe with the exception being 2017, when ATCT personnel mistakenly recorded a portion of Envoy Airlines' 50-seat aircraft as air carrier operations instead of commuter. Historical air taxi/commuter commercial service aircraft operations have remained relatively stable with an overall increase. The increases experienced since 2017 are the result of the successful reinstated daily service of Envoy Airlines.

Table B-7: Commercial Service Operations, 2009-2021

Fiscal Year	Air Carrier	Air Taxi/ Commuter	Total	Percent Change
2009[1]	61	1,120	1,190	N/A
2010[1]	80	965	1,045	-12.2%
2011[1]	51	1,284	1,335	27.8%
2012[1]	73	1,167	1,240	-7.1%
2013[1]	69	717	786	-36.6%
2014[1]	57	1,075	1,132	44.0%
2015[1]	41	859	900	-20.5%
2016[1]	85	646	731	-18.8%
2017[1]	362	1,635	1,997	173.2%
2018[1]	38	2,664	2,702	35.3%
2019[1]	32	2,485	2,517	-6.8%
CAGR (2009-2019)	**-6.2%**	**8.3%**	**7.8%**	**N/A**
2020[1]	30	1,890	1,920	-23.7%
CAGR (2010-2020)	**-9.3%**	**7.0%**	**6.3%**	**N/A**
2021 (YTD)[2]	22	1,472	1,494	-22.2%
2021 (Previous 12 Months)[2]	22	1,951	1,973	2.8%
CAGR (2011-2021)	**-8.1%**	**4.3%**	**4.0%**	**N/A**

Sources: [1] FAA TAF, 2021.
[2] FAA The Operations Network (OPSNET), 2021.

Notes: YTD=Year to Date (October 2020 through June 2021). Previous 12 Months=July 2020 through June 2021.

Air Cargo

As stated previously, air cargo transported at SWO is provided primarily by Martinaire Aviation, LLC with approximately one flight per week using Cessna Caravan 208 aircraft. Additional air cargo is either shipped in the belly compartments of air carrier aircraft or transported by non-scheduled charter air cargo aircraft. **Table B-8** shows the air cargo transported exclusively by Martinaire Aviation at SWO over the past approximate two and one-half years (this is the only data available). The short trend expressed by this data suggests a stable amount of annual cargo transported with ample payload capacity available in the existing aircraft operations.

Using data provided by the USDOT T-100 database, the information presented in **Table B-9** indicates air cargo volume transported in the belly compartments of air carrier aircraft or non-scheduled charter air cargo

aircraft at SWO had increased through 2020, with the 10-year CAGRs of 24.1 percent from 2009 to 2019, and 41.0 percent from 2010 to 2020. It was only during the more recent 10-year period from 2011 to 2021 that a decreasing CAGR was experienced at -7.8 percent.

Table B-8: Martinaire Aviation Air Cargo Volumes, 2019-2021

Calendar Year	Cargo Out	Cargo In	Total Cargo	Percent Change	Operations	Payload	Percent of Payload
2019	17,399	34,737	52,136	N/A	96	336,000	15.5%
2020	12,230	24,827	37,057	-28.9%	92	322,000	11.5%
2021 (YTD)	7,472	17,568	25,040	-32.4%	56	196,000	12.8%
CAGR (2019-2020)	**-29.7%**	**-28.5%**	**-28.9%**	**N/A**	**-4.2%**	**-4.2%**	**N/A**
2021 (Previous 12 Months)	11,915	27,917	39,832	7.5%	96	336,000	11.9%
CAGR (2019-2021)	**-17.2%**	**-10.4%**	**-12.6%**	**N/A**	**0.0%**	**0.0%**	**N/A**

Source: Martinaire Aviation LLC, August 2021.

Notes: YTD=Year to Date (January through July 2021). Previous 12 Months=August 2020 through July 2021.

Table B-9: Air Cargo Volumes, 2009-2021

Calendar Year	Cargo Out	Cargo In	Total Cargo	Percent Change
2009	2,713	4,660	7,373	N/A
2010	875	616	1,491	-79.8%
2011	32,131	21,275	53,406	3481.9%
2012	18,315	22,570	40,885	-23.4%
2013	6,124	9,142	15,266	-62.7%
2014	16,660	9,710	26,370	72.7%
2015	33,037	19,740	52,777	100.1%
2016	32,333	27,198	59,531	12.8%
2017	37,959	29,556	67,515	13.4%
2018	32,785	16,619	49,404	-26.8%
2019	33,427	30,390	63,817	29.2%
CAGR (2009-2019)	**28.5%**	**20.6%**	**24.1%**	**N/A**
2020[1]	38,593	7,797	46,390	-27.3%
CAGR (2010-2020)	**46.0%**	**28.9%**	**41.0%**	**N/A**
2021 (YTD)	251	303	554	-98.8%
2021 (Previous 12 Months)	16,345	7,898	24,243	-47.7%
CAGR (2011-2021)	**-6.5%**	**-9.4%**	**-7.6%**	**N/A**

Source: USDOT T-100, September 2021.

Notes: YTD = Year to Date (January through June 2021). Previous 12 Months=July 2020 through June 2021.

General Aviation

GA refers to flight activities that do not include scheduled air services, unscheduled air transport operations, or military operations. GA activities include, but are not limited to, flight training, recreational flying, private and corporate air transportation, and flight testing.

Itinerant GA Operations

Itinerant operations are those that originate and terminate at different airports. These operations include business travelers coming to and from the community, recreational pilots, and student pilots performing cross

country training flights. Itinerant operations made up 45 percent of overall GA operations in 2020 and have been increasing at an average annual rate of 2.5 percent between 2010 and 2020. This is down from the 3.0 percent CAGR experienced between 2009 and 2019. Year-to-date (June 2021) and the previous 12 months' levels seem to indicate that itinerant GA activity is rebounding from the COVID-impacted 2020 level.

Local GA Operations

Local operations are those that originate and terminate at the same airport. These operations are generally performed by pilots practicing landings. Touch-and-go operations, where aircraft land, slow, then accelerate and takeoff without leaving the runway, count as two operations. Depending on the traffic pattern, an aircraft can perform more than six operations in an hour when practicing touch-and-goes. Local operations are highly sensitive to the amount of flight training occurring at an airport. As mentioned previously, SWO has one flight school, the OSU Flight Center, and the FBO also offers flight training. Local GA operations made up 55 percent of overall GA operations in 2020 and have been increasing at an average annual rate of 1.3 percent between 2010 and 2020. Like itinerant GA operations, local GA operations were increasing at a faster rate prior to 2020, experiencing a CAGR of 2.5 percent between 2009 and 2019. Unlike itinerant GA operations, local GA operations experienced year-to-date and the previous 12 months do not indicate a rebound to pre-COVID levels.

However, discussions with OSU Flight Center personnel indicate their training levels will increase in the future. Currently, approximately 300 students are in the flight training program. With small, incremental changes, OSU intends to increase student enrollment in the program to approximately 400 in the future. This represents a 33 percent increase in student pilots. The OSU Flight Center also has plans to upgrade their existing training fleet, replacing older Cessna 152s with Cirrus SR20 and Piper PA-44 Seminole aircraft.

Total GA operations have fluctuated during the past decade, but overall SWO has experienced healthy growth. **Table B-10** presents SWO itinerant, local, and total GA operations since 2009. **Figure B-3** shows the breakdown graphically.

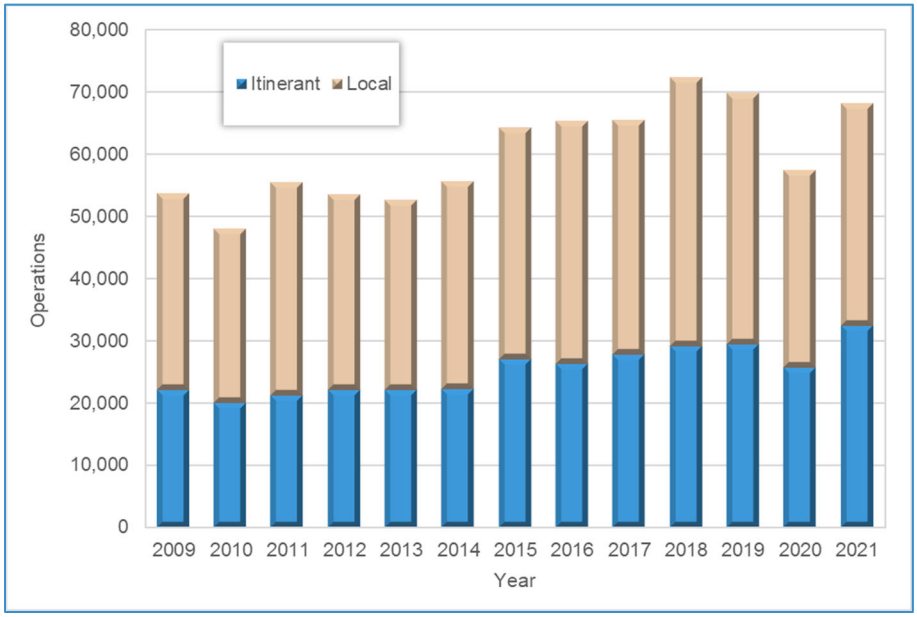
Table B-10: GA Operations, 2009-2021

Fiscal Year	Itinerant Operations	Percent Change	Local Operations	Percent Change	Total Operations	Percent Change
2009[1]	21,921	N/A	31,526	N/A	53,447	N/A
2010[1]	19,959	-9.0%	28,045	-11.0%	48,004	-10.2%
2011[1]	21,195	6.2%	34,305	22.3%	55,500	15.6%
2012[1]	22,020	3.9%	31,551	-8.0%	53,571	-3.5%
2013[1]	21,994	-0.1%	30,731	-2.6%	52,725	-1.6%
2014[1]	22,180	0.8%	33,553	9.2%	55,733	5.7%
2015[1]	27,009	21.8%	37,355	11.3%	64,364	15.5%
2016[1]	26,291	-2.7%	39,119	4.7%	65,410	1.6%
2017[1]	27,782	5.7%	37,787	-3.4%	65,569	0.2%
2018[1]	29,113	4.8%	43,310	14.6%	72,423	10.5%
2019[1]	29,455	1.2%	40,501	-6.5%	69,956	-3.4%
CAGR (2009-2019)	**3.0%**	**N/A**	**2.5%**	**N/A**	**2.7%**	**N/A**
2020[1]	25,654	-12.9%	31,858	-21.3%	57,512	-17.8%
CAGR (2010-2020)	**2.5%**	**N/A**	**1.3%**	**N/A**	**1.8%**	**N/A**
2021 (YTD)[2]	23,945	N/A	24,604	N/A	48,549	N/A
2021 (Previous 12 Months)[2]	32,375	26.2%	35,879	12.6%	68,254	18.7%
CAGR (2011-2021)	**4.3%**	**N/A**	**0.4%**	**N/A**	**2.1%**	**N/A**

Sources: [1] FAA TAF, 2021.
[2] FAA The Operations Network (OPSNET), August 2021.

Notes: YTD=Year to Date (October 2020 through June 2021). Previous 12 Months=July 2020 through June 2021.

Figure B-3: Itinerant and Local General Aviation Operations, 2009-2021



Military

SWO does not have based military aircraft. The aircraft operations are mainly related to training or touch-and-go flights and fueling of various aircraft and mission types. Military activity is driven by the needs of the U.S. Department of Defense rather than by economic forces. Therefore, for planning purposes, military operations are projected to remain flat at the 2020 levels. Historical military operations are provided in **Table B-11**.

Table B-11: Military Operations, 2009-2021

Fiscal Year	Itinerant	Local	Total	Percent Change
2009[1]	709	1,207	1,916	N/A
2010[1]	1,523	1,876	3,399	77.4%
2011[1]	1,363	2,044	3,407	0.2%
2012[1]	1,146	1,863	3,009	-11.7%
2013[1]	1,187	1,676	2,863	-4.9%
2014[1]	1,384	2,344	3,728	30.2%
2015[1]	1,115	1,492	2,607	-30.1%
2016[1]	1,099	1,551	2,650	1.6%
2017[1]	1,107	1,405	2,512	-5.2%
2018[1]	1,326	1,734	3,060	21.8%
2019[1]	1,485	1,324	2,809	-8.2%
CAGR (2009-2019)	**7.6%**	**0.9%**	**3.8%**	**N/A**
2020[1]	1,314	1,897	3,211	14.3%
CAGR (2010-2020)	**-1.5%**	**0.1%**	**-0.6%**	**N/A**
2021 (YTD)[2]	1,137	1,207	3,642	N/A
2021 (Previous 12 Months)[2]	1,872	2,634	4,506	N/A
CAGR (2011-2021)	**3.2%**	**2.6%**	**2.8%**	**N/A**

Sources: [1] FAA TAF, 2021.
[2] FAA The Operations Network (OPSNET), 2021.

Existing Operations by Aircraft Type

Table B-12 shows the total breakdown of aircraft operations at SWO and their percentage of total operations. The breakdown by type for Commercial Service and GA turboprop and jet activity come directly from the FAA TFMSC data since the confidence level regarding the accuracy of the data recorded in TFMSC is very high. The TFMSC confidence level for the accuracy of other aircraft types is not as high, and therefore various degrees of estimation have been applied to arrive at these operational numbers. SWO ATCT personnel reviewed and approved the data as being accurate according to their estimation.

Table B-12: Existing Operations by Aircraft Type, 2019, 2020, and 2021

Aircraft Type	FY 2019 Operations	Percentage	FY 2020 Operations	Percentage	FY 2021 Operations[1]	Percentage
Commercial Service	**2,517[2]**	**3.3%**	**1,920[2]**	**3.1%**	**1,973[1]**	**2.6%**
Air Carrier[2]	32	1.3%	30	1.6%	22	1.1%
Narrow Body Jet[3]	32	100.0%	30	100.0%	22	100.0%
Air Taxi/Commuter[2]	2,485	98.7%	1,890	98.4%	1,951	98.9%
Regional Jet[3]	1,791	72.1%	1,312	69.4%	991	50.8%
Air Cargo[3]	100	4.0%	92	4.9%	94	4.8%
GA Types[4]	584	23.9%	486	25.7%	866	44.4%
General Aviation	**69,956[2]**	**92.9%**	**57,512[2]**	**91.8%**	**68,254[1]**	**91.3%**
Single Engine Piston[6]	62,162	88.9%	51,277	89.2%	62,311	91.3%
Multi-Engine Piston[5]	6,347	9.1%	4,911	8.5%	4,461	6.5%
Turboprop[3]	564	0.8%	623	1.1%	693	1.0%
Jet[3]	883	1.3%	697	1.2%	787	1.2%
Helicopter[3]	0	0.0%	4	0.0%	2	0.0%
Military	**2,809[2]**	**3.7%**	**3,211[2]**	**5.1%**	**4,506[1]**	**6.0%**
Piston[7]	2,099	74.7%	2,661	82.9%	3,830	85.0%
Turboprop[3]	476	16.9%	350	10.9%	516	11.5%
Jet[3]	216	7.7%	192	6.0%	150	3.3%
Helicopter[3]	18	0.6%	8	0.2%	10	0.2%
Total[1]	**75,282[2]**	**100%**	**62,643[2]**	**100%**	**74,733[1]**	**100%**

Sources: [1] Previous 12 Months (July 2020 through June 2021) using FAA OPSNET, 2021.

[2] FAA TAF, 2021.

[3] TFMSC Direct – Operations obtained directly from TFMSC data.

[4] TFMSC Derived – Operations derived from subtracting the sum of Air Taxi/Commuter regional jet and air cargo operations from total Air Taxi/Commuter operations.

[5] TFMSC Derived – Operations derived from applying the ratio of MEP to all piston operations contained in TFMSC to the remainder of GA operations when turboprop, jet and helicopter operations are removed.

[6] TFMSC Derived – Operations derived from subtracting the sum of GA MEP, turboprop, jet, and helicopter operations from total GA operations.

[7] TFMSC Derived – Operations derived from subtracting the sum of turboprop, jet, and helicopter operations from total Military operations.

Based Aircraft

The FAA categorizes based aircraft by engine with the main categories being single engine piston, multi-engine piston, jet aircraft with turbine engines (includes both turboprops and turbojets), helicopters, and other, which includes experimental sport, glider, and ultralight aircraft. Based aircraft are those stored in a hangar or apron at SWO and do not include itinerant aircraft temporarily stored. **Table B-13** shows the based aircraft records from 2009 to 2021. Based aircraft at SWO have remained steady with a slight overall increase.

As of 2021, 90 percent of based aircraft at SWO are single engine, 7.5 percent are multi-engine piston, and 2.5 percent are jet (which are single engine turboprop aircraft). No aircraft categorized as “Other” have been based at SWO since 2009. Growth in single engine piston and jet aircraft have offset the decline in multi-engine piston and helicopter.

Table B-13: Based Aircraft, 2009-2021

Fiscal Year	Single Engine Piston	Multi-Engine Piston	Jet	Helicopter	Other	Total	Percent Change
2009[1]	66	10	0	1	1	78	N/A
2010[1]	62	8	0	1	0	71	-9.0%
2011[1]	63	6	0	1	0	70	-1.4%
2012[1]	64	6	0	1	0	71	1.4%
2013[1]	64	6	0	1	0	71	0.0%
2014[1]	68	5	0	2	0	75	5.6%
2015[1]	65	5	0	2	0	72	-4.0%
2016[1]	64	5	0	1	0	70	-2.8%
2017[1]	64	5	0	1	0	70	0.0%
2018[1]	64	5	0	1	0	70	0.0%
2019[1]	66	5	0	0	0	71	1.4%
CAGR (2009-2019)	**0.0%**	**-6.7%**	**N/A**	**-100%**	**-100%**	**-0.9%**	**N/A**
2020[1]	67	5	0	0	0	72	1.4%
CAGR (2010-2020)	**0.8%**	**-4.6%**	**N/A**	**-100%**	**N/A**	**0.1%**	**N/A**
2021[2]	72	6	2	0	0	80	11.1%
CAGR (2011-2021)	**1.3%**	**0.0%**	**200%**	**-100%**	**N/A**	**1.3%**	**N/A**

Sources: [1] FAA TAF, 2021.
[2] SWO staff.

FORECAST DOCUMENTATION REVIEW

Prior to forecasting future activity levels at SWO, examining historical aviation activity data, existing and emerging trends, and projections made by other independent organizations is important for context. The following reports, studies, and publications and their associated projections were reviewed, and their relevance to the SWO is discussed.

2008 Stillwater Regional Airport Master Plan

The 2008 Stillwater Regional Airport Master Plan has a base year of 2006 and forecasted aviation activity through the year 2026. Prepared almost a full decade before the reinstatement of commercial air carrier service, the total enplanements were forecasted to minimally increase from 1,436 to 2,970 (CAGR of 3.7 percent), relying primarily on the increase in the transportation of college athletic teams and the occasional charter service to gambling destinations such as Laughlin, Arizona, and Reno, Nevada. Air carrier and charter aircraft operations were projected to increase from 250 to 360 operations (CAGR of 1.8 percent); GA operations were projected to increase from 78,415 in 2006 to 119,091 by 2026 (GACR of 2.0 percent). Based aircraft were expected to increase from 77 in the 2006 to 102 by 2026 (CAGR 1.4 percent). A comparison of the forecast to actual activity levels indicates from 2006 to 2016 operations and based aircraft grew at slower rates than anticipated; enplanements far exceeded the forecast.

2015 Stillwater Regional Airport Air Service Environmental Assessment

The 2015 Stillwater Regional Airport Air Service Environmental Assessment provided forecasts for the base year of commercial air carrier service (2016) and a five-year with and without air carrier service future forecast (2021). The project forecasts anticipated initial year and five-year projections for commercial service passengers to equal a total of 57,938 (28,969 enplanements). This was an estimation based on two daily flights with 77 percent occupancy of a 50-seat aircraft and the charter flights of college athletic teams. Air carrier operations were also anticipated not to increase during the five-year forecast period, remaining at 1,517 operations. Air Taxi and Commuter aircraft operation increases were expected to grow from 1,108 in 2016 to 1,193 by 2021 (CAGR of 1.5 percent). GA operations were projected to increase from 22,549 in 2016 to 23,933 in 2021 (CAGR of 1.2 percent).

FAA's Terminal Area Forecast (TAF)

The TAF is an FAA developed forecasting tool that the FAA updates annually and uses to determine budget and staffing needs. Due to limited staff resources, the FAA cannot forecast to the same degree of detail at smaller regional airports as they can at large airports. However, the TAF provides a guideline for developing forecasts and is utilized by FAA to compare scenario-driven forecasts with the forecasts developed by the FAA. The TAF projects enplanements at SWO to increase from 17,410 in 2020 to 28,964 by 2025, remaining constant at this level through 2045 (CAGR of 2.1 percent). Total commercial service operations are projected to increase from 1,920 in 2020 to 3,061 in 2045 (CAGR of 1.9 percent). GA operations are expected to increase from 57,512 in 2020 to 88,248 by 2045 (CAGR of 1.7 percent). The TAF predicts SWO's based aircraft to increase from 72 in 2020 to 123 in 2045 (CAGR of 2.2 percent).

FAA's Aerospace Forecasts Fiscal Years 2021-2041

The FAA Aerospace Forecasts, updated annually, are aeronautical activity projections by major industry sectors used to understand future demands on the national airport and airspace systems. Many factors are considered in the FAA's development of the forecasts. Some of the most important include U.S. and international economic forecasts and anticipated trends in fuel costs. The FAA Aerospace Forecasts are used for the SWO forecasts to correlate with past activity trends, assimilate nationwide industry patterns, comprehend the basis for the major forecast rationale and methodology, and to quantify growth patterns and rates of change relative to specific industry activity and utilization components.

Major assumptions employed in the forecasts and the projections relevant to SWO are summarized here:

- Airline activity, capacity, and profitability were drastically affected by the COVID-19 pandemic. Extreme cost cutting measures and business modifications were implemented that will shape the industry for many years.
- It is thought that airlines will be smaller. Fleets have and will continue to be much younger and more fuel efficient with older aircraft retirement, and future growth will be restricted as airlines carry higher levels of debt and restrain capital spending and investment.

- Due to pent-up demand experienced by consumers in late 2020 and early 2021, domestic leisure passenger traffic has led the airline recovery so far, and domestic business passenger travel should increase in the short term.
- Over the long term, FAA sees the strengths and capabilities developed by airlines pre-COVID will return, and aviation growth will be driven by improving U.S. and world economies.
- Following three years of expected double-digit growth during the short-term recovery from 2021, U.S. air carrier domestic passenger growth is expected to level off at an average growth rate of 2.3 percent, resulting in a 20-year average growth rate of 4.9 percent per year.
- Nationwide, domestic passengers are expected to return to 2019 levels by early 2024.
- Air taxi and commuter aircraft operations are expected to increase by 1.1 percent annually at towered airports.
- The U.S. active GA aircraft fleet is expected to increase slightly at 0.1 percent annual growth.
- Active piston-powered fixed-wing aircraft are projected to decrease 0.9 percent annually. Active single engine piston-powered aircraft are forecast to decline 0.9 percent annually, while active multi-engine piston-powered aircraft are projected to decline by 0.4 percent annually.
- Active turbine-powered, fixed-wing aircraft are expected to increase 1.7 percent annually. Turboprop aircraft are expected to increase 0.6 percent annually, while turbojet aircraft are projected to increase 2.3 percent annually.
- Active light sport aircraft (i.e., aircraft with weight, capacity, and performance restrictions) are projected to increase significantly by 4.0 percent annually.
- Anticipated GA aircraft hours flown will increase 1.0 percent annually through 2041. GA operations at towered airports are expected to increase 0.8 percent annually.

AVIATION ACTIVITY FORECASTS

The role and importance of SWO will continue to support a wide range of activities including commercial service, flight training, GA activity, and military. The planning period forecasts aviation activity into the future, from baseline data collected in 2021 to the end of the period in 2040. SWO is expected to see steady growth over the next 20 years, but near-term airport activities have been adversely affected and will likely continue to be adversely affected by COVID-19. The methods, assumptions, risks, and uncertainties associated with the forecasts are presented. As stated earlier, each preferred forecast is compared with the FAA's TAF for consistency.

Forecast Approach and Methodology

Various statistical forecast methods are available to address aviation activity and overall demand. A technique's effectiveness depends on the availability and accuracy of the data. The three most common

methodologies considered and assessed for applicability in developing a range of reasonable forecast scenarios are described below.

Regression Analysis

In a regression analysis forecast, the value being estimated or forecast (called the dependent variable) is related to other variables (called the independent or explanatory variables, which help "explain" the estimated value). A correlation coefficient is calculated for each pairing of dependent to independent variables to quantify this link. One major advantage of regression analysis is that if the independent variables are more readily projected than the forecasts or dependent available, then deriving a forecast is relatively easy.

Market Share Analysis

A market share analysis is a relatively easy method to use and can be applied to any measure for which a reliable higher-level (i.e., larger aggregate) forecast is available. Historical shares are calculated and used as a basis for projecting future shares. This approach is a "top-down" method of forecasting, since forecasts of larger aggregates (e.g., national aviation forecasts) are used to derive forecasts for smaller areas (e.g., individual airport aviation forecasts).

Trend Analysis

Trend analysis relies on projecting historical trends into the future. In trend analysis, a regression equation is used, with time as the independent variable. It is one of the fundamental techniques used to analyze and forecast aviation activity. While it is frequently used as a back-up or expedient technique, it is highly valuable because it is simple to apply. Sometimes trend analysis can be used as a reasonable method of projecting variables that would be complicated to project by other means.

Correlation Analysis

Correlation analysis, which is part of the regression analysis methodology, ignores units and orders of magnitude and instead measures how closely different variables change in proportion to one another using percentages. Correlation can be negative, indicating that as one index grows, the other declines. Correlation is measured by the correlation coefficient, which ranges from -1.00 to +1.00. A score close to +/-1.00 suggests stronger positive/negative correlation, and a score closer to zero suggests that the two variables are not correlated. Scores with a coefficient greater than 0.8 are considered highly correlated.

While correlation shows potential interrelatedness between variables, it cannot be the sole factor to determine that growth of one variable is caused by the other. Often there are unrelated factors and additional variables that impact the growth in both variables. Correlation analysis usually does not fully explain why variables behave the way they do, but does help suggest a connection, or lack thereof, between variables that may be subject to the same market forces. Correlation is augmented by professional judgement that helps explain the correlation.

Passenger Enplanements

Forecasts of passenger enplanements serve as the foundation of other commercial service activity forecasts and provide a basis for determining future requirements for facilities integral to the accommodation of passengers.

Methodology

Correlation analysis tested multiple aviation and socioeconomic variables with SWO's historical passenger enplanements from 2017 through 2020, which corresponds to the reinstatement of commercial service at SWO. The three variables with the highest correlation to SWO passenger enplanements are:

- Domestic revenue passenger enplanements on U.S. regional carriers as recorded in the FAA's Aerospace Forecasts 2021-2041 (correlation of 0.983).
- Domestic revenue passenger enplanements on U.S. commercial air carriers as recorded in the FAA's Aerospace Forecasts, 2021-2041 (correlation of 0.979).
- Enplanements within the State of Oklahoma (correlation of 0.958).

However, since SWO enplanements are a subset of these three variables, a market share analysis is considered more appropriate and was performed. SWO's market share, expressed as a percentage of the three variables, is provided in **Table B-14**.

Table B-14: Passenger Enplanement Market Share Comparison, 2017-2020

Fiscal Year	SWO[1]	U.S. Regional Carriers Domestic Revenue Enplanements[2]	SWO Market Share	Domestic Revenue Enplanements U.S. Commercial Air Carrier[2]	SWO Market Share	Oklahoma Enplanements[1]	SWO Market Share
2017	27,754	148,599,874	0.019%	743,717,643	0.0037%	3,271,695	0.85%
2018	26,318	153,668,408	0.017%	780,654,359	0.0034%	3,579,505	0.74%
2019	28,964	159,331,828	0.018%	813,109,423	0.0036%	3,733,601	0.78%
2020	17,410	93,780,639	0.019%	462,559,228	0.0038%	2,162,525	0.81%
Average Market Share			**0.018%**		**0.0036%**		**0.79%**

Sources: [1] FAA TAF, May 2021.
[2] FAA Aerospace Forecast 2021-2041.

Forecast Scenarios

There were five passenger enplanement forecast scenarios evaluated and presented. They are based on a variety of assumptions that consider a range of potential scenarios related to the COVID-19 pandemic recovery, socioeconomic drivers, and long-term economic sustainability. Each scenario uses 17,410 enplanements in 2020 as the base year, which includes 1,308 passengers enplaned by chartered aircraft transporting university athletic teams. The number of chartered passengers is expected to increase slightly to its 10-year historical average of approximately 1,600 by FY 2022 and remain at this level throughout the planning period. The scenarios described below are compared against each other and to the 2020 TAF in **Table B-15**. **Figure B-4** graphically portrays the forecast scenarios.

Scenario One

This scenario uses linear projection by applying the expected City of Stillwater MSA population growth rate from 2020 to 2040 to forecast passenger enplanements expected to occur at SWO. This results in a CAGR of 0.5 percent. Population resulted in a correlation coefficient with enplanements of -0.75, not a significant correlation so this scenario is eliminated from consideration.

Scenario Two

This scenario uses trend projection by applying SWO's passenger enplanement growth rate experienced from 2017 to 2019 to future enplanements. This results in a CAGR of 4.4 percent. The limited three-year historical period does not provide a significant trend line to warrant sufficient confidence in this analysis. This scenario is eliminated from consideration.

Scenario Three

This scenario uses market share to estimate future passenger enplanements at SWO as a function of nationwide domestic revenue enplanements on regional air carriers. SWO's four-year average market share is 0.018 percent. Applying this same ratio to projected domestic revenue enplanements on regional air carriers as contained in the FAA's Aerospace Forecast 2021-2041 results in a CAGR of 4.7 percent.

Scenario Four

This scenario also uses SWO's market share of nationwide domestic revenue enplanements on regional air carriers but applies a slightly decreasing average market share from 0.019 percent in 2021 to 0.014 percent in 2040. This does not fully demonstrate SWO's historic market share trend, rather just assumes that it is reasonable to expect SWO's limited catchment area population base will not keep pace with expected nationwide growth but will at least remain similar to the past four years. Applying the decreasing ratio to projected domestic revenue enplanements on regional air carriers as contained in the FAA's Aerospace Forecast 2021-2041 results in a CAGR of 3.3 percent.

Scenario Five

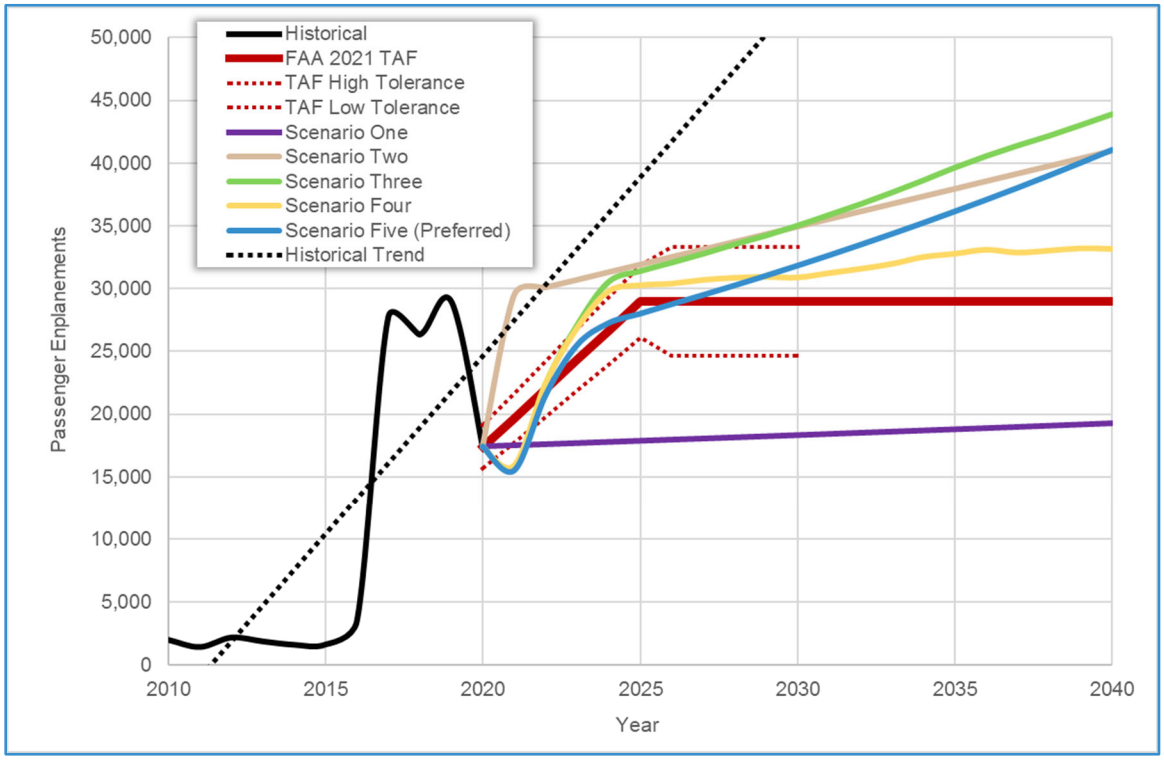
This scenario applies the longer enplanement recovery times experienced by airports in Oklahoma after the events of September 11, 2001, and the economic recession of 2008-2009 to SWO. Unlike the FAA's Aerospace Forecast 2021-2041 expectation that domestic passenger enplanements will return to pre-pandemic 2019 levels by early 2024, this scenario does not anticipate SWO's enplanements will surpass 2019 numbers until 2026. This is based primarily on the uncertainty of business travel returning to pre-pandemic levels and when OSU will rescind restrictions on staff travel enacted during the pandemic. Thereafter, this scenario uses linear projection by applying the TAF's 20-year CAGR rate of 2.6 percent applied to SWO enplanements throughout the remainder of the forecast period. This scenario results in an overall CAGR of 4.4 percent.

Table B-15: Passenger Enplanement Forecasts, 2020-2040

Year	2020 TAF	Scenario One (Population)	Scenario Two (2017-2020 Trend)	Scenario Three (Average Market Share)	Scenario Four (Decreasing Market Share)	Scenario Five (Deferred Recovery/TAF CAGR - Preferred)
2020[1]	17,410	17,410	17,410	17,410	17,410	17,410
2021[2]	19,721	17,500	29,490	15,620	15,930	15,500
2022[2]	22,031	17,580	30,100	22,380	22,460	21,500
2023[2]	24,343	17,670	30,700	27,070	26,870	25,500
2024[2]	26,653	17,760	31,310	30,520	29,790	27,250
2025[2]	28,964	17,850	31,910	31,380	30,270	28,000
2030[2]	28,964	18,300	34,940	35,010	30,890	31,830
2035[2]	28,964	18,760	37,960	39,640	32,780	36,150
2040[2]	28,964	19,240	40,990	43,900	33,160	41,060
CAGR	**2.6%**	**0.5%**	**4.4%**	**4.7%**	**3.3%**	**4.4%**

Sources: [1] Actual.
[2] Mead & Hunt projections.

Figure B-4: Passenger Enplanement Forecasts, 2010-2040



Preferred Forecast Scenario and Comparison to TAF

Scenario Five is the preferred forecast for passenger enplanements at SWO. As presented above, it is thought that it will take several years for SWO's passenger enplanements to return to pre-pandemic levels primarily based on the uncertainty of business travel returning to normal. Some business travel will be found

unnecessary as discovered during pandemic related shutdowns and travel restrictions. The advent and proliferation of technology that allows virtual meetings and presentations is thought to supplant a certain but unknown percentage of business travel. However, as the situation returns to more normal conditions, it is thought that business travel will return, and OSU will lift staff travel restrictions. The improving national economic conditions underlying the long-term forecasts contained in the FAA Aerospace Forecasts and TAF and the steadily improving local socioeconomic factors will eventually drive SWO's enplanements to reach levels suggested by the 2017 to 2019 trend.

Table B-16 shows a side-by-side comparison of the preferred enplanement forecasts with the 2020 TAF. As can be seen, the preferred forecast is slightly below the TAF initial five-year forecast by approximately -3.3 percent, but slightly above the TAF 10-year forecast by approximately 9.9 percent. These are well within TAF tolerances.

Table B-16: Passenger Enplanement Forecasts – TAF Comparison, 2020-2040

Fiscal Year	Preferred Forecast	2020 TAF	Difference	Percent Difference
2020[1]	17,410	17,410	0	0.0%
2025[2]	28,000	28,964	-964	-3.3%
2030[2]	31,830	28,964	2,866	9.9%
2035[2]	36,150	28,964	7,186	24.8%
2040[2]	41,060	28,964	12,096	41.8%
CAGR	**4.4%**	**2.6%**	**N/A**	**N/A**

Sources: [1] FAA TAF, May 2021.
[2] Mead & Hunt projections.

Commercial Service Passenger Aircraft Operations

Commercial aircraft operations are performed by scheduled and charter passenger airlines, and air cargo aircraft and Part 135 on-demand are performed by air taxi operations. Private business aircraft operations are counted as general aviation operations rather than commercial operations.

Approximately 97 percent of commercial service aircraft operations at SWO are scheduled passenger regional jet and air cargo turboprop operations. The remaining 3 percent were performed by charter airlines using narrow-body aircraft. As stated previously, Envoy Airlines and Martinaire Aviation LLC are the scheduled passenger and air cargo air carriers, respectively, at SWO. This is likely to remain so throughout the planning period. Martinaire Aviation LLC aircraft operations are addressed in the subsequent Air Cargo section. This section only considers scheduled passenger aircraft operations by Envoy Airlines and the on-demand air carriers transporting collegiate athletic teams travelling to and from SWO.

Methodology

The establishment of projected passenger enplanements is required to properly project commercial service operations, as there is usually a direct relationship between enplanements and commercial service operations. If enplanements increase, operations will generally increase to accommodate the demand.

However, the relationship can vary significantly, in that enplanements can increase without increasing operations, or even increase following a decrease in operations. Often, this is a result of airlines using larger aircraft with greater seating capacity, or more efficient scheduling with increased passenger load factors. The load factor is a ratio of the number of actual enplanements compared to the total number of departure seats (e.g., if an aircraft has 50 seats and 25 passengers board, the load factor is 50 percent).

The commercial aircraft operations forecast is based on the following assumptions:

- Air carriers will add service to meet the level of demand in the passenger enplanement forecast.
- Air carrier regional jets with 50 seats or fewer will be retired by 2031 following expectations of the FAA Aerospace Forecast 2021-2041.
- The average number of seats per departure will increase as smaller regional jets are replaced by narrow-body aircraft. Air carriers typically adjust flight frequency to keep load factors at profitable levels (striving for 80 percent). However, as air carriers transition to larger aircraft, load factors are expected to decrease with an adjustment period before rising. The growth in enplanements at SWO leads to an increase in overall operations. However, the projected increase in operations is tempered by the up gaging of aircraft, with the number of forecast operations otherwise being even higher.

Forecast Scenario

Table B-17 presents the information for existing and future non-scheduled commercial service aircraft operations at SWO. As the number of university athletic teams transported to and from SWO on both air carrier aircraft (i.e., more than 60 seats) and air taxi/commuter aircraft (i.e., 60 or fewer seats) returns to pre-pandemic conditions, the number of operations is expected to remain stable throughout the planning period.

Table B-17: Non-Scheduled Commercial Service Passenger Aircraft Operations Forecast, 2020-2040

Year	Enplanements	Air Carrier Charter		Air Taxi/Commuter Charter		Total Operations
		Departures	Operations	Departures	Operations	
2020[1]	1,308	15	30	286	572	602
2025[2]	1,600	18	36	350	700	736
2030[2]	1,600	18	36	350	700	736
2035[2]	1,600	18	36	350	700	736
2040[2]	1,600	18	36	350	700	736
CAGR	**1.0%**	**0.9%**	**0.9%**	**1.0%**	**1.0%**	**1.0%**

Sources: [1] FAA TAF, May 2021.
[2] Mead & Hunt.

Table B-18 presents the existing and forecast scheduled commercial service (i.e., regional air carrier Envoy Airlines/American Airlines) passenger aircraft operations at SWO. As presented earlier, the FAA Aerospace Forecast 2021-2041 expects all 50-seat regional jet aircraft to be retired from airline fleets nationwide by 2031. Therefore, the number of air taxi/commuter aircraft operations at SWO is expected to decrease through the first half of the planning period, eventually being eliminated altogether by 2035. This decrease is offset by the gradual replacement of the 50-seat regional jets by 76-seat narrow body jets, both nationally and at SWO. The resulting changes in the fleet mix and seating capacities indicate that scheduled commercial service

passenger aircraft operations will slightly increase at the end of the planning period, resulting in a CAGR of 0.9 percent.

Table B-18: Scheduled Commercial Service Passenger Aircraft Operations Forecast, 2020-2040

Year	Enplanements	Air Carrier Departures	Air Taxi/ Commuter Departures	Load Factor	Total Seats	Seats/ Departure	Total Operations
2020	16,102[1]	0	613[2]	57.7%	27,914[3]	46	1,226
2025[4]	26,400	156	572	65.3%	40,456	56	1,456
2030[4]	30,230	572	156	59.0%	51,272	70	1,456
2035[4]	34,550	676	0	67.2%	51,376	76	1,352
2040[4]	39,460	728	0	71.3%	55,328	76	1,456
CAGR	**4.6%**	**N/A**	**-99.9%**	**N/A**	**3.5%**	**N/A**	**0.9%**

Sources: [1] FAA TAF, May 2021.
[2] Envoy Airlines, August 2021.
[3] USDOT T-100 data, September 2021.
[4] Mead & Hunt.

Preferred Forecast Scenario and Comparison to TAF

Table B-19 shows a side-by-side comparison of the preferred commercial service aircraft operations forecasts with the 2020 TAF. As can be seen, the preferred forecasts are within the TAF tolerances in both the initial five-year and 10-year forecast periods. Nevertheless, it seems the TAF did not fully anticipate the retirement of 50-seat regional aircraft, and the phased introduction of 76-seat aircraft by the air carriers serving SWO and overestimated total commercial service aircraft forecast operations. Introduction of larger commercial service aircraft with almost 50 percent more seats per departure indicates air carriers will not increase flight frequency at the rate anticipated by the TAF.

Table B-19: Commercial Service Aircraft Operations Forecasts – TAF Comparison, 2020-2040

Fiscal Year	Preferred Forecast	2020 TAF	Difference	Percent Difference
2020[1]	1,920	1,920	0	0.0%
2025[2]	2,284	2,517	-233	-9.3%
2030[2]	2,284	2,645	-361	-13.6%
2035[2]	2,180	2,776	-596	-21.5%
2040[2]	2,284	2,915	-631	-21.6%
CAGR	**0.9%**	**2.1%**	**N/A**	**N/A**

Sources: [1] FAA TAF, May 2021.
[2] Mead & Hunt projections.
Note: Includes air cargo aircraft operations.

Air Cargo

Methodology

Because air cargo volume transported in the belly compartments of commercial service aircraft at SWO fluctuated wildly over the past decade, a strong, discernable correlation could not be established with any aviation or socioeconomic variables. The highest correlation coefficient was 0.70 with local GA operations in

the State of Oklahoma and 0.64 with Stillwater's historical population and retail sales. These are not statistically significant correlations, and they exclude regression forecasting from consideration. Additionally, with air cargo volumes transported by Martinaire LLC air cargo aircraft only available back to 2019, no discernable correlation can be established with any aviation or socioeconomic variables.

Over the past several years, the U.S. domestic air cargo market trends have declined due to security regulations and the shift from air to other modes of transportation (especially truck) as carriers face price competition from ground shipping methods. National online retailers like Amazon and Walmart incentivize their customers to use "free" two-day shipping rather than overnight at cost. The two-day day shipping allows for more cargo to be transported via truck instead of air, which is a cheaper alternative in most cases.

In the absence of correlated data, historical trends at SWO and GDP growth rates are used in air cargo forecasting because they better reflect the local economic conditions and historically nationwide air cargo activity tends to track with national GDP. Three methods considered for the air cargo volume forecasts, whether transported in the belly compartments of commercial service aircraft or in dedicated air cargo aircraft, are the following:

- Trend forecast carrying forward air cargo volume data.
- Stillwater MSA GDP growth rate time series analysis.
- National GDP growth rate time series analysis.

Dedicated air cargo aircraft operations provided by Martinaire LLC are expected to remain flat in the next 20 years as cargo payload capacities from 2019 through year-to-date 2021 has averaged 8 percent for outbound cargo and 18 percent for inbound cargo. This indicates any increases in air cargo volume experienced by Martinaire LLC can be accommodated within the existing aircraft operations.

Forecast Scenarios

There were three air cargo volume forecast scenarios analyzed and presented for both air cargo transported in the belly compartments of airline aircraft and in dedicated air cargo aircraft. These scenarios are shown in **Table B-20**.

Scenario One

This scenario uses trend projection by applying SWO's historical air cargo trends to future years. For air cargo transported in the belly compartments of air carrier aircraft, this results in a CAGR of 5.7 percent. This appears high given the historical amounts have fluctuated wildly and never surpassed 70,000 pounds. For air cargo transported by Martinaire LLC aircraft, this results in a negative CAGR. This scenario has been eliminated from consideration.

Scenario Two

This scenario uses linear projection by applying the expected Stillwater MSA GDP future growth rates from 2020 to 2040 to forecast air cargo volume. This results in CAGRs of 1.0 percent for both belly compartment and dedicated aircraft air cargo volumes throughout the 20-year planning period. Considering that neither the

belly compartment nor dedicated aircraft air cargo volumes reach the amounts experienced at SWO in 2019, this scenario has been eliminated from consideration.

Scenario Three

This scenario uses linear projection by applying national expected GDP future growth rates from 2020 to 2040. This results in a CAGR of 2.0 percent for belly compartment transported air cargo volumes and 1.9 percent for dedicated aircraft transported air cargo volumes. Using this scenario brings the 20-year planning period air cargo volumes back to near historical highs experienced at SWO.

Table B-20: Air Cargo Volume Forecast, 2020-2040

	Scenario One		Scenario Two		Scenario Three	
Year	Martinaire	Airlines	Martinaire	Airlines	Martinaire	Airlines
2020	37,057[1]	46,390[2]	37,057[1]	46,390[2]	37,057[1]	46,390[2]
2021[3]	21,980	66,760	37,460	46,900	37,800	47,320
2022[3]	6,900	70,670	38,880	47,420	38,550	48,260
2023[3]	---	74,570	38,290	47,940	39,330	49,230
2024[3]	---	78,470	38,710	48,470	40,110	50,210
2025[3]	---	82,380	39,140	49,000	40,910	51,220
2030[3]	---	101,890	41,340	51,750	45,170	56,550
2035[3]	---	121,400	43,020	54,390	49,150	62,430
2040[3]	---	140,910	45,220	57,160	54,000	68,930
CAGR	N/A	5.7%	1.0%	1.0%	1.9%	2.0%

Sources: [1] Martinaire Aviation LLC, August 2021.
[2] USDOT T-100, September 2021.
[3] Mead & Hunt.

Preferred Forecast Scenario

Scenario Three is the preferred forecast for air cargo volume. The unpredictable nature and limited historical data of air cargo volumes at SWO make accurate predictions challenging. Growth in the local economy would reasonably be expected to increase overall air cargo volumes. However, as stated earlier, the trend is changing from cargo transported by air to more ground-based transportation due to cost and the development of service centers spread throughout the country that make expedited ground deliveries feasible.

General Aviation Aircraft Operations

Itinerant General Aviation Operations

Methodology

Correlation analysis tested multiple aviation and socioeconomic variables with SWO historical itinerant GA operations from 2010 through 2020. The four most highly correlated variables:

- Local GA operations within the State of Oklahoma (correlation of 0.89).
- Population of Stillwater (correlation of 0.88).
- Retail sales within Stillwater (correlation of 0.85).

- The Standard & Poor's (S&P) 500 stock market index average annual close (correlation of 0.84).

These four variables were tested using regression analysis. The validity of each test is measured by the R-squared (R^2) value. The R^2 value describes how well the variables explain variance in the dependent market (i.e., itinerant GA operations). R^2 is the percent of variance explained by the model. The closer the R^2 value is to 1.00 (100 percent of variance explained), the more confidence can be placed in the model's ability to explain historical variability rather than by chance.

To account for the effects of the different but strongly correlated variables, multi-variable regression models were tested against historical itinerant GA operations. Multi-variable models allow the forecast to account for local (i.e., population and retail sales), statewide (i.e., local GA operations in Oklahoma), and national (i.e., S&P 500 stock market index) forces. In the case of multi-variable regression, the adjusted R^2 value is used to decide the level of confidence each model has displayed. Every variable added to a model increases the R^2 and never decreases it, which can lead to an incorrectly high R^2 value. The adjusted R^2 value accounts for this effect and avoids the issue of not knowing if the R^2 value is high due to the model being better or because it has more predictor variables. **Table B-21** shows the adjusted R^2 value of the four variables, and various combinations of the four variables. As can be seen, only one combination of variables, the analysis of all four variables, produced an R^2 value greater than 0.9. Therefore, the regression analysis will use this combination of variables for forecasting itinerant GA operations.

Table B-21: Multi-Variable Adjusted R2 Regression Analyses

Variable	Adjusted R^2 Value
Local OK GA Operations, MSA Population, MSA Retail Sales, S&P 500	0.928
Local OK GA Operations	0.777
MSA Population	0.745
MSA Population and MSA Retail Sales	0.720
MSA Population and S&P 500	0.714
MSA Retail Sales	0.697
MSA Population, MSA Retail Sales, S&P 500	0.684
S&P 500	0.673
MSA Retail Sales and S&P 500	0.663

Sources: [1] FAA TAF, 2021.
[2] FAA The Operations Network (OPSNET), 2021.

Forecast Scenarios

As with the passenger enplanements forecast, five itinerant GA operations forecast scenarios were evaluated and presented. They too are based on a variety of assumptions and considerations unique to SWO. The FAA Aerospace Forecasts 2021-2041 indicate that the GA sector of aviation was less affected by the COVID-19 pandemic than other sectors, especially airlines. Thus, the recovery for GA activity is not expected to take nearly as long. Each scenario uses 25,654 operations in 2020 as the base year.

Itinerant GA operations at SWO have fluctuated during the past 10 years with an overall increase of 2.5 percent. This is the inverse experienced at the national level, where the same period was -1.6 percent. The

methods used in the FAA Aerospace Forecasts 2021-2041 indicate national itinerant GA operations will increase at a CAGR of 0.9 percent. **Table B-22** and **Figure B-5** show the itinerant GA forecasts.

Scenario One. This scenario uses linear projection by applying the expected Stillwater MSA population growth rate from 2020 to 2040 to forecast itinerant GA Operations at SWO. This results in a CAGR of 0.5 percent. Population resulted in a correlation coefficient with itinerant GA operations of 0.88, a fairly high correlation. However, as stated previously, when checked using the regression analysis, population only resulted in R^2 value of 0.745, not a significant correlation. This scenario is eliminated from consideration.

Scenario Two. This scenario uses trend projection by applying the growth rate established from 2010 through 2020 to future itinerant GA operations. This results in a 20-year CAGR of 3.1 percent.

Scenario Three. This scenario uses market share to forecast the itinerant GA operations at SWO as a function of the nationwide itinerant GA operations. SWO's 2020 market share of national itinerant GA operations was 0.235 percent. Application of this percentage to projections contained in the FAA Aerospace Forecasts 2021-2041 results in a CAGR of 1.1 percent.

Scenario Four. This scenario also uses market share to forecast itinerant GA operations but uses SWO's market share of itinerant GA operations historically occurring in Oklahoma. The 2020 market share of 4.90 percent is increased rapidly to 5.30 percent in the initial five-year period to be in line with recent historical shares of 2018 and 2019, where SWO's market shares were 5.36 and 5.48, respectively. The reason for the rapid increase is the expected return to pre-pandemic levels of Stillwater's economic indicators at a much faster pace than experienced nationally or statewide. Application of the increasing ratio results in a 20-year CAGR of 0.8 percent.

Scenario Five. This scenario applies multi-variable regression analysis using the four variables stated previously (i.e., local GA operations within the State of Oklahoma, Stillwater's population, Stillwater's retail sales and the S&P stock market index average annual close). The equation is displayed below:

$$y = m_1(x_1) + m_2(x_2) + m_3(x_3) + m_4(x_4)+b$$

y = Itinerant GA operations, b = Intercept from Regression Analysis

y =(1.45×Population) + (0.0000099 × MSA Retail Sales) + (-3.64 × S&P) 500) + (0.057 × OK Local GA Operations) - 125,712.59

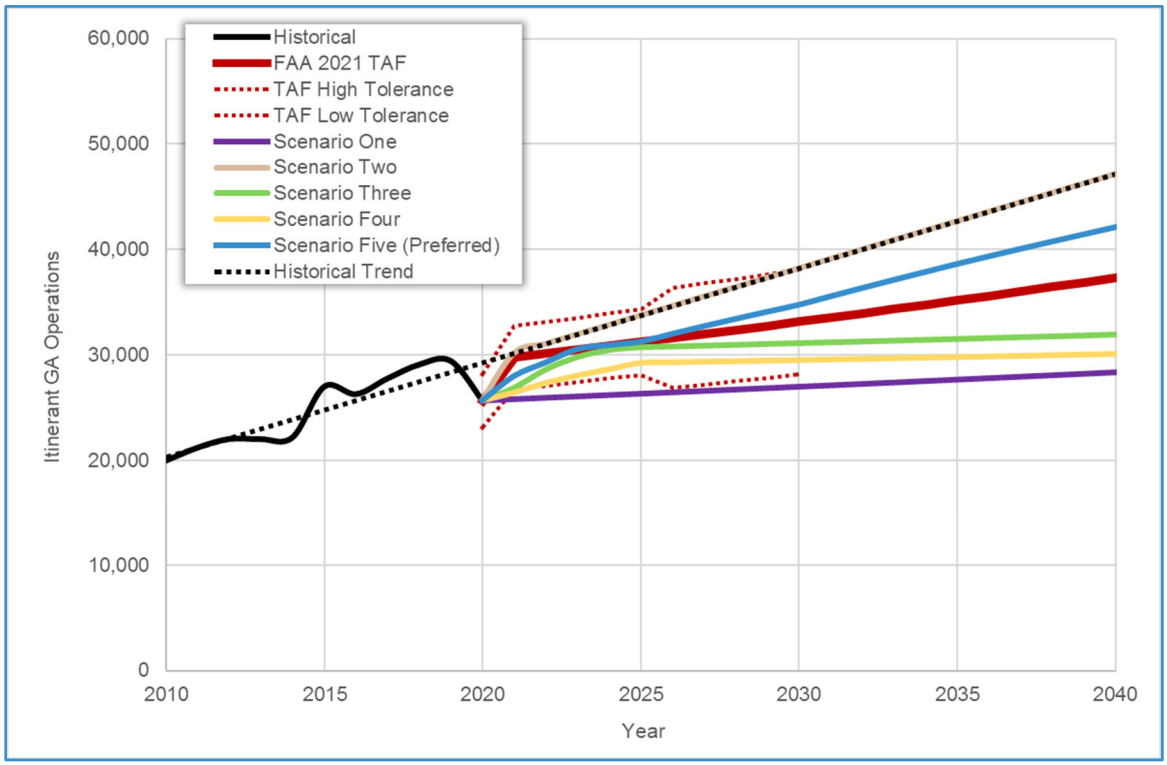
The multi-variable regression methodology incorporates a statical analysis to give confidence that the chosen variables have exhibited a degree of correlation with itinerant GA operations in the past. This scenario results in an overall CAGR of 2.5 percent.

Table B-22: Itinerant GA Forecasts, 2020-2040

Year	2020 TAF	Scenario One (Population)	Scenario Two (2010-2020 Trend)	Scenario Three (Average Market Share)	Scenario Four (Increasing Market Share)	Scenario Five (Regression - Preferred)
2020[1]	25,654	25,654	25,654	25,654	25,654	25,654
2021[2]	29,770	25,780	30,160	26,860	26,410	27,980
2022[2]	30,128	25,910	31,050	28,610	27,320	29,270
2023[2]	30,488	26,040	31,950	29,800	28,010	30,540
2024[2]	30,854	26,170	32,840	30,470	28,610	30,920
2025[2]	31,224	26,300	33,740	30,730	29,210	31,260
2030[2]	33,144	26,970	38,220	31,120	29,480	34,760
2035[2]	35,180	27,650	42,690	31,520	29,760	38,640
2040[2]	37,342	28,340	47,170	31,940	30,060	42,140
CAGR	**1.9%**	**0.5%**	**3.1%**	**1.1%**	**0.8%**	**2.5%**

Sources: [1] Actual.
[2] Mead & Hunt projections.

Figure B-5: Itinerant GA Forecasts, 2010-2040



Preferred Forecast Scenario and Comparison to TAF

Scenario Five is the preferred forecast for itinerant GA operations at SWO. Because FAA Aerospace Forecasts 2021-2041 project slight growth in the national itinerant GA aircraft operations, growth at SWO is supported. While the overall usage of piston-powered aircraft is anticipated to decline nationally, other

categories including turbine-powered, experimental, and light sport aircraft are growing. The facilities at SWO can accommodate larger turboprop and business jet aircraft operations and will not constrain growth. The preferred scenario incorporates regression forecasting using four strong correlated independent variables. Additionally, the preferred forecast mirrors increased growth by the TAF expected at SWO.

Table B-23 shows a side-by-side comparison of the preferred itinerant GA aircraft operations forecast with the 2020 TAF. As can be seen, the preferred forecasts vary from the TAF by less than 1 percent in initial five-year forecast period, and by less than 5 percent in the 10-year forecast period.

Table B-23: Itinerant GA Aircraft Operations Forecasts – TAF Comparison, 2020-2040

Fiscal Year	Preferred Forecast	2020 TAF	Difference	Percent Difference
2020[1]	25,654	25,654	0	0.0%
2025[2]	31,260	31,224	36	0.1%
2030[2]	34,760	33,143	1,617	4.9%
2035[2]	38,640	35,180	3,460	9.8%
2040[2]	42,140	37,342	4,798	12.8%
CAGR	**2.5%**	**1.9%**	**N/A**	**N/A**

Sources: [1] FAA TAF, May 2021.
[2] Mead & Hunt projections.

Local General Aviation Operations

Methodology

Correlation analysis tested multiple aviation and socioeconomic variables with SWO historical local GA operations from 2010 through 2020. The highest correlated variable with SWO's local GA operations was local GA operations within the State of Oklahoma, which has a correlation of 0.78. This is not a statistically significant correlation and excludes regression forecasting from consideration.

In the absence of correlated data, historical trends and market share analyses are employed because they better reflect local conditions. Additionally, current plans to increase student enrollment in the OSU Flight Center over time are factored and considered. Flight Center staff report that current training hours have been averaging 1,800 per month for the past several months, exceeding their normal 1,000 hours per month. The staff estimate this is from unmet demand resulting from students having limited training opportunities during mid to late 2020 after the COVID-19 pandemic began.

Forecast Scenarios

Five local GA operations forecast scenarios were evaluated and presented, which are based on a variety of assumptions and considerations unique to SWO. As stated previously, the GA sector of aviation was less affected by the COVID-19 pandemic, and the recovery is not expected to take nearly as long as the air carrier sector. Each forecast scenario uses 31,858 operations in 2020 as the base year.

Local GA operations at SWO have fluctuated during the past 10 years with an overall increase of 1.3 percent. This is a greater rate increase than experienced at the national level, where an increase of only 0.5 percent

was experienced during the same period. Methodology used in the FAA Aerospace Forecasts 2021-2041 indicate national local GA operations will slightly increase at a CAGR of 0.6 percent. **Figure B-6** and **Table B-24** show the local GA forecasts.

Scenario One. This scenario uses linear projection by applying the expected City of Stillwater MSA population growth rate from 2020 to 2040 to forecast itinerant GA Operations at SWO. This results in a CAGR of 0.5 percent. Population resulted in a correlation coefficient with local GA operations of 0.67, which is not a high correlation factor. This scenario is eliminated from consideration.

Scenario Two. This scenario uses trend projection by applying the growth rate established from 2010 through 2020 to future local GA operations. This results in a rather high 20-year CAGR of 3.0 percent.

Scenario Three. This scenario uses market share to forecast the local GA operations at SWO as a function of the nationwide local GA operations. SWO's 2020 national market share of local GA operations was 0.2583 percent. Application of this percentage to projections contained in the FAA Aerospace Forecasts 2021-2041 results in a CAGR of 0.8 percent.

Scenario Four. This scenario also uses market share to forecast local GA operations but uses SWO's market share of local GA operations historically occurring in Oklahoma. The 2020 market share of 6.056 percent is increased during the planning period to 7.7 percent – a return to a pre-pandemic high experienced in 2018. The presence of the OSU Flight Center and other flight training operations at SWO indicates that a higher growth rate in flight training will be expected at SWO than the rest of Oklahoma. Application of the increasing ratio results in a 20-year CAGR of 1.6 percent.

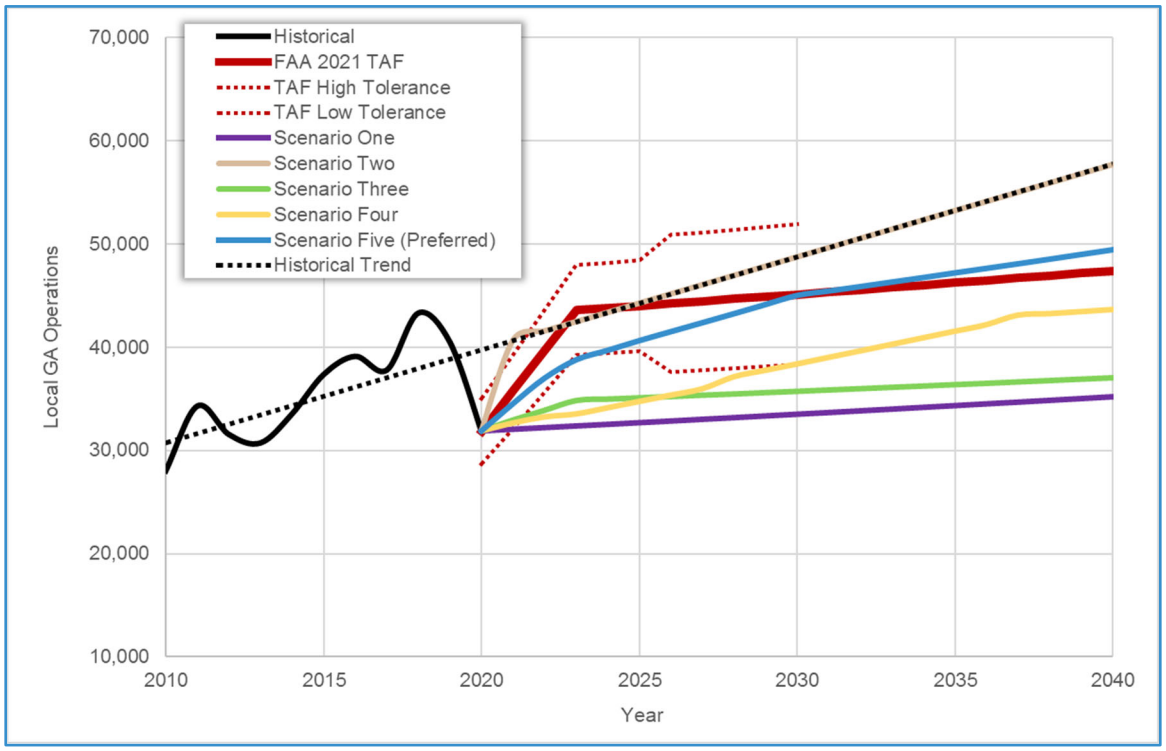
Scenario Five. This scenario reflects the continuation of the OSU Flight Center monthly training exceeding normal operations for the next two years, thereafter, slowly returning to a more normal training regimen once the unmet demand is satisfied. The scenario also applies the expected increase of student enrollment in the Flight Center pilot program from 300 to 400 by 2030. After that, a modest increase 0.6 percent growth rate is applied which corresponds to the local GA operations projected to occur nationally in the FAA Aerospace Forecast 2021-2041. The scenario also applies the growth rates projected in the TAF for SWO local operations in each of the five-year time periods to the non-OSU Flight Center estimated flight training operations (i.e., 6.7 percent during the first five years, 3.5 percent during the next five years, 2.5 percent during the five years after that, and 2.0 percent during the final five years). When combined, this scenario results in an overall CAGR of 2.2 percent.

Table B-24: Local GA Forecasts, 2020-2040

Year	2020 TAF	Scenario One (Population)	Scenario Two (2010-2020 Trend)	Scenario Three (2020 Market Share)	Scenario Four (Increasing Market Share)	Scenario Five (Local Conditions - Preferred)
2020[1]	31,858	31,858	31,858	31,858	31,858	31,858
2021[2]	35,765	32,020	40,670	32,920	32,630	34,500
2022[2]	39,673	32,180	41,570	33,870	33,220	36,970
2023[2]	43,580	32,340	42,470	34,820	33,510	38,750
2024[2]	43,797	32,500	43,370	34,960	34,110	39,670
2025[2]	44,015	32,660	44,270	35,090	34,730	40,610
2030[2]	45,122	33,490	48,760	35,720	38,380	44,990
2035[2]	46,256	34,330	53,250	36,370	41,560	47,180
2040[2]	47,419	35,200	57,740	37,040	43,670	49,420
CAGR	**2.0%**	**0.5%**	**3.0%**	**0.8%**	**1.6%**	**2.2%**

Sources: [1] Actual.
[2] Mead & Hunt projections.

Figure B-6: Local GA Forecasts, 2010-2040



Preferred Forecast Scenario and Comparison to TAF

Scenario Five is the preferred forecast for local GA operations at SWO. No strong correlations exist with any national aviation variables, nor were any correlations found to exist with local or national socioeconomic variables. The presence of the OSU Flight Center as well as the other flight training companies at SWO supports strong growth in local GA aircraft operations. Fulfilling unmet demand created by limited flight

training opportunities during 2020 and the expected gradual increase in student enrollment at the OSU Flight Center by over 30 percent is cause for expected substantial increase during the initial 10-year forecast period. Strong growth shown in local GA aircraft operations at SWO in the TAF further supports the expected growth shown in the preferred forecast.

Table B-25 provides a side-by-side comparison of the preferred local GA aircraft operations forecast with the 2020 TAF. As can be seen, the preferred forecasts vary from the TAF by less than 8 percent in initial five-year period and less than 1 percent in the 10-year period.

Table B-25: Local GA Aircraft Operations Forecasts – TAF Comparison, 2020-2040

Fiscal Year	Preferred Forecast	2020 TAF	Difference	Percent Difference
2020[1]	31,858	31,858	0	0.0%
2025[2]	40,610	44,015	-3,405	-7.7%
2030[2]	44,990	45,122	-132	-0.3%
2035[2]	47,180	46,256	924	2.0%
2040[2]	49,420	47,419	2,001	4.2%
CAGR	**2.2%**	**2.0%**	**N/A**	**N/A**

Sources: [1] FAA TAF, May 2021.
[2] Mead & Hunt projections.

Military Aircraft Operations

As a percentage of annual aircraft operations, the number of military operations at SWO has historically been relatively insignificant. No factors have been identified that would significantly increase the number of military operations in the future. Therefore, military aircraft operations are projected to remain at the approximate 2020 level of 3,200 throughout the forecast period.

Aircraft Fleet Mix

A further assessment of the forecasts involves the individual and collective use of SWO by various aircraft types. Knowledge of the aircraft types expected to use SWO assists in determining the amount and type of storage facilities needed to meet the aviation demand.

Data for FY 2020 comes from applying data derived from the FAA's TFMSC. TFMSC data has a very high confidence level for recording virtually all commercial service aircraft as well as GA business jet and turboprop aircraft operations. However, since TFMSC only records aircraft filing IFR flight plans, it does not record touch-and-go operations and most single and multi-engine piston aircraft operations. Therefore, some degree of estimation, as presented in the sources section of **Table B-26** is applied to arrive at these types of aircraft operations.

Methodology

Table B-26 depicts the approximate level of use by aircraft type projected to use SWO throughout the 20-year planning period. As presented earlier, it is anticipated that 50-seat regional jet aircraft such as the CRJ 200

and ERJ 145 will be phased out of service by 2031. At SWO, they are anticipated to be replaced by 76-seat ERJ 175 aircraft. Since these aircraft have more than 60 seats they are classified as narrow body air carrier aircraft in the table and thus explain the future increases. It is anticipated that some 50-seat regional jets will continue to be used to transport university athletic teams via charter so they will remain operational at SWO throughout the planning period.

The table reflects a growing percentage of turbine-powered, multi-engine GA aircraft anticipated to operate at SWO, and a decreasing percentage of both single and multi-engine piston-powered aircraft. This is a national GA trend where smaller piston-power aircraft are being flown less due to several factors including, but not limited to, the cost of owning and flying personal aircraft (which tend to be piston-powered) and turbine-powered aircraft being used more for business purposes increasing as a percentage of total operations. The decreases in traditional single engine, piston-powered aircraft will be offset somewhat by the expected growth in light sport or experimental aircraft and helicopter operations.

Table B-26: Summary of Total Operations by Aircraft Type, 2020-2040

Aircraft Type	2020	2025	2030	2035	2040
Commercial Service	**1,920[1]**	**2,284**	**2,284**	**2,180**	**2,284**
Air Carrier	30[1]	348	1,180	1,388	1,492
Narrow Body Jet	*30[2]*	*348*	*1,180*	*1,388*	*1,492*
Air Taxi/Commuter	1,890[1]	1,936	1,104	792	792
Regional Jet	*1,312[2]*	*1,310*	*532*	*200*	*140*
Air Cargo	*92[2]*	*92*	*92*	*92*	*92*
General Aviation Types	*486[3]*	*534*	*480*	*500*	*560*
General Aviation	**57,512[1]**	**71,870**	**79,750**	**85,820**	**91,560**
Single Engine Piston	51,277[5]	64,064	70,750	75,934	81,022
Multi-Engine Piston	4,911[4]	6,146	6,794	7,160	7,416
Turboprop	623[2]	790	1,010	1,300	1,460
Jet	697[2]	860	1,116	1,332	1,552
Helicopter[2]	4	10	80	94	110
Military	**3,211[1]**	**3,200**	**3,200**	**3,200**	**3,200**
Piston	2,661[6]	2,652	2,652	2,652	2,652
Turboprop	350[2]	350	350	350	350
Jet	192[2]	190	190	190	190
Helicopter	8[2]	8	8	8	8
Total[1]	**62,643[1]**	**77,354**	**85,234**	**91,200**	**97,044**

Sources: [1] FAA TAF, 2021.

[2] TFMSC Direct – Operations obtained directly from TFMSC data.

[3] TFMSC Derived – Operations derived from subtracting the sum of Air Taxi/Commuter regional jet and air cargo operations from total Air Taxi/Commuter operations.

[4] TFMSC Derived – Operations derived from applying the ratio of MEP to all piston operations contained in TFMSC to the remainder of GA operations when GA turboprop, jet and helicopter operations are removed.

[5] TFMSC Derived – Operations derived from subtracting the sum of GA MEP, turboprop, jet, and helicopter operations from total GA operations.

[6] TFMSC Derived – Operations derived from subtracting the sum of Military turboprop, jet, and helicopter operations from total Military operations.

Peak Period Forecasts

Peak forecasts estimate when certain airport facilities will be the busiest. Peak forecasts are used to assess level of service of airfield and terminal facilities and to right-size improvement projects. Improvement projects are not typically designed for the busiest day of the year specifically, as such a design would lead to over-building. The peak period forecasts are based on examining the average day of the busiest month of the year, in accordance with FAA Advisory Circular 150/5070-6B, Change 2.

Methodology

The methodology used to forecast future peaking is based on the historical record; therefore, it is essential that peak forecasts be reevaluated if a change in user or aircraft type occurs. **Table B-27** presents the peak forecasts for enplanements, total passengers, and aircraft operations.

Table B-27: Peak Period Forecasts, 2020-2040

Category	Period	Factor	2020	2025	2030	2035	2040
Enplanements and Deplanements	**Annual**	100%	16,102[1]	26,400	30,230	34,550	39,460
	Peak Month	9.9%	2,850[2]	2,614	2,993	3,420	3,907
	Average Day	3%	95	87	100	114	130
	Peak Hour – Enplanements	51%	48	44	51	58	66
	Peak Hour – Deplanements	49%	45	43	49	56	64
Total Passengers	**Annual**	100%	32,204[2]	52,800	60,460	69,100	78,920
	Peak Month	9.9%	5,592[2]	5,227	5,986	6,841	7, 813
	Peak Day	3%	186	174	200	228	260
	Peak Hour	50%	93	87	100	114	130
Aircraft Operations	**Annual**	100%	62,643[3]	77,354	85,234	91,200	97,044
	Peak Month	13%	8,077[3]	10,056	11,080	11,856	12,616
	Peak Day	3%	269	335	369	395	421
	Peak Hour	11%	30	37	41	43	46

Sources: [1] Actual, FAA TAF, 2021.
[2] Actual, Envoy Airlines, August 2021.
[3] Actual, FAA The Operations Network (OPSNET), 2021.

The peak passenger enplanement and deplanement forecast is determined by the growth in the total number of passengers traveling through SWO and the trends in air carriers transitioning from smaller to larger aircraft. Air carrier records show May has historically been the peak month for enplanements during the non-COVID time frame. This overlaps with the end of school when some university students may be travelling home and the beginning of the summer vacation season when families tend to travel together. October has been the busiest month for aircraft operations five out of the previous 12 Fiscal Years, with September being the peak month in four of the previous 12 Fiscal Years. These two months overlap the peak of the home games during the OSU football season and typically include some of the best flying weather for fans travelling to the games.

Future peaking analysis assumes that peak percentages shown in **Table B-27** will remain the same into the future.

Based Aircraft

The number and type of aircraft to be based at an airport is an important component in developing a plan for future facilities. GA operators are particularly sensitive to both quality and location of the basing facilities. Many factors affect the decision of aircraft owners to base their aircraft at an airport, including:

- Radio communications
- Available facilities and services
- Proximity to home and work
- Airport accessibility
- Basing capacity at nearby airports.

Methodology

Based aircraft at SWO did not exhibit strong historical correlation with any socioeconomic variables considered; the highest correlation coefficient was 0.66 with Stillwater's historical earnings and 0.65 with Stillwater's historical GRP. This seems to be caused by based aircraft only mildly fluctuating over the past decade, ranging between 71 and 75 as reported in the TAF, until increasing drastically to 80 based aircraft in the most recent data provided by SWO staff. For this reason, regression analysis using socioeconomic indicators was eliminated from consideration.

In the absence of correlated data, various methods and assumptions are employed to project the number and composition of SWO's based aircraft fleet. The methods and assumptions applied to the based aircraft include:

- Application of the FAA's Aerospace Forecast, 2021-2041 growth rates for each component of the GA fleet.
- Assumption that SWO will maintain a similar based aircraft market share in Oklahoma.
- Expectation that one helicopter and two "Other" (e.g., light sport or experimental aircraft) will be based at SWO by the end of the planning period.
- Discussions with OSU Flight Center staff regarding their plans for aircraft fleet and student enrollment.
- There is currently a wait list of between 20 to 30 aircraft owners desiring to base their aircraft at SWO if hangar space was available.

Forecast Scenarios

There were five based aircraft forecast scenarios evaluated and presented. They were based on a combination of methods and assumptions presented above and are shown in **Table B-28** and **Figure B-7**.

Scenario One

This scenario uses linear projection by applying SWO's 10-year CAGRs for the individual based aircraft categories to future years. This results in a total based aircraft CAGR of 1.4 percent.

Scenario Two

This scenario uses trend analysis by applying SWO's trend projections for the individual based aircraft categories experienced from 2010 to 2020 to future years. This results in essentially no total based aircraft growth, only reaching the existing level of 80 based aircraft at the end of the forecast period.

Scenario Three

This scenario uses linear projection by applying the growth rate for each individual active GA fleet category contained in the FAA Aerospace Forecast 2021-2041 to the individual based aircraft categories at SWO to forecast future growth. Application of these individual growth rates results in a negative CAGR of 0.6 percent. This scenario is eliminated from consideration.

Scenario Four

This scenario uses market share analysis to forecast the individual categories of based aircraft at SWO as a percentage of nationwide active GA fleet contained in the FAA Aerospace Forecast 2021-2041. Applying SWO's 10-year average market share of each individual component to the individual components forecasts in the FAA Aerospace Forecast also results in a negative CAGR of 1.3 percent. This scenario is also eliminated from consideration.

Scenario Five

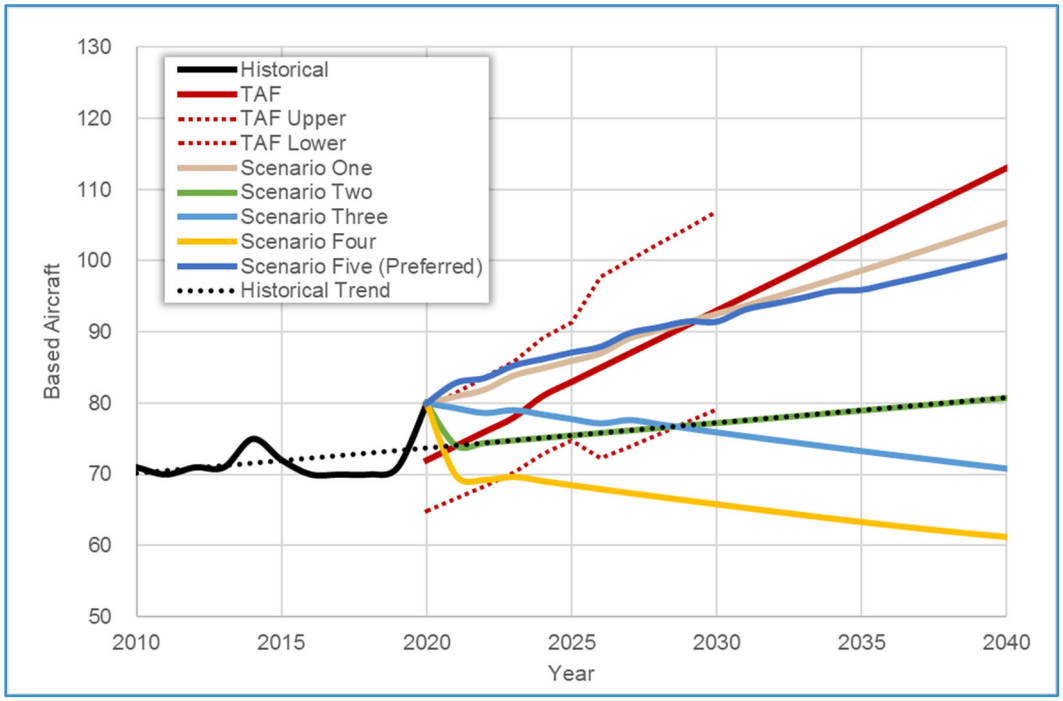
This scenario, a hybrid scenario uses the market share of SWO's based aircraft as a ratio of based aircraft in the State of Oklahoma recorded by the TAF. The 2020 market share experienced by SWO's individual based aircraft categories is applied to the TAF-forecasted State of Oklahoma based aircraft. However, it also applies the expected increase of two additional Piper PA 42 twin engine piston aircraft to the OSU Flight Center's aircraft fleet by the end of 2022. Thereafter, the projected gradual decrease of piston-powered aircraft as presented in the FAA Aerospace Forecast 2021-2041 is applied to the multi-engine piston aircraft expected to be based at SWO. Application of these assumptions results in a CAGR of 1.2 percent.

Table B-28: Based Aircraft Forecasts, 2020-2040

Year	2020 TAF	Scenario One (Historical Growth Rates)	Scenario Two (2010-2020 Trend)	Scenario Three (FAA Aerospace Forecast)	Scenario Four (Average Market Share)	Scenario Five (Local Conditions - Preferred)
2020	72	80[1]	80[1]	80[1]	80[1]	**80[1]**
2021[2]	74	81	74	79	70	**83**
2022[2]	76	82	74	79	69	**84**
2023[2]	78	84	75	79	70	**85**
2024[2]	81	85	75	78	69	**86**
2025[2]	83	86	75	78	68	**87**
2030[2]	93	93	77	76	66	**91**
2035[2]	103	99	79	73	63	**96**
2040[2]	113	105	81	71	61	**101**
CAGR	**2.3%**	**1.4%**	**0.0%**	**-0.6%**	**-1.3%**	**1.2%**

Sources: [1] Actual.
[2] Mead & Hunt projections.

Figure B-7: Based Aircraft Forecasts, 2010-2040



Preferred Forecast Scenario and Comparison to TAF

Scenario Five is the preferred based aircraft forecast at SWO. The FAA Aerospace Forecast 2021-2041 expects nationwide decreases of 0.9 percent in active single engine piston aircraft and 0.4 percent in active multi-engine piston aircraft. Increases are expected in turboprop and jet active aircraft by CAGRs of 0.6 and 2.3 percent, respectively by 2041. Increases are also expected in helicopter and light sport aircraft by CAGRs of 1.4 and 4.0 percent, respectively. While there are no helicopter or aircraft categorized as “Other” currently based at SWO, historically there has been as many as two helicopters based at the Airport and the growing light sport and experimental aircraft market is expected to become more common as they replace a growing percentage of aging single engine piston aircraft. The preferred forecast accounts for the OSU Flight Center adding aircraft to their fleet to accommodate the expected increase in student enrollment.

Table B-29 provides a side-by-side comparison of the preferred based aircraft forecast with the 2020 TAF. As can be seen, the preferred forecast varies from the TAF by 5 percent in the initial five-year period and by less than 2 percent in the 10-year period. This occurs even with the 11 percent variance of the based aircraft recorded in the TAF compared to the actual based aircraft reported by SWO staff.

Table B-29: Based Aircraft Forecasts – TAF Comparison, 2020-2040

Fiscal Year	Preferred Forecast	2020 TAF	Difference	Percent Difference
2020[1]	80	72	8	11.1%
2025[2]	87	83	4	5.0%
2030[2]	91	93	-2	-1.7%
2035[2]	96	103	-7	-6.9%
2040[2]	101	113	-12	-10.9%
CAGR	**1.2%**	**2.3%**	**N/A**	**N/A**

Sources: [1] FAA TAF, May 2021.
[2] Mead & Hunt projections.

Table B-30 shows the preferred based aircraft forecast broken down by aircraft type at SWO. The future aircraft mix is expected to remain proportionally similar to the current based aircraft mix. However, in line with both local and national expectations, growth in helicopter and light sport aircraft will offset the decreases in piston-powered aircraft. Additionally, the presence of the OSU Flight Center and their aircraft fleet mix will offset the nationwide trend of decreased piston-powered aircraft.

Table B-30: Based Aircraft Forecast by Type, 2020-2040

Fiscal Year	Single Engine Piston	Multi-Engine Piston	Jet	Helicopter	Other	Total
2020[1]	72	6	2	0	0	80
2021	73	8	2	0	0	83
2022	74	8	2	0	0	84
2023	74	8	2	0	1	85
2024	75	8	2	0	1	86
2025	76	8	2	0	1	87
2030	80	7	2	1	1	91
2035	84	6	3	1	2	96
2040	88	6	4	1	2	101
CAGR	**1.0%**	**0.0%**	**3.5%**	**N/A**	**N/A**	**1.2%**

Sources: [1] Actual, as reported by SWO staff.

Runway Utilization

Runway utilization is defined by the distribution and frequency of aircraft operations on the runway system. Runway utilization at SWO is based on ATCT personnel observations collected during stakeholder outreach conversations, and to a lesser extent, the direction and wind speed used in the wind coverage analysis presented in **Chapter A – Inventory of Existing Conditions**. **Figure B-8** is a graphical representation of the estimated runway utilization, by percentage of total operations provided by ATCT personnel.

Figure B-8: Runway Utilization

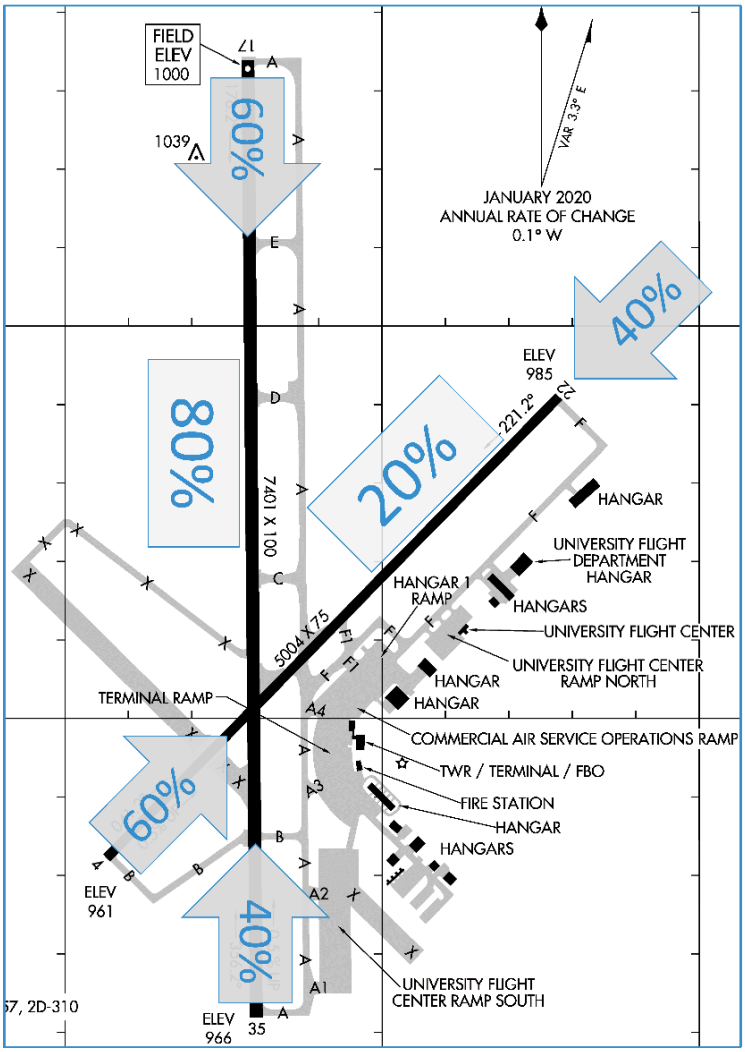


Table B-31 presents the runway utilization by RDC based on total aircraft operations and the wind coverage analysis. Runway 17/35 provides almost 96 percent wind coverage for the 10.5-knot crosswind component during all weather conditions, and almost 98 percent wind coverage for the 13-knot crosswind component. The 10.5-knot crosswind component is considered the maximum crosswind component for small aircraft with RDCs A-I and B-I. The 13-knot crosswind component is considered the maximum crosswind component for aircraft with RDCs A-II and B-II, which includes turboprops and small jets. ATCT personnel estimate that only 20 percent of single engine aircraft use Runway 4/22; the remainder of all other aircraft types use Runway 17/35. However, based on the wind coverage analysis, a small percentage of multi-engine piston, turboprop, and small business jet aircraft would need to use Runway 4/22 during excessive crosswind conditions. Therefore, an approximate four percent of multi-engine piston aircraft and two percent of turboprop and small business jet aircraft are estimated to use Runway 4/22.

Table B-31: Runway Utilization by Runway, 2020-2040

Runway	2020	2025	2030	2035	2040
Runway 17/35	**50,280**	**61,884**	**68,188**	**72,960**	**77,634**
Runway 17	30,168	37,130	40,912	43,776	46,580
Runway 35	20,112	24,754	27,276	29,184	31,054
Runway4/22	**12,363**	**15,470**	**17,046**	**18,240**	**19,410**
Runway 4	7,418	9,282	10,226	10,944	11,646
Runway 22	4,945	6,188	6,820	7,296	7,764
Total[1]	**62,643**	**77,354**	**85,234**	**91,220**	**97,044**

Sources: [1] FAA TAF, 2021.

[2] Percentage estimates provided by SWO ATCT personnel and Mead & Hunt calculations based on wind coverage analysis.

Night Operations

Night operations at SWO have been defined as the aircraft activity occurring between 10:00 p.m. and 7:00 a.m. local time. This differs from the definition provided in Title 14 of the Code of Federal Regulations (14 CFR) part 61, which refers to one hour after sunset and ending one hour before sunrise. The reason is the local time matches the definition used in FAA's noise modeling program Aviation Environmental Design Tool (AEDT). When aircraft noise modelling is performed, aircraft operations occurring between 10:00 p.m. and 7:00 a.m. are deemed more intrusive. In fact, AEDT penalizes the noise energy from aircraft operations at night by ten decibels to compensate for the perceived greater disturbance on sleep habits.

Since SWO's ATCT is closed between the hours of 10:00 p.m. and 8:00 a.m. local time, no official aircraft activity is recorded during these hours. However, the second daily Envoy Airlines flight into SWO has a scheduled arrival at 11:59 p.m., remains overnight, and has a scheduled departure time of 6:20 a.m. Additionally, ATCT and SWO staff estimate that 15 percent of total GA operations at SWO occur during nighttime hours. Therefore, based on this information, the estimated number of night operations for this Master Plan are provided in **Table B-32**. As the shift from commercial service 50-seat regional jets to 76-seat narrow body jets fully occurs by 2035 at SWO, the need for twice daily flights throughout an average week decreases. Therefore, the annual nighttime commercial service aircraft operations decrease throughout the planning period.

Table B-32: Estimated Existing and Forecast Night Operations, 2020-2040

Aircraft Type	2020[1]	2025[2]	2030[2]	2035[2]	2040[2]
Commercial Service	728	728	570	520	520
Itinerant GA	640	780	870	970	1,050
Local GA	3,980	5,080	5,620	5,900	6,180
Total[1]	**5,350**	**6,590**	**7,060**	**7,390**	**7,750**

Sources: [1] Actual, based on Envoy Airlines current schedule and estimate of itinerant and local GA operations.

[2] Mead & Hunt.

Runway Design Code/Critical Aircraft Analysis

The critical aircraft, often referred to as the design aircraft is defined in FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination* as the most demanding type or grouping of aircraft with similar

characteristics, that make regular use of an airport. Regular use is defined as 500 annual operations, including itinerant and local, but excluding touch-and-go operations. The 500 annual operations regular use threshold is not a cap or limit on aircraft operations, but rather a planning metric for consideration of the potential need to upgrade airport facilities.

Critical aircraft type is defined by the RDC, which consists of the Aircraft Approach Category (AAC) and the Airport Design Group (ADG). The AAC, depicted by a letter relates to the aircraft approach speed. The ADG, depicted by a Roman numeral relates to the aircraft wingspan and tail height. The FAA's specified criteria for AAC and ADG, as referenced in AC 150/5300-13A are presented in **Table B-33** and **Table B-34**.

Table B-33: Aircraft Approach Category (AAC)

AAC	V_{Ref}/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

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

Table B-34: Airplane Design Group (ADG)

AAC	Wingspan	Tail Height
I	Less than 49'	Less than 20'
II	Greater than 49' but less than 79'	Greater than 20' but less than 30'
III	Greater than 79' but less than 118'	Greater than 30' but less than 45'
IV	Greater than 118' but less than 171'	Greater than 45' but less than 60'
V	Greater than 171' but less than 214'	Greater than 60' but less than 66'
VI	Greater than 214' but less than 262'	Greater than 66' but less than 80'

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

Critical Aircraft by Runway

To determine the SWO critical aircraft, existing operations by aircraft type are derived from the TFMSC data. Forecasts of commercial service critical aircraft operations are based on commercial service aircraft fleet changes through airline orders currently being fulfilled or yet to be delivered. GA critical aircraft forecasts are based on the changing use patterns outlined in the aircraft fleet mix section presented earlier. Military aircraft are not considered for critical aircraft consideration because the critical aircraft designation is a key component in FAA decision making for project justification.

Runway 17/35

Table B-35 presents the existing and forecasted operations occurring on Runway 17/35 broken down by AAC and ADG. In 2020, the Embraer ERJ 140 had the most operations of any single commercial service aircraft with 621. The Embraer ERJ 145/145 EX followed closely with 541 operations. Both aircraft have a RDC of C-II. However, Envoy Airlines has retired its ERJ 140 aircraft and by June 2021, only 32 operations were recorded at SWO. By comparison, the ERJ 145/145 EX recorded 407 operations by June 2021. This indicates

the existing critical aircraft for Runway 17/35 is the ERJ 145 and the existing RDC is C-II. The 50-seat ERJ 145s flown by Envoy Airlines are expected to be phased out of service during the planning period, replaced by 76-seat ERJ 175 aircraft. This aircraft has a RDC of C-III. Therefore, for Runway 17/35 the ERJ 175 is the future critical aircraft and the future RDC is C-III. **Figure B-9** shows the existing and future critical aircraft for Runway 17/35.

Table B-35: Summary of Runway 17/35 Operations Forecasts by RDC, 2020-2040

Typical Aircraft	RDC	2020[1]	2025	2030	2035	2040
Cessna 172, Cirrus SR-20	A-I	45,732	56,340	61,270	65,490	69,634
Pilatus PC-12	A-II	115	146	154	164	176
Beech King Air 90, Raytheon Beechjet 400	B-I	964	1,196	1,326	1,444	1,550
Cessna 208 Caravan, Beech 200 Super King Air	B-II	520	650	732	780	864
Saab 2000	B-III	6	10	10	12	14
Bombardier Learjet 60, Hawker 800	C-I	36	48	64	72	96
Embraer ERJ 140/145, Bombardier Challenger 600/601/604	C-II	1,242	1,466	1,704	1,830	2,012
ERJ 175, Boeing 737-400	C-III	18	370	1,202	1,414	1,522
Lockheed C-130	C-IV	4	6	8	8	8
Northrop T-38	D-I	2	4	4	4	4
Gulfstream G IV/G400	D-II	2	2	2	4	4
Boeing 737-900, Gulfstream G V/G500	D-III	22	32	34	38	40
Total[2]		**48,662**	**60,270**	**66,510**	**71,260**	**75,924**

Sources: [1] Mead & Hunt estimates using FAA TFMSC, 2021 and runway utilization analysis.
[2] Military aircraft and helicopter operations not included.

Figure B-9: Existing and Future Runway 17/35 Critical Aircraft

Runway 4/22

Applying the runway utilization analysis presented earlier to the TFMSC data, **Table B-36** shows the existing and forecasts operations estimated to occur on Runway 4/22 broken down by AAC and ADG. In 2020, the

Cessna 172 had the most operations of any single aircraft with an estimated 7,095. The Cirrus SR-20 had the next highest number of operations with an estimated 2,522 in 2020. Both aircraft have a RDC of A-I and are used extensively by the OSU Flight Center. The OSU Flight Center has plans to increase its SR-20 fleet by an additional six aircraft in 2022. This indicates the existing and future critical aircraft is the Cessna 172 and the existing and future RDC is A-I. **Figure B-10** shows the existing and future critical aircraft for Runway 4/22.

Table B-36: Summary of Runway 4/22 Operations Forecasts by RDC, 2020-2040

Typical Aircraft	RDC	2020[1]	2025	2030	2035	2040
Cessna 172, Cirrus SR-20	A-I	10,723	13,810	15,366	16,538	17,672
Pilatus PC-12	A-II	5	8	12	20	32
Beech King Air 90, Raytheon Beechjet 400	B-I	28	38	50	58	70
Cessna 208 Caravan, Beech 200 Super King Air	B-II	10	16	20	26	36
Total[2]		**10,766**	**13,872**	**15,448**	**16,642**	**17,810**

Sources: [1] Mead & Hunt estimates using FAA TFMSC, 2021 and runway utilization analysis.
[2] Military aircraft and helicopter operations not included.

Figure B-10: Existing and Future Runway 4/22 Critical Aircraft

SUMMARY

A summary of aviation activity forecasts prepared for SWO is provided in **Table B-37**. This information is used as a background to develop the remaining portions of the Master Plan (analyze facility requirements, aid development of alternatives, and guide the preparation of the plan and program of future airport facilities). In other words, the aviation activity forecasts are the foundation from which plans will be developed and implementation decisions will be made.

Table B-37: Summary of Aviation Activity Forecasts, 2020-2040

Activity	2020	2025[5]	2030[5]	2035[5]	2040[5]
Enplanements					
Total	**17,410[1]**	**28,000**	**31,830**	**36,150**	**41,060**
Operations					
Commercial Service	***1,920***	***2,284***	***2,284***	***2,180***	***2,284***
Air Carrier	30[1]	348	1,180	1,284	1,492
Narrow Body Jets	*30[2]*	*348*	*1,180*	*1,284*	*1,492*
Air Taxi/Commuter	1,890[1]	1,936	1,000	792	792
Regional Jets	*1,312[2]*	*1,310*	*532*	*200*	*140*
Air Cargo	*92[2]*	*92*	*92*	*92*	*92*
GA Types	*486[3]*	*534*	*480*	*500*	*560*
General Aviation	***57,512[1]***	***71,870***	***79,750***	***85,820***	***91,560***
Itinerant	25,654[1]	31,260	34,760	38,640	42,140
Local	31,858[1]	40,610	44,990	47,180	49,420
Military	***3,211[1]***	***3,200***	***3,200***	***3,200***	***3,200***
Itinerant	1,314[1]	1,310	1,310	1,310	1,310
Local	1,897[1]	1,890	1,890	1,890	1,890
Total[1]	**62,643[1]**	**77,354**	**85,234**	**91,200**	**97,044**
Based Aircraft					
Total	**80[4]**	**87**	**91**	**96**	**101**
Critical Aircraft					
Runway 17/35	ERJ 145	ERJ 145	ERJ 175	ERJ 175	ERJ 175
Runway 4/22	Cessna 172	Cessna 172	Cessna 172	Cessna 172	Cessna 172

Sources: [1] FAA TAF, 2021.

[2] TFMSC Direct – Operations obtained directly from TFMSC data.

[3] TFMSC Derived – Operations derived from subtracting the sum of Air Taxi/Commuter regional jet and air cargo operations from total Air Taxi/Commuter operations.

[4] SWO staff.

[5] Mead & Hunt projections.

FORECAST APPROVAL

According to FAA language contained in Review and Approval of Aviation Forecasts, regional airports division offices or airports district offices are responsible for aviation forecast approvals at local airports. As stated previously, airport master plan forecasts that are consistent with the FAA's TAF (i.e., the airport master plan forecast differs by less than 10 percent in the first 5 years and differs by less than 15 percent in the 10-year forecast period) do not need to be coordinated with FAA headquarters (APP-400, APO-110). As noted in **Table B-38**, the forecasts estimated for this Master Plan are within the TAF tolerances during the five- and 10-year forecast periods. The actual FAA templates for **Table B-38** and **Table B-39** have been completed and are presented for reference in **Appendix Three**. The FAA forecast approval letter is also contained in **Appendix Three**.

Table B-38: Summary of Master Plan and TAF Comparison

	Year	Master Plan Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base Year	2020	17,410	17,410	0%
Base Year + 5 Years	2025	28,000	28,964	-3%
Base Year + 10 Years	2030	31,830	28,964	10%
Base Year + 15 Years	2035	36,150	28,964	25%
Commercial Operations				
Base Year	2020	1,920	1,920	0%
Base Year + 5 Years	2025	2,284	2,517	-9%
Base Year + 10 Years	2030	2,284	2,645	-14%
Base Year + 15 Years	2035	2,180	2,776	-21%
Total Operations				
Base Year	2020	62,643	62,643	0%
Base Year + 5 Years	2025	77,354	80,967	-4%
Base Year + 10 Years	2030	85,234	84,121	1%
Base Year + 15 Years	2035	91,200	87,423	4%

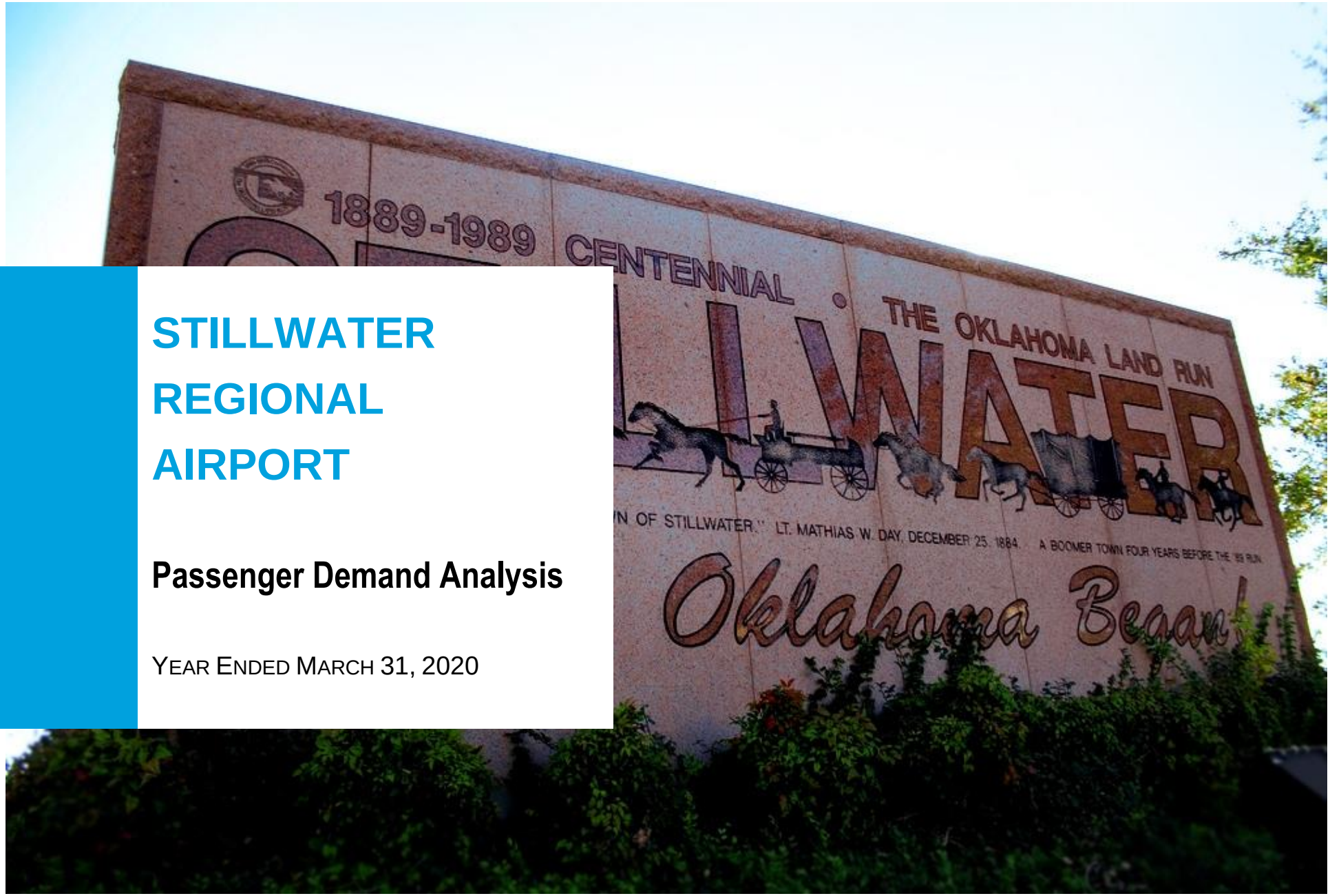
Source: Mead & Hunt.

Table B-39: Summary of Airport Planning Forecasts

Activity Forecasts						Average Annual Compound Growth Rate			
	Base Year (2020)	Base Yr. + 1 Yr. (2021)	Base Yr. +5 Yrs. (2025)	Base Yr. +10 Yrs. (2030	Base Yr. + 15 Yrs. (2035)	Base Yr. to + 1 Yr.	Base Yr. to + 5 Yrs	Base Yr. to + 10 Yrs	Base Yr. to + 15 Yrs.
Passenger Enplanements									
Air Carrier	1,308	1,600	1,600	1,600	1,600	22.3%	4.1%	2.0%	1.4%
Commuter	16,102	13,900	26,400	30,230	34,550	-13.7%	10.4%	6.5%	5.2%
Total	**17,410**	**15,500**	**28,000**	**31,830**	**36,150**	**-11.0%**	**10.4%**	**6.2%**	**5.0%**
Operations									
Itinerant									
Air Carrier	30	94	348	1,180	1,388	212.0%	63.3%	44.4%	29.1%
Commuter/air taxi	1,890	1,899	1,936	1,104	792	0.5%	0.5%	-5.2%	-5.6%
Total Commercial Operations	**1,920**	**1,993**	**2,284**	**2,284**	**2,180**	**3.8%**	**3.5%**	**1.8%**	**0.9%**
General aviation	25,654	27,980	31,260	34,760	38,640	9.1%	4.0%	3.1%	2.8%
Military	1,314	1,310	1,310	1,310	1,310	-0.3%	-0.1%	0.0%	0.0%
Local									
General aviation	31,858	34,500	40,610	44,990	47,180	8.3%	5.0%	3.5%	2.7%
Military	1,897	1,890	1,890	1,890	1,890	-0.4%	-0.1%	0.0%	0.0%
Total Operations	**62,643**	**67,673**	**77,354**	**85,234**	**91,200**	**8.0%**	**4.3%**	**3.1%**	**2.5%**
Instrument Operations	4,737	5,034	5,643	5,983	6,255	6.3%	3.6%	2.4%	1.9%
Peak Hour Operations	30	31	37	41	43	4.7%	4.5%	3.2%	2.6%
Cargo/mail (enplaned +deplaned tons)	42	43	46	51	51	2.0%	2.0%	2.0%	1.3%
Based Aircraft									
Single Engine (Nonjet)	72	73	76	80	84	1.2%	1.0%	1.0%	1.1%
Multi Engine (Nonjet)	6	8	8	7	6	33.3%	5.9%	1.6%	0.2%
Jet Engine	2	2	2	2	3	0.7%	1.0%	0.9%	2.7%
Helicopter	0	0	0	1	1	N/A	N/A	N/A	N/A
Other	0	0	1	1	1	0.0%	0.0%	0.0%	0.0%
Total	**80**	**83**	**87**	**91**	**96**	**3.6%**	**1.7%**	**1.3%**	**1.2%**
Average aircraft size (seats)									
Air carrier	164	150	85	79	78				
Commuter	46	46	50	48	45				
Average enplaning load factor									
Air carrier	74%	70%	55%	69%	67%				
Commuter	58%	60%	65%	59%	67%				
GA operations per based aircraft	**719**	**754**	**825**	**872**	**895**				

Source: Mead & Hunt.

APPENDIX ONE. Passenger Demand Analysis



STILLWATER REGIONAL AIRPORT

Passenger Demand Analysis

YEAR ENDED MARCH 31, 2020

Mead & Hunt

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INTRODUCTION & METHODOLOGIES

INTRODUCTION

Achieving air service success requires thoroughly understanding the market and the needs of local stakeholders, airlines, and trends impacting the aviation industry. Air service development efforts are most effective when they follow a plan consistent with industry trends, the air service needs of the community and specific strategies of target airlines for additional air service. Stillwater Regional Airport (SWO) is subject to several trends that impact air service efforts, including:

- The years prior to the Coronavirus Disease 2019 (COVID-19) pandemic included major airline consolidation, fleet renewal with larger aircraft and rapid growth by ultra-low-cost carriers.
- The pandemic had an unprecedented worldwide impact on the airline industry. Airlines significantly reduced capacity as passenger demand dropped 90 percent in April 2020.
- Demand has slowly increased, but, in June 2021, capacity from the U.S. to Europe and Asia was still down more than 70 percent, and U.S. domestic capacity was down 14 percent. Even with the capacity reductions, March 2021 airline load factors were 21 points lower than the prior year.
- Prior to the pandemic, the industry was enjoying record profits due to lower fuel prices and less competition. Due to the pandemic, airlines have required financial aid and subsidies, but most have restructured debt and reduced costs to reduce cash burn and position for a return to profitability as demand returns.
- At the end of 2020, one-fourth of the U.S. passenger airline fleet was inactive, but airlines are seeing stronger demand in 2021 as the rate of vaccinations accelerate and the economy improves.
- Incentives for new service continue to be important to airline decision-making.
- Low-cost carriers and ultra-low-cost carriers, as a group, are growing faster than the majors as domestic leisure demand returns faster than business traffic during the pandemic.

With these trends in mind, the responsibility is on airports to monitor their market and be proactive with their air service development efforts, especially when performance issues are noted. When service improvements or new service is

sought, it is important that airports and communities know and understand their market, and the *Passenger Demand Analysis* is a critical tool in helping communities do so.

The ultimate impact on the airline industry from the pandemic is yet to be determined. There will be a long recovery period before the U.S. demand for air travel returns to normal conditions. This study reviews historical trends and demand as it existed through the first quarter of 2020. Assumptions about the pandemic-affected air travel environment have not been incorporated because there is not currently a clear view to where this evolving situation will lead. However, as with every other challenge to industry demand, the industry will rebound and air travel will continue to be a vital and growing element for economic development throughout the U.S. While the evolving environment will create temporary setbacks, the observations and recommendations of this study are still valid and important for long-term air service development.

OBJECTIVES

The objective of the *Passenger Demand Analysis* is to develop information on the travel patterns of airline passengers who reside in the SWO catchment area. The report provides an understanding of the SWO situation and formulates strategies for improvement. This analysis includes an estimate of total airline passengers in the catchment area and related destinations as well as an assessment of the air service situation at SWO.

METHODOLOGY

The *Passenger Demand Analysis* combines Airline Reporting Corporation (ARC) ticketed data and U.S. Department of Transportation (DOT) airline data to provide a comprehensive overview of the air travel market. For the purposes of this study, ARC data includes tickets purchased through travel agencies in the SWO catchment area (**Exhibit 3.1**, page 5) as well as tickets purchased via online travel agencies by passengers in the SWO catchment area. It does not capture tickets issued directly by airline web sites (e.g., www.aa.com, www.united.com) or directly through airline reservation offices. The data used include tickets for the zip codes in the catchment area, NOT all tickets. As a result, ARC data represents a sample to measure the air travel habits of catchment area air travelers. Data for travel agencies located within the catchment area is reported by the zip code of the travel agency. Online travel agency data (e.g. Expedia, Orbitz, and Travelocity) is reported by the customer zip code used to purchase the ticket. Although limitations exist, ARC data accurately portrays the airline ticket purchasing habits of a large cross-section of catchment area travelers. A total of 7,272 ARC tickets for the year ended March 31, 2020, were used in this analysis. Adjustments were made for Allegiant Air, Frontier Airlines and Southwest Airlines since they have limited ARC representation.

EXECUTIVE SUMMARY

DATA SOURCE/ CATCHMENT AREA

The *Passenger Demand Analysis* includes 7,272 ARC tickets from the SWO catchment area for the year ended March 31, 2020. The catchment area has an estimated population of 250,782 in 2020 and 60 zip codes. In addition to ARC data, Diio Mi origin and destination data and schedule data is used throughout the report.

DEPARTURES AND AVAILABLE SEATS

For the year ended March 31, 2020, SWO had service by one airline, American Airlines, to one hub/destination, Dallas-Fort Worth International Airport (DFW). SWO had 875 scheduled departures and 39,550 seats for the year ended March 31, 2020, with the peak month for seats in May.

AIRPORT USE

Fifteen percent of catchment area travelers used SWO, while 54 percent diverted to Oklahoma City's Will Rogers World Airport (OKC), 19 percent to Tulsa International Airport (TUL), 6 percent to DFW and 6 percent to Wichita Dwight D. Eisenhower National Airport (ICT).

In a comparison of domestic versus international itineraries, 15 percent of domestic travelers and 14 percent of international travelers used SWO. OKC served 55 percent of domestic and 47 percent of international travelers, while TUL served 19 percent of domestic and 14 percent of international travelers. DFW served 5 percent of domestic and 21 percent of international catchment area travelers. ICT served 6 percent of domestic and 4 percent of international travelers. Compared to the study completed for the year ended December 31, 2018, SWO's retention improved 1 percent overall, as the domestic retention increased slightly and the international retention decreased slightly.

TRUE MARKET

SWO's total air service market, called the true market, is estimated at 351,291 annual origin and destination passengers. Domestic travelers accounted for 318,455 of the total true market (91 percent). International travelers made up the remaining 32,836 passengers (9 percent). Compared to the study completed for the year ended December 31, 2018, the total true market increased 3 percent, with the domestic true market increasing 2 percent and the international true market increasing 12 percent.

DESTINATIONS

Forty-eight percent of travelers were destined to or from one of the top 25 markets. Denver was the number one destination with 4 percent of passengers. SWO retained only 5 percent of passengers to/from Denver. The next largest markets were Orlando-International, Atlanta, New York-LaGuardia and Seattle, with retention of 15, 10, 15 and 9 percent, respectively. Four of the top 25 markets had retention rates greater than 20 percent. Two markets had retention rates lower than 10 percent.

REGIONAL DISTRIBUTION

Twenty-five percent of travelers were destined to the Southeast region, followed by 14 percent to the West region. Travel to the Southwest region was the third highest. SWO's highest retention occurred in the Southwest region at 25 percent and the West region at 17 percent. The lowest retention occurred to the Northwest region (9 percent) and Alaska (5 percent). Of the international travelers, the top three international regions were Mexico and Central America, Europe, and Asia with the highest SWO retention to Asia (20 percent) and the lowest retention to Mexico and Central America, South America, and the Caribbean, each with retention of 11 percent.

AIRLINES USED

As the only service provider at SWO, American had the largest share of flown passengers based on U.S. DOT data at SWO. Airline share of diverting passengers were estimated using an approximation of carrier share with ARC data. An adjustment was made for Allegiant Air, Frontier Airlines and Southwest Airlines. Carrier shares of diverting SWO catchment area passengers were American with 37 percent, United Airlines with 24 percent, Southwest with 17 percent and Delta Air Lines with 16 percent. Alaska Airlines, Frontier Airlines and Allegiant each had a share of 2 percent or less while other various airlines served 2 percent.

PASSENGER ACTIVITY

Beginning with the initiation of service in the year ended March 31, 2017, SWO's passengers have increased each year since the first year, increasing 4.8 percent from 2019 to 2020. OKC and TUL had declining passengers while DFW and ICT passengers increased by less than 1 percent over the same period.

DOMESTIC AIRFARES

SWO's overall average domestic fare for the year ended March 31, 2020, was $209, $25 higher than OKC, $23 higher than TUL, $15 higher than ICT and $19 higher than DFW. In individual markets, SWO had a higher fare than the highest fare at all of the competing airports in 14 of the top 25 markets. The highest fare difference compared to the highest fare at competing airports (greater than $50) was in the Denver, Phoenix-Sky Harbor and Portland markets.

AVERAGE FARE TREND

Overall from the year ended March 31, 2017 to 2020, average domestic fares increased at a CAGR of 3.3 percent at SWO, below the increase for DFW of 4.4 percent and above the increase for ICT of 0.7 percent. OKC's and TUL's fares decreased at CAGRs of 1.7 and 1.2 percent, respectively. In the latest year-ended period, SWO's fare differential compared to each of the competing airports decreased. The fare differential decreased by $5 compared to OKC, $6 compared to TUL, $3 compared to ICT and $8 compared to DFW.

NONSTOP SERVICE

For the year ended March 31, 2020, SWO had nonstop service to one of the top 25 catchment area destinations with an average of 17 weekly departures and one destination overall, DFW. OKC had service to 18 of the top 25 markets with an average of 412 weekly roundtrips, while TUL had service to 12 of the top 25 destinations with 295 weekly frequencies. DFW had service to 24 of the top 25 destinations and 259 total destinations. ICT had service to nine top 25 destinations with 215 weekly frequencies on average.

AIR SERVICE OPPORTUNITIES

SWO is one of the few communities in the U.S. that had no commercial service since deregulation and was able to successfully recruit traditional, legacy service. SWO needs to continue to concentrate on improving passenger levels on its flights, with load factors approximating 71 percent for the 12-months ended March 31, 2020. While this is above many peer markets at DFW, it is substantially below the industry and American averages. The revenue per available seat mile (RASM) for SWO also tends to be below many of its peer markets due to lower average fares. SWO should work with American to achieve average fares that are a consistent $30 to $40 one-way premium over what the fares for American are at OKC and TUL.

As SWO continues to recover post-pandemic, additional flights or capacity through use of larger aircraft are potential opportunities. In the near term, it is unlikely that SWO will be able to add service to a new hub either on American or a different airline until SWO is able to consistently have a RASM that is on par or above peer markets. Once RASM improves, new service to a new hub such as Chicago O'Hare International Airport on American or new service on United Airlines to Denver is possible.

AIRPORT USE

To understand airport use, it is important to understand the relative size of the catchment area, current air service and passenger activity. SWO's use was determined using year ended March 31, 2020, ARC data for the zip codes from the catchment area.

AIRPORT CATCHMENT AREA

An airport catchment area, or service area, is a geographic area surrounding an airport where it can reasonably expect to draw passenger traffic and is representative of the local market. The catchment area contains the population of travelers who should use SWO considering the drive time from the catchment area to competing airports. This population of travelers is SWO's focus market for air service improvements and represents the majority of travelers using the local airport. **Exhibit 3.1** identifies the SWO catchment area. It is comprised of 60 zip codes within the U.S. with a population of approximately 250,782 in 2020[1].

EXHIBIT 3.1 SWO CATCHMENT AREA

[1] *Source: U.S. Census Bureau, Woods & Poole Economics, Inc.*

AIR SERVICE

Table 3.1 provides SWO's departures and seats by month for the year ended March 31, 2020. One airline, American Airlines, served SWO to one destination, DFW. There were 875 scheduled departures for the 12-month period with two to three daily departures and 39,550 annual seats, with the peak month for seats in May.

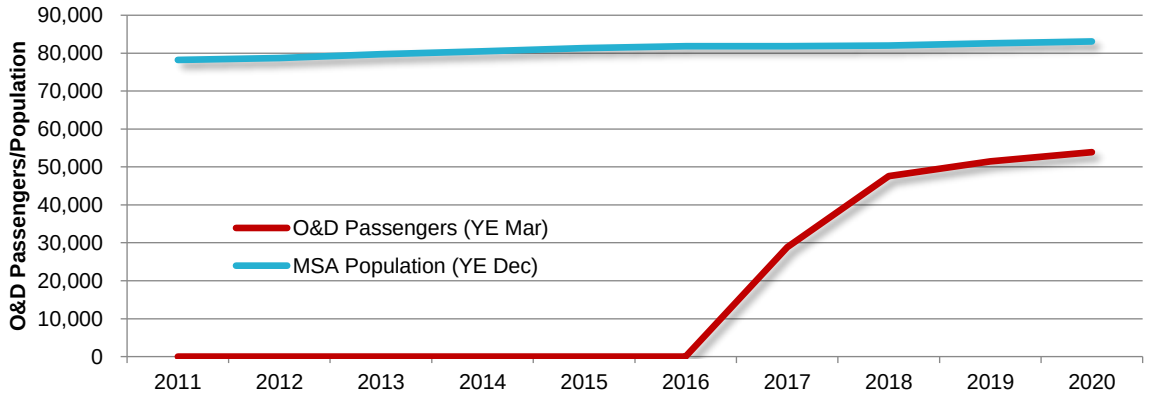
TABLE 3.1 DEPARTURES AND SEATS BY AIRLINE AND DESTINATION

DESTINATION	MARKETING CARRIER	CY 2019									CY 2020		
		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Dallas, TX (DFW)	American	60	87	86	86	85	79	78	69	68	59	56	62
Total Departures		**60**	**87**	**86**	**86**	**85**	**79**	**78**	**69**	**68**	**59**	**56**	**62**
Total Seats		**2,640**	**3,828**	**3,784**	**3,790**	**3,740**	**3,632**	**3,618**	**3,264**	**3,232**	**2,764**	**2,530**	**2,728**

PASSENGER AND POPULATION TRENDS

Exhibit 3.2[2] plots passenger and population trends from 2011 to 2020. The Stillwater, Oklahoma, Micropolitan Statistical Area (Micro) was used for the growth trend of the SWO catchment area population. Since the initiation of commercial air service in the year ended March 31, 2017, passengers have grown each year, with a 4.8 percent growth rate for the year ended March 31, 2019, to the year ended March 31, 2020, while the population grew only 0.6 percent from calendar year 2019 to 2020.

EXHIBIT 3.2 PASSENGERS AND POPULATION TRENDS



[2] *Source: Diio Mi; Woods & Poole Economics, Inc.*

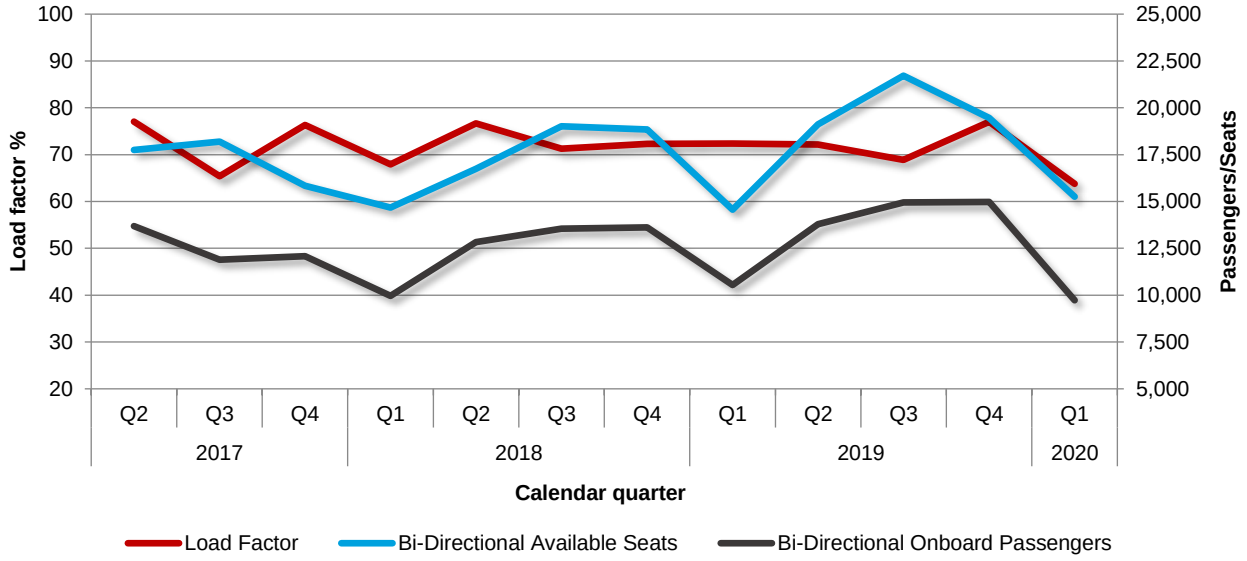
The average load factor decreased in three of the last four quarters year-over-year with an increase in seats in each of the last four quarters.

LOAD FACTOR, AVAILABLE SEATS AND PASSENGERS

Exhibit 3.3 shows SWO's bi-directional available seats, bi-directional onboard passengers and load factors for arrivals and departures by quarter from the second quarter 2017 through the first quarter 2020. The average load factor decreased in three of the last four quarters year-over-year with an increase in seats in each of the last four quarters. The lowest load factor during the 12-quarter period was in the first quarter of 2020 at 64 percent with part of March impacted by the pandemic. The high was in the second quarter of 2017 at 77 percent.

Over the three-year period, available seats were lowest in the first quarter of 2019 at 14,564. The highest number of seats was in the third quarter of 2019 at 21,714. The low for onboard passengers at SWO through the three-year span was in the first quarter of 2020, and the high for onboard passengers was in the fourth quarter of 2019. Onboard passengers increased in three of the last four quarters compared to the previous year.

EXHIBIT 3.3 LOAD FACTOR, AVAILABLE SEATS AND ONBOARD PASSENGERS



SWO retained 15 percent of its catchment area passengers, with OKC being the largest diversionary airport at 54 percent followed by TUL at 19 percent, DFW at 6 percent and ICT at 6 percent.

AIRPORT USE

Exhibit 3.4 shows the airports used by SWO catchment area travelers. An estimated 15 percent of the catchment area's air travelers used SWO for their trips; 54 percent diverted to OKC, 19 percent to TUL, 6 percent to DFW and 6 percent to ICT.

Table 3.2 shows passengers by domestic and international itineraries. Fifteen percent, or 49,398 domestic travelers, and 14 percent, or 4,499 international travelers, used SWO. OKC is the top diversionary airport for domestic passengers, serving 55 percent of domestic travelers, and the highest diversionary airport for international travelers serving 47 percent. TUL served the second highest share of diverting domestic passengers with 19 percent of domestic travelers versus serving 14 percent of international travelers. DFW served 5 percent of domestic and 21 percent of international travelers, while ICT served 6 percent of domestic and 4 percent of international travelers. Compared to the study completed for the year ended December 31, 2018, the total true market increased 3 percent, with the domestic true market increasing 2 percent and the international true market increasing 12 percent. SWO's retention improved 1 percent overall, as the domestic retention increased slightly and the international retention decreased slightly.

EXHIBIT 3.4 AIRPORT USE

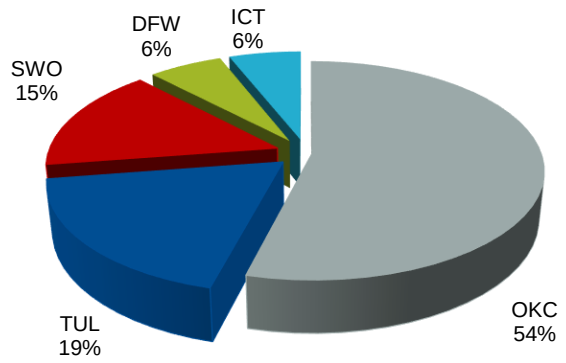


TABLE 3.2 AIRPORT USE - DOMESTIC & INTERNATIONAL COMPARISON

RANK	ORIGINATING AIRPORT	AIRPORT USE	
		PAX	%
Domestic			
1	OKC	174,351	55
2	TUL	60,643	19
3	SWO	49,398	15
4	ICT	19,602	6
5	DFW	14,461	5
Subtotal		**318,455**	**100**
International			
1	OKC	15,307	47
2	DFW	7,049	21
3	TUL	4,631	14
4	SWO	4,499	14
5	ICT	1,350	4
Subtotal		**32,836**	**100**
Domestic and International			
1	OKC	189,658	54
2	TUL	65,274	19
3	SWO	53,897	15
4	DFW	21,510	6
5	ICT	20,952	6
Total		**351,291**	**100**

AIRPORT USE BY COMMUNITY

Airport retention rates by community are an important aspect to understanding the overall SWO catchment area. ARC tickets include local travel agency data which is reported by the agency zip code and online travel agency data which is reported by the passenger zip code. **Table 3.3** shows how retention varies among the local communities within it.

Overall, the Stillwater community generated the highest number of true market passengers, with 131,923 annual passengers, 38 percent of the total. The Enid community generated more than 92,000 passengers while the Ponca City community generated more than 35,000 annual passengers. Communities that generally do not use SWO (0 percent retention) included the Hennessey, Pawhuska, Crescent, Waukomis, Newkirk and Pond Creek communities. The highest retention (greater than 20 percent) was in the Stillwater, Perry, Glencoe and Orlando communities.

TABLE 3.3 AIRPORT USE BY COMMUNITY

COMMUNITY	% AIRPORT USE					TRUE MARKET PASSENGERS
	OKC	TUL	SWO	DFW	ICT	
Stillwater	43	18	31	7	1	131,923
Enid	78	10	3	6	4	92,399
Ponca City	40	25	8	4	22	35,166
Perkins	63	11	17	6	2	9,737
Cushing	43	43	5	8	2	8,992
Perry	53	20	24	4	0	7,356
Blackwell	30	6	10	5	49	4,817
Hennessey	100	0	0	0	0	5,064
Pawhuska	5	91	0	2	1	4,982
Crescent	92	3	0	5	0	3,960
Pawnee	14	43	7	33	3	3,693
Tonkawa	53	12	1	9	24	3,552
Glencoe	38	32	26	5	0	3,438
Waukomis	92	4	0	3	2	2,711
Newkirk	34	11	0	5	50	2,450
Morrison	65	11	7	14	2	2,001
Pond Creek	67	7	0	5	22	1,979
Orlando	73	0	27	0	0	1,728
Other	49	30	5	5	10	25,342
Total	**54**	**19**	**15**	**6**	**6**	**351,291**

TRUE MARKET

The true market portion of the *Passenger Demand Analysis* provides the total number of passengers in the catchment area; specifically, it analyzes the portion of passengers diverting from the SWO catchment area. This section investigates destinations associated with travel to and from the catchment area. In addition, destinations are grouped into geographic regions to further understand the regional flows of catchment area air travelers.

TRUE MARKET ESTIMATE

The airport catchment area (**Exhibit 3.1**, page 5) represents the geographic area from which the airport primarily attracts air travelers. Domestic airlines report origin and destination traffic statistics to the U.S. DOT on a quarterly basis. Used by itself, these traffic statistics do not quantify the total size of an air service market. By combining ARC tickets with passenger data contained in the U.S. DOT airline reports, an estimate of the total air travel market by destination was calculated. The total air travel market is also referred to as the “true market”. Passengers were estimated for domestic and international markets on a destination basis. Adjustments were made to account for Allegiant Air, Frontier Airlines and Southwest Airlines, which are under-represented in ARC data.

The ARC data used in this report includes information on initiated passengers ticketed by local or online travel agencies. This enables the identification of passenger retention and diversion. According to U.S. DOT airline reports for the year ended March 31, 2020, 66 percent of SWO origin and destination passengers initiated air travel from SWO, and the other 34 percent began their trip from another city (e.g. New York, Dallas and Phoenix). For the purposes of this analysis, it is assumed that travel patterns for SWO visitors mirror catchment area passengers.

TOP 25 TRUE MARKET DESTINATIONS

The top 25 destinations for SWO (shown in **Table 4.1**) accounted for 48 percent of the travel to/from the SWO catchment area. Denver was the largest market with 14,798 annual passengers (20.3 passengers daily each way [PDEW]) and accounted for 4 percent of all catchment area travel. Orlando-International, Atlanta, New York-LaGuardia and Seattle made up the remaining top five markets. SWO had nonstop service to one of the top 10 markets, DFW.

TABLE 4.1 TRUE MARKET ESTIMATE - TOP 25 DESTINATIONS

RANK	DESTINATION	SWO REPORTED PAX	DIVERTED PAX	TRUE MARKET	PDEW
1	Denver, CO	810	13,989	14,798	20.3
2	Orlando, FL (MCO)	2,182	11,946	14,128	19.4
3	Atlanta, GA	1,006	8,603	9,608	13.2
4	New York, NY (LGA)	1,408	7,992	9,400	12.9
5	Seattle, WA	801	8,236	9,037	12.4
6	Chicago, IL (ORD)	1,074	7,946	9,020	12.4
7	Dallas, TX (DFW)	4,769	3,624	8,393	11.5
8	Los Angeles, CA	883	7,099	7,982	10.9
9	Houston, TX (IAH)	945	6,750	7,694	10.5
10	Tampa, FL	970	6,037	7,007	9.6
11	Nashville, TN	1,140	5,545	6,685	9.2
12	Washington, DC (DCA)	978	5,473	6,450	8.8
13	New Orleans, LA	684	5,221	5,905	8.1
14	Boston, MA	956	4,726	5,682	7.8
15	Phoenix, AZ (PHX)	624	4,909	5,534	7.6
16	Portland, OR	581	4,711	5,292	7.2
17	Philadelphia, PA	657	4,214	4,871	6.7
18	Las Vegas, NV	737	4,121	4,858	6.7
19	Fort Lauderdale, FL	518	3,982	4,500	6.2
20	Newark, NJ	641	3,660	4,302	5.9
21	San Francisco, CA	933	3,192	4,125	5.7
22	Salt Lake City, UT	510	3,237	3,747	5.1
23	Cancun, Mexico	338	3,334	3,671	5.0
24	San Diego, CA	1,062	2,576	3,638	5.0
25	Minneapolis, MN	702	2,694	3,397	4.7
Top 25 destinations		**25,909**	**143,816**	**169,725**	**232.5**
Total domestic		**49,398**	**269,057**	**318,455**	**436.2**
Total international		**4,499**	**28,337**	**32,836**	**45.0**
All markets		**53,897**	**297,394**	**351,291**	**481.2**

Four markets had retention greater than 20 percent, including DFW, San Francisco, San Diego and Minneapolis, while two markets had retention of less than 10 percent, Denver and Seattle.

TOP 25 DOMESTIC DESTINATIONS

Table 4.2 shows the percentage of passengers by market and originating airport for the top 25 domestic destinations. Fifteen percent of passengers used SWO for travel to the top 25 domestic markets. Overall, the highest retention rates by market (greater than 20 percent) included DFW, San Francisco, San Diego and Minneapolis. The lowest retention rates (less than 10 percent) included Denver and Seattle.

TABLE 4.2 TOP 25 DOMESTIC DESTINATIONS BY ORIGINATING AIRPORT

RANK	DESTINATION	ORIGIN AIRPORT %					TOTAL PAX
		OKC	TUL	SWO	ICT	DFW	
1	Denver, CO	55	30	5	6	4	14,798
2	Orlando, FL (MCO)	54	25	15	4	1	14,128
3	Atlanta, GA	49	19	10	16	5	9,608
4	New York, NY (LGA)	52	20	15	4	10	9,400
5	Seattle, WA	67	10	9	12	2	9,037
6	Chicago, IL (ORD)	57	21	12	5	5	9,020
7	Dallas, TX (DFW)	28	13	57	3	0	8,393
8	Los Angeles, CA	57	23	11	2	7	7,982
9	Houston, TX (IAH)	58	23	12	4	3	7,694
10	Tampa, FL	57	20	14	3	6	7,007
11	Nashville, TN	56	23	17	1	3	6,685
12	Washington, DC (DCA)	76	5	15	2	1	6,450
13	New Orleans, LA	72	2	12	13	2	5,905
14	Boston, MA	47	16	17	2	18	5,682
15	Phoenix, AZ (PHX)	62	18	11	8	1	5,534
16	Portland, OR	55	28	11	5	1	5,292
17	Philadelphia, PA	40	37	13	1	8	4,871
18	Las Vegas, NV	57	20	15	3	4	4,858
19	Fort Lauderdale, FL	55	33	12	1	1	4,500
20	Newark, NJ	62	16	15	1	5	4,302
21	San Francisco, CA	38	10	23	12	18	4,125
22	Salt Lake City, UT	51	25	14	3	7	3,747
23	San Diego, CA	47	9	29	10	5	3,671
24	Minneapolis, MN	31	24	21	21	4	3,638
25	Charlotte-Douglas, NC	56	22	15	7	0	3,397
Top 25 Domestic		**54**	**20**	**15**	**6**	**5**	**169,725**
Total Domestic		**55**	**19**	**15**	**6**	**5**	**318,455**

Top markets for diverting airports were mixed, largely dependent on the type and frequency of available service.

TOP 10 DOMESTIC DESTINATIONS BY ORIGINATING AIRPORT

Table 4.3 shows the top 10 markets when passengers exclusively fly out of SWO as well as the top 10 markets when passengers fly exclusively from the alternate airports. Top markets for each of the diverting airports were mixed, largely dependent on the type of nonstop service available and frequency of service. Only Atlanta appeared in each of the diverting airports top 10 markets.

TABLE 4.3 TOP 10 DOMESTIC DESTINATIONS BY ORIGINATING AIRPORT

RANK	OKC		TUL		SWO	
	DESTINATION	PAX	DESTINATION	PAX	DESTINATION	PAX
1	Denver, CO	8,084	Denver, CO	4,420	Dallas, TX (DFW)	4,769
2	Orlando, FL (MCO)	7,695	Orlando, FL (MCO)	3,494	Orlando, FL (MCO)	2,182
3	Seattle, WA	6,089	Chicago, IL (ORD)	1,933	New York, NY (LGA)	1,408
4	Chicago, IL (ORD)	5,101	New York, NY (LGA)	1,902	Nashville, TN	1,140
5	Washington, DC (DCA)	4,928	Atlanta, GA	1,873	Chicago, IL (ORD)	1,074
6	New York, NY (LGA)	4,853	Los Angeles, CA	1,823	San Diego, CA	1,062
7	Atlanta, GA	4,718	Philadelphia, PA	1,799	Atlanta, GA	1,006
8	Los Angeles, CA	4,589	Houston, TX (IAH)	1,755	Washington, DC (DCA)	978
9	Houston, TX (IAH)	4,455	Nashville, TN	1,555	Tampa, FL	970
10	New Orleans, LA	4,226	Fort Lauderdale, FL	1,463	Austin, TX	965

RANK	ICT		DFW	
	DESTINATION	PAX	DESTINATION	PAX
1	Atlanta, GA	1,542	Boston, MA	1,047
2	Seattle, WA	1,045	New York, NY (LGA)	896
3	Denver, CO	877	San Francisco, CA	760
4	New Orleans, LA	746	Denver, CO	607
5	Minneapolis, MN	702	Los Angeles, CA	556
6	Orlando, FL (MCO)	623	Chicago, IL (ORD)	483
7	Fresno, CA	576	Atlanta, GA	469
8	San Francisco, CA	484	Tampa, FL	431
9	Norfolk, VA	482	Philadelphia, PA	394
10	Phoenix, AZ (PHX)	437	Jacksonville, FL	341

TOP 15 INTERNATIONAL DESTINATIONS

Table 4.4 shows the percentage of passengers for the top 15 international destinations by originating airport. Only the top 15 international destinations are shown due to the smaller market sizes involved with international itineraries and limited available data. SWO retained 13 percent of the catchment area passengers destined for the top 15 international markets.

Cancun, Mexico; London-Heathrow, United Kingdom; and Mexico City, Mexico were the top three international markets. San Jose del Cabo, Mexico and Vancouver, Canada made up the remainder of the top five markets. The highest retention (15 percent or greater) was to Shanghai, China; Beijing, China; Toronto, Canada; Amsterdam, Netherlands; and Mazatlan, Mexico. The lowest retention at less than 10 percent was to Cancun, Mexico; Vancouver, Canada; Dublin, Ireland; Lima, Peru; and Rome, Italy.

TABLE 4.4 TOP 15 INTERNATIONAL DESTINATIONS BY ORIGINATING AIRPORT

RANK	DESTINATION	ORIGIN AIRPORT %					PASSENGERS	
		OKC	DFW	TUL	SWO	ICT	TOTAL	PDEW
1	Cancun, Mexico	35	39	17	9	0	3,671	5.0
2	London, UK (LHR)	54	25	8	13	0	2,041	2.8
3	Mexico City, Mexico	22	59	7	12	0	1,964	2.7
4	San Jose del Cabo, Mexico	51	6	29	11	3	1,908	2.6
5	Vancouver, Canada	46	4	23	8	19	1,166	1.6
6	Shanghai, China	48	19	13	15	4	1,141	1.6
7	Dublin, Ireland	69	9	9	9	4	1,007	1.4
8	Beijing, China	48	13	0	40	0	981	1.3
9	Toronto, Canada	39	3	12	21	24	902	1.2
10	Amsterdam, Netherlands	48	19	13	15	4	884	1.2
11	Ho Chi Minh City, Vietnam	79	0	0	13	8	842	1.2
12	Calgary, Canada	39	19	19	13	10	830	1.1
13	Lima, Peru	28	24	40	5	4	769	1.1
14	Mazatlan, Mexico	48	19	13	15	4	567	0.8
15	Rome-Da Vinci, Italy	64	0	27	9	0	563	0.8
Top 15 International		**45**	**23**	**15**	**13**	**4**	**19,238**	**26.4**
Total International		**47**	**21**	**14**	**14**	**4**	**32,836**	**45.0**

Most airline hubs are directional and flow passenger traffic to and from geographic regions, not just destinations within the region.

FEDERAL AVIATION ADMINISTRATION (FAA) GEOGRAPHIC REGIONS

It is important to identify and quantify air travel markets, but it is also important to measure air travel by specific geographic regions. Generally, airlines operate route systems that serve geographic areas. Additionally, most airline hubs are directional and flow passenger traffic to and from geographic regions, not just destinations within the region. Therefore, air service analysis exercises consider the regional flow of passenger traffic as well as passenger traffic to a specific city. Accordingly, this section analyzes the regional distribution of air travelers from the airport catchment area. For this exercise, the FAA geographic breakdown of the U.S. is used (**Exhibit 4.1**).

EXHIBIT 4.1 FAA GEOGRAPHIC REGIONS

The Southeast region was the largest traveled region, with 25 percent of passengers, followed by the West region.

REGIONAL DISTRIBUTION OF TRAVELERS

Table 4.5 divides catchment area travel into the FAA's nine geographic regions and one catch-all international region. The Southeast region was the largest traveled region, with 25 percent of passengers. The West region was the second largest with 14 percent of passengers, followed by the Southwest, Northwest and East regions.

SWO's retention rates were highest to the Southwest region (25 percent) and West region (17 percent) while its lowest retention rates were to the Northwest region (9 percent) and Alaska (5 percent).

TABLE 4.5 REGIONAL DISTRIBUTION OF TRAVEL BY AIRPORT

AIRPORT		REGION										
		SE	W	SW	NW	E	GL	INTL	NE	C	AK	TOTAL
OKC	Pax	46,030	27,420	23,844	25,300	23,350	19,468	15,307	4,990	2,928	1,022	189,658
	%	24	14	13	13	12	10	8	3	2	1	100
TUL	Pax	18,926	7,034	7,091	9,578	8,711	6,425	4,631	1,179	1,002	697	65,274
	%	29	11	11	15	13	10	7	2	2	1	100
SWO	Pax	12,675	8,184	11,341	3,794	5,931	5,148	4,499	1,298	909	117	53,897
	%	24	15	21	7	11	10	8	2	2	0	100
DFW	Pax	3,749	3,039	1,366	1,392	2,087	1,388	7,049	1,063	285	93	21,510
	%	17	14	6	6	10	6	33	5	1	0	100
ICT	Pax	5,340	3,229	2,567	3,165	1,861	2,285	1,350	328	409	418	20,952
	%	25	15	12	15	9	11	6	2	2	2	100
Total	**Pax**	**86,720**	**48,906**	**46,208**	**43,230**	**41,940**	**34,714**	**32,836**	**8,857**	**5,532**	**2,347**	**351,291**
	%	**25**	**14**	**13**	**12**	**12**	**10**	**9**	**3**	**2**	**1**	**100**
SWO Retention %		**15**	**17**	**25**	**9**	**14**	**15**	**14**	**15**	**16**	**5**	**54**

Mexico and Central America was the largest international region, with 33 percent of SWO catchment area international passengers. SWO retained 11 percent of travelers to Mexico and Central America.

DISTRIBUTION OF INTERNATIONAL TRAVEL

Table 4.6 shows international travelers by airport and region. Nine percent of catchment area travelers had international itineraries. Mexico and Central America was the most frequented international region with 33 percent, or 10,725 of the total 32,836 catchment area international travelers, followed by Europe with 26 percent and Asia with 18 percent of the total. Canada was the fourth largest region with 9 percent of international travel. The remaining top international regions were, in order of greatest to least: South America, the Caribbean, the Middle East, Australia and Oceania, and Africa.

SWO's retention averaged 14 percent for international destinations. SWO's retention was highest (20 percent or greater) to Asia (20 percent). SWO's lowest retention (11 percent) was to Mexico and Central America, South America and the Caribbean.

TABLE 4.6 REGIONAL DISTRIBUTION OF INTERNATIONAL PASSENGERS

REGION	ORIGINATING AIRPORT					TRUE MARKET	% OF COLUMN	SWO RETENTION %
	OKC	DFW	TUL	SWO	ICT			
Mexico & Central America	4,245	3,463	1,679	1,167	171	10,725	33	11
Europe	4,542	1,545	1,043	1,189	254	8,573	26	14
Asia	3,151	961	493	1,181	232	6,018	18	20
Canada	1,280	258	557	408	529	3,032	9	13
South America	693	370	435	188	73	1,758	5	11
Caribbean	631	153	216	127	22	1,149	4	11
Middle East	367	143	100	115	33	758	2	15
Australia & Oceania	311	121	85	97	28	642	2	15
Africa	87	34	24	27	8	180	1	15
Total passengers	**15,307**	**7,049**	**4,631**	**4,499**	**1,350**	**32,836**	**100**	**14**
% of row	**47**	**21**	**14**	**14**	**4**	**100**	**-**	**-**

AIRLINES

Information in this section identifies airline use by catchment area air travelers. The information is airport and airline specific. The intent is to determine which airlines are used to travel to specific destinations. The airline market share at SWO is based on U.S. DOT airline reported data. Airline market share at diverting airports is based on ARC data and is an estimation of the carrier's share of diverted passengers.

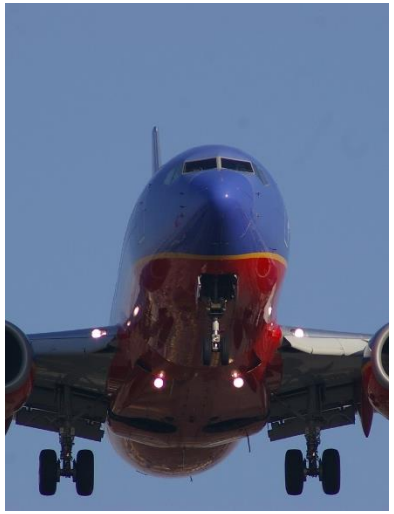
AIRLINES USED AT SWO

Table 5.1[3] provides the airline share for the top 25 SWO true markets and total share by airline at SWO. American Airlines carried the highest share as the only airline to provide nonstop service at SWO. All other carriers, through codeshare and interline connections, served 1 percent of passengers.

TABLE 5.1 AIRLINES USED AT SWO

RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %		TOTAL PAX
		AA	OTHER	
1	Dallas, TX (DFW)	100	0	4,769
2	Orlando, FL (MCO)	100	0	2,182
3	New York, NY (LGA)	100	0	1,408
4	Nashville, TN	100	0	1,140
5	Chicago, IL (ORD)	100	0	1,074
6	San Diego, CA	100	0	1,062
7	Atlanta, GA	100	0	1,006
8	Washington, DC (DCA)	100	0	978
9	Tampa, FL	100	0	970
10	Austin, TX	100	0	965
11	San Antonio, TX	100	0	964
12	Boston, MA	100	0	956
13	Houston, TX (IAH)	100	0	945
14	San Francisco, CA	100	0	933
15	Los Angeles, CA	100	0	883
16	Miami, FL	100	0	812
17	Denver, CO	100	0	810
18	Seattle, WA	100	0	801
19	Las Vegas, NV	100	0	737
20	Houston, TX (HOU)	100	0	729
21	Minneapolis, MN	100	0	702
22	New Orleans, LA	100	0	684
23	Sacramento, CA	100	0	683
24	Philadelphia, PA	100	0	657
25	Newark, NJ	100	0	641
Total Top 25		**100**	**0**	**27,491**
Total All Markets		**99**	**1**	**53,897**

[3] *Source: Diio Mi; Year Ended March 31, 2020*



AIRLINES USED AT OKC

Table 5.2 shows the airlines used and top destinations when travelers from the catchment area used OKC. American had the highest estimated share of catchment area passengers at OKC, carrying 37 percent of diverting passengers. United Airlines had the second highest share at 24 percent, followed by Southwest Airlines, Delta Air Lines, Alaska Airlines and Frontier Airlines. All other carriers combined for the remaining 2 percent of passengers.

TABLE 5.2 AIRLINES USED AT OKC

RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %							TOTAL OKC PAX
		AA	UA	WN	DL	AS	F9	OTHER	
1	Denver, CO	14	63	12	0	0	12	0	8,084
2	Orlando, FL (MCO)	22	19	18	24	0	18	0	7,695
3	Seattle, WA	15	42	1	5	36	1	2	6,089
4	Chicago, IL (ORD)	57	43	0	0	0	0	0	5,101
5	Washington, DC (DCA)	48	1	52	0	0	0	0	4,928
6	New York, NY (LGA)	45	16	33	6	0	0	0	4,853
7	Atlanta, GA	6	10	0	84	0	0	0	4,718
8	Los Angeles, CA	81	11	1	1	3	1	1	4,589
9	Houston, TX (IAH)	5	95	0	0	0	0	0	4,455
10	New Orleans, LA	32	17	52	0	0	0	0	4,226
11	Tampa, FL	35	8	42	15	0	0	0	4,003
12	Nashville, TN	26	17	50	7	0	0	0	3,731
13	Phoenix, AZ (PHX)	95	2	1	2	0	1	0	3,411
14	Portland, OR	29	38	2	25	5	2	0	2,927
15	Chicago, IL (MDW)	0	0	90	10	0	0	0	2,806
16	Las Vegas, NV	67	18	0	14	0	0	0	2,784
17	Newark, NJ	14	59	11	16	0	0	0	2,669
18	Boston, MA	46	3	30	21	0	0	0	2,660
19	Fort Lauderdale, FL	23	9	46	21	0	0	0	2,465
20	Dallas, TX (DFW)	100	0	0	0	0	0	0	2,337
21	Sacramento, CA	42	31	1	26	0	1	0	2,193
22	Fort Myers, FL	34	22	16	28	0	0	0	1,995
23	Norfolk, VA	55	6	20	18	0	0	0	1,958
24	Philadelphia, PA	84	10	1	3	0	1	0	1,955
25	Salt Lake City, UT	12	8	2	74	0	2	0	1,900
Total Top 25		**36**	**25**	**19**	**14**	**3**	**3**	**0**	**94,531**
Total All Markets		**37**	**24**	**18**	**16**	**2**	**1**	**2**	**189,658**

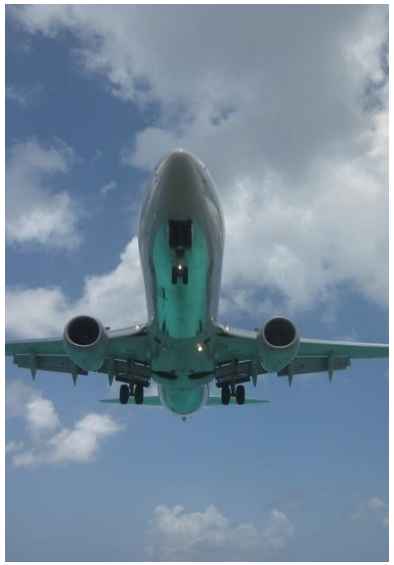
American Airlines had the highest share of catchment area passengers at TUL, carrying 33 percent of diverting passengers, followed by United Airlines at 26 percent.

AIRLINES USED AT TUL

Table 5.3 shows the airlines used and top destinations when travelers from the catchment area used TUL. American had the highest share of catchment area passengers at TUL, carrying 33 percent of diverting passengers, followed by United with 26 percent of passengers. Southwest had the third highest share at 21 percent, while Delta had the fourth highest share at 16 percent. Other carriers combined for the remaining 4 percent of passengers.

TABLE 5.3 AIRLINES USED AT TUL

RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %					TOTAL TUL PAX
		AA	UA	WN	DL	OTHER	
1	Denver, CO	3	75	11	0	11	4,420
2	Orlando, FL (MCO)	32	27	9	24	9	3,494
3	Chicago, IL (ORD)	53	47	0	0	0	1,933
4	New York, NY (LGA)	49	11	34	5	0	1,902
5	Atlanta, GA	0	7	14	79	0	1,873
6	Los Angeles, CA	47	4	23	0	27	1,823
7	Philadelphia, PA	40	11	34	15	0	1,799
8	Houston, TX (IAH)	0	100	0	0	0	1,755
9	Nashville, TN	27	10	50	13	0	1,555
10	Fort Lauderdale, FL	11	30	40	19	0	1,463
11	Portland, OR	4	35	43	4	13	1,461
12	Tampa, FL	35	27	38	0	0	1,388
13	Pittsburgh, PA	60	21	19	0	0	1,206
14	Dallas, TX (DFW)	100	0	0	0	0	1,049
15	Phoenix, AZ (PHX)	31	13	50	6	0	999
16	Las Vegas, NV	12	44	19	7	19	992
17	Salt Lake City, UT	17	8	17	58	0	944
18	Boston, MA	25	39	26	10	0	927
19	Seattle, WA	16	16	34	12	23	892
20	Richmond, VA	69	13	0	19	0	881
21	West Palm Beach, FL	83	17	0	0	0	862
22	Savannah, GA	26	0	0	74	0	805
23	Minneapolis, MN	0	0	12	88	0	801
24	Pensacola, FL	25	25	25	25	0	765
25	Dallas, TX (DAL)	0	0	100	0	0	754
Total Top 25		**28**	**29**	**22**	**16**	**5**	**36,743**
Total All Markets		**33**	**26**	**21**	**16**	**4**	**65,274**



AIRLINES USED AT DFW

Table 5.4 shows the airlines used and top destinations when travelers from the catchment area used DFW. American had the highest share of catchment area passengers at DFW, carrying 65 percent of diverting passengers. Delta had the second highest share at 9 percent, followed by Interjet, a Mexico low-cost carrier headquartered in Mexico City, with an 8 percent share. United had the fourth highest share at 8 percent. All other carriers combined for the remaining 10 percent of passengers.

TABLE 5.4 AIRLINES USED AT DFW

RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %					TOTAL DFW PAX
		AA	DL	4O	UA	OTHER	
1	Boston, MA	83	0	0	17	0	1,047
2	New York, NY (LGA)	84	16	0	0	0	896
3	San Francisco, CA	82	0	0	18	0	760
4	Denver, CO	78	0	0	22	0	607
5	Los Angeles, CA	18	82	0	0	0	556
6	Chicago, IL (ORD)	78	0	0	22	0	483
7	Atlanta, GA	43	57	0	0	0	469
8	Tampa, FL	63	0	0	38	0	431
9	Philadelphia, PA	100	0	0	0	0	394
10	Jacksonville, FL	100	0	0	0	0	341
11	Pensacola, FL	100	0	0	0	0	333
12	Charleston, SC	100	0	0	0	0	324
13	Austin, TX	100	0	0	0	0	322
14	West Palm Beach, FL	100	0	0	0	0	287
15	Lihue, HI	33	67	0	0	0	284
16	Salt Lake City, UT	57	29	0	14	0	275
17	Newark, NJ	100	0	0	0	0	233
18	Miami, FL	100	0	0	0	0	224
19	Seattle, WA	33	0	0	0	67	209
20	Nashville, TN	100	0	0	0	0	207
21	Houston, TX (IAH)	100	0	0	0	0	202
22	San Diego, CA	100	0	0	0	0	193
23	New York, NY (JFK)	100	0	0	0	0	186
24	Las Vegas, NV	50	0	0	0	50	184
25	Minneapolis, MN	0	100	0	0	0	140
Total Top 25		**76**	**13**	**0**	**8**	**3**	**9,590**
Total All Markets		**65**	**9**	**8**	**8**	**10**	**21,510**

United Airlines had the highest share of catchment area passengers at ICT, carrying 33 percent of diverting passengers, followed by closely by American Airlines also with a 33 percent share of passengers.

AIRLINES USED AT ICT

Table 5.5 shows the airlines used and top destinations when travelers from the catchment area used ICT. United had the highest share of catchment area passengers at ICT, carrying 33 percent of diverting passengers, followed closely by American, also with a 33 percent share of passengers. Delta had the third highest share at 27 percent, while Alaska carried the fourth highest share at 6 percent. Other carriers combined for the remaining 1 percent of passengers.

TABLE 5.5 AIRLINES USED AT ICT

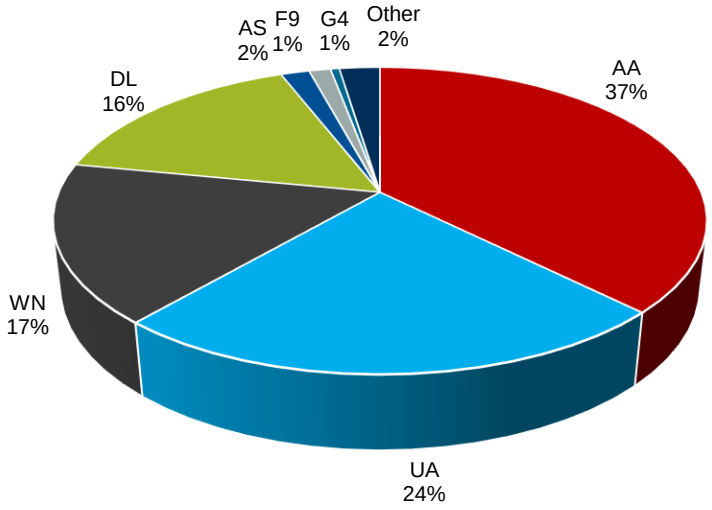
RANK	TOP 25 DOMESTIC TRUE MARKETS	AIRLINE %					TOTAL ICT PAX
		UA	AA	DL	AS	OTHER	
1	Atlanta, GA	0	4	96	0	0	1,542
2	Seattle, WA	13	7	0	80	0	1,045
3	Denver, CO	85	15	0	0	0	877
4	New Orleans, LA	8	92	0	0	0	746
5	Minneapolis, MN	0	0	100	0	0	702
6	Orlando, FL (MCO)	14	43	43	0	0	623
7	Fresno, CA	83	17	0	0	0	576
8	San Francisco, CA	50	50	0	0	0	484
9	Norfolk, VA	0	75	25	0	0	482
10	Phoenix, AZ (PHX)	29	71	0	0	0	437
11	Chicago, IL (ORD)	75	25	0	0	0	430
12	Anchorage, AK	56	0	22	22	0	418
13	San Diego, CA	73	27	0	0	0	354
14	New York, NY (LGA)	13	0	88	0	0	341
15	Jacksonville, FL	0	0	100	0	0	341
16	Houston, TX (IAH)	100	0	0	0	0	337
17	Pensacola, FL	0	33	67	0	0	285
18	Raleigh/Durham, NC	0	100	0	0	0	284
19	Portland, OR	75	0	0	25	0	258
20	Bozeman, MT	100	0	0	0	0	241
21	Dallas, TX (DFW)	0	100	0	0	0	238
22	Charlotte-Douglas, NC	25	0	75	0	0	233
23	Buffalo, NY	67	33	0	0	0	218
24	Tampa, FL	0	75	25	0	0	216
25	Ontario, CA	57	43	0	0	0	205
Total Top 25		**32**	**29**	**31**	**8**	**0**	**11,914**
Total All Markets		**33**	**33**	**27**	**6**	**1**	**20,952**

When SWO catchment area travelers divert to alternate airports, the largest percentage used American Airlines, followed by United Airlines, Southwest Airlines and Delta Air Lines.

DIVERTING PASSENGER AIRLINE USE

Exhibit 5.1 shows the airlines used when travelers from the catchment area originated from any other airport besides SWO. Overall, American carried the highest number of diverting passengers, with 37 percent, followed by United with 24 percent, Southwest with 17 percent, Delta with 16 percent, Alaska with 2 percent, Frontier with 1 percent and Allegiant with 1 percent. Other airlines accounted for 2 percent of passengers.

EXHIBIT 5.1 DIVERTING PASSENGER AIRLINE USE



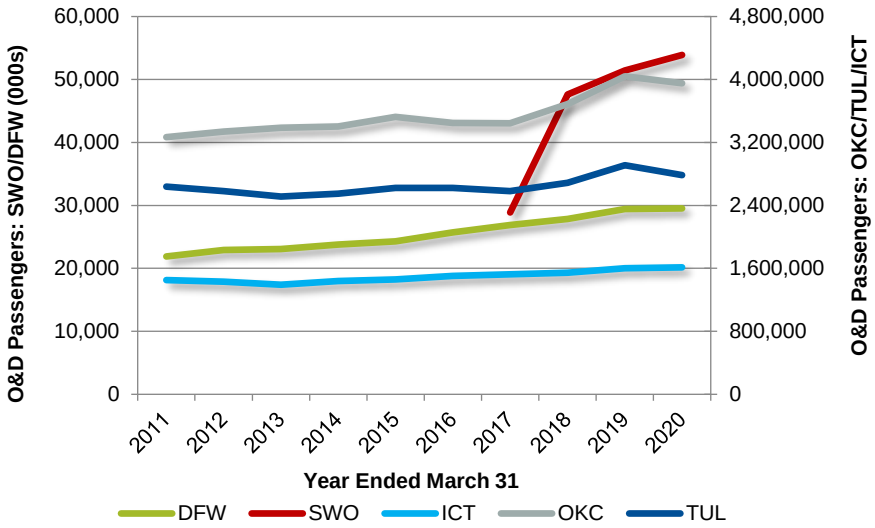
FACTORS AFFECTING AIR SERVICE DEMAND AND RETENTION

This section examines several factors that have affected and will continue to affect air service demand in the Stillwater area and SWO's ability to retain passengers. The factors affecting SWO's ability to retain passengers included in this section are airfares, nonstop service availability, and the quality and capacity of air service offered at SWO, OKC, TUL, ICT and DFW.

PASSENGER ACTIVITY COMPARISON

To better understand the changes in passenger volumes at SWO and the diverting airports, **Exhibit 6.1** provides a depiction of origin and destination passengers over the last 10 years by year ended March 31 passenger totals as reported to the U.S. DOT. During this period:

EXHIBIT 6.1 PASSENGER TRENDS



- Beginning with the initiation of service in the year ended March 31, 2017, SWO's passengers have increased each year since the first year, increasing 4.8 percent from 2019 to 2020.
- Each of the alternate airports had increasing growth rates over the 10-year period, with TUL having the lowest CAGR at 0.6 percent and DFW having the highest CAGR at 3.4 percent. From 2019 to 2020, however, OKC and TUL had declining passengers while DFW and ICT passengers increased by less than 1 percent.

SWO's overall average domestic fare for the year ended March 31, 2020, was $209, $25 higher than OKC, $23 higher than TUL, $15 higher than ICT and $19 higher than DFW.

AIRFARES

When a traveler decides which airport to access for travel, airfares play a large role. Airfares affect air service demand and an airport's ability to retain passengers. One-way airfares (excluding taxes and Passenger Facility Charges [PFC]) paid by travelers are used to measure the relative fare competitiveness between SWO and the alternate airports. Fares listed for the alternate airports are for all air travelers using the airport and are not reflective of the average fare paid only by catchment area travelers diverting to these airports.

TABLE 6.1 U.S. DOT AVERAGE DOMESTIC ONE-WAY FARES

RANK	DESTINATION	AVERAGE ONE-WAY FARE					MIN DIFF.
		OKC	TUL	SWO	ICT	DFW	
1	Denver, CO	$111	$116	$192	$121	$118	$71
2	Orlando, FL (MCO)	$123	$148	$147	$180	$146	($33)
3	Atlanta, GA	$196	$200	$194	$199	$150	($6)
4	New York, NY (LGA)	$201	$215	$232	$221	$194	$11
5	Seattle, WA	$171	$197	$227	$188	$175	$30
6	Chicago, IL (ORD)	$183	$202	$225	$220	$150	$5
7	Dallas, TX (DFW)	$175	$150	$155	$194	-	($39)
8	Los Angeles, CA	$189	$156	$209	$181	$141	$20
9	Houston, TX (IAH)	$199	$199	$181	$217	$182	($36)
10	Tampa, FL	$162	$158	$204	$170	$160	$35
11	Nashville, TN	$142	$183	$166	$179	$189	($23)
12	Washington, DC (DCA)	$153	$216	$242	$211	$250	($8)
13	New Orleans, LA	$170	$178	$175	$172	$141	($3)
14	Boston, MA	$233	$229	$256	$234	$194	$22
15	Phoenix, AZ (PHX)	$172	$184	$270	$151	$180	$87
16	Portland, OR	$199	$214	$273	$217	$206	$56
17	Philadelphia, PA	$215	$219	$221	$235	$198	($14)
18	Las Vegas, NV	$147	$140	$185	$124	$128	$39
19	Fort Lauderdale, FL	$163	$161	$173	$188	$131	($15)
20	Newark, NJ	$229	$241	$200	$252	$236	($53)
21	San Francisco, CA	$214	$215	$231	$223	$200	$8
22	Salt Lake City, UT	$195	$186	$249	$214	$187	$36
23	San Diego, CA	$185	$199	$208	$201	$184	$7
24	Minneapolis, MN	$209	$203	$184	$217	$145	($34)
25	Charlotte-Douglas, NC	$235	$237	$267	$219	$245	$22
Average Domestic Fare		**$184**	**$186**	**$209**	**$195**	**$190**	**$15**

Table 6.1[4] shows one-way average airfares for the top 25 catchment area domestic destinations. Average airfares are a result of many factors including length of haul, availability of seats, business versus leisure fares and airline competition. SWO's overall average domestic fare for the year ended March 31, 2020, was $209, $25 higher than OKC, $23 higher than TUL, $15 higher than ICT and $19 higher than DFW.

In individual markets, SWO had a higher fare than the highest fare at all of the competing airports in 14 of the top 25 markets. The highest fare difference compared to the highest fare at competing airports (greater than $50) was in the Denver, Phoenix-Sky Harbor and Portland markets.

[4] *Source: Diio Mi; Note: Year Ended March 31, 2020; Fares do not include taxes or Passenger Facility Charges*

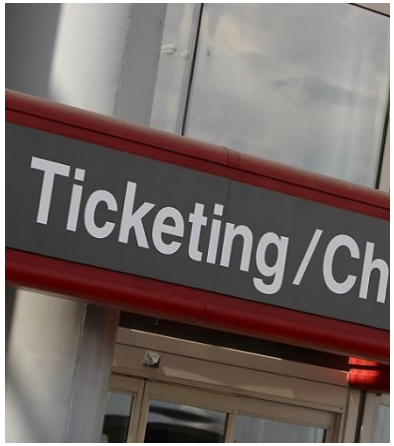
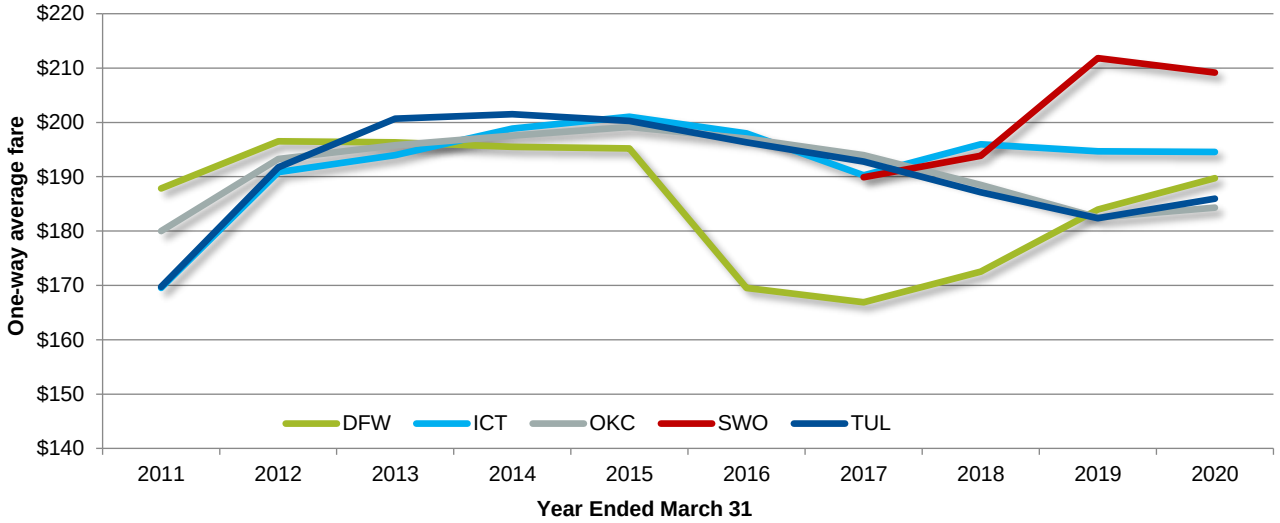


Exhibit 6.2 tracks the average fares at SWO and the competing airports from the year ended March 31, 2011, through the year ended March 31, 2020. Based on U.S. DOT airline data, average fares at SWO since initiation of service in the year ended March 31, 2017, ranged from $190 (2017) to $212 (2019). Over the same time period, the average fare at OKC ranged from $182 (2019) to $194 (2017), while the average fare at TUL ranged from $182 (2019) to $193 (2017), ICT's ranged from $190 (2017) to $196 (2018) and DFW's fares ranged from $167 (2017) to $190 (2020). Overall from 2017 to 2020, average domestic fares increased at a CAGR of 3.3 percent at SWO, below the increase for DFW of 4.4 percent and above the increase for ICT of 0.7 percent. OKC's and TUL's fares decreased at CAGRs of 1.7 and 1.2 percent, respectively.

In the latest year-ended period, SWO's fare differential compared to each of the competing airports decreased. The fare differential decreased by $5 compared to OKC, $6 compared to TUL, $3 compared to ICT and $8 compared to DFW.

EXHIBIT 6.2 10-YEAR AVERAGE DOMESTIC ONE-WAY FARE TREND



DFW offered the highest service levels to the top 25 catchment area destinations followed by OKC, TUL, ICT and SWO.

NONSTOP SERVICE AVAILABILITY

Travelers drive to competing airports to access air service for many reasons, one of which is nonstop service availability. **Table 6.2**[5] compares the level of air service offered at SWO with that offered at the competing airports. For the year ended March 31, 2020, SWO had nonstop service to one of the top 25 catchment area destinations with an average of 17 weekly departures and one destination overall, DFW. OKC had service to 18 of the top 25 markets with an average of 412 weekly roundtrips, while TUL had service to 12 of the top 25 destinations with 295 weekly frequencies. DFW had service to 24 of the top 25 destinations and 259 total destinations. ICT had service to nine top 25 destinations with 215 weekly frequencies on average.

TABLE 6.2 NONSTOP SERVICE COMPARISON

RANK	DESTINATION	AVG WEEKLY DEPARTURES				
		OKC	TUL	SWO	DFW	ICT
1	Denver, CO	60	43	0	117	32
2	Orlando, FL (MCO)	2	1	0	87	0
3	Atlanta, GA	38	31	0	129	20
4	New York, NY (LGA)	0	0	0	127	0
5	Seattle, WA	7	0	0	79	7
6	Chicago, IL (ORD)	46	46	0	149	48
7	Dallas, TX (DFW)	61	61	17	0	45
8	Los Angeles, CA	15	9	0	143	0
9	Houston, TX (IAH)	55	49	0	118	27
10	Tampa, FL	0	0	0	53	0
11	Nashville, TN	3	0	0	52	0
12	Washington, DC (DCA)	14	0	0	65	0
13	New Orleans, LA	0	0	0	56	0
14	Boston, MA	0	0	0	59	0
15	Phoenix, AZ (PHX)	27	10	0	91	9
16	Portland, OR	0	0	0	34	0
17	Philadelphia, PA	8	0	0	69	0
18	Las Vegas, NV	16	10	0	106	9
19	Fort Lauderdale, FL	0	0	0	61	0
20	Newark, NJ	5	0	0	64	0
21	San Francisco, CA	7	0	0	90	0
22	Salt Lake City, UT	15	10	0	74	0
23	San Diego, CA	0	0	0	63	0
24	Minneapolis, MN	14	10	0	82	19
25	Charlotte-Douglas, NC	19	14	0	70	0
Total Top 25 Frequencies		**412**	**295**	**17**	**2,037**	**215**
Total All Markets		**503**	**354**	**17**	**6,725**	**231**
Number of Top 25 Served		**18**	**12**	**1**	**24**	**9**
Total Destinations Served		**29**	**19**	**1**	**259**	**14**

[5] *Source: Diio Mi; Year Ended March 31, 2020*

SWO offered a total of 875 departures and 39,550 seats. SWO's departures were provided on regional jet aircraft; more than 50 percent of the service at OKC and ICT and nearly 50 percent of the service at TUL were provided on regional jets.

QUALITY OF AIR SERVICE AT COMPETING AIRPORTS

The quality of air service offered by an airport is a factor in a traveler's decision when selecting which airport to originate travel from. In general, passengers prefer larger over smaller aircraft and jet over turboprops.

Table 6.3[6] provides SWO's and the competing airports total departures by aircraft type for the year ended March 31, 2020. SWO had 875 departures and 39,550 seats, all on regional jet aircraft. Comparatively, OKC offered 26,157 departures and more than 2.7 million seats on a mix of regional jet and narrow-body aircraft. TUL had 18,425 departures and nearly 2.0 million seats, with 49 percent of the departures on regional jet aircraft, while ICT had 12,027 departures and nearly 1.1 million seats, 64 percent of which were on regional jets. DFW had the highest level of service with nearly 350,000 departures and nearly 44.3 million seats on a wide range of aircraft types.

TABLE 6.3 DEPARTURES BY AIRCRAFT TYPE BY ORIGIN

AIRCRAFT TYPE	SEAT RANGE	TOTAL DEPARTURES				
		OKC	TUL	SWO	DFW	ICT
Turboprop	9-30	-	-	-	4,837	-
Regional jet	30-50	2,029	3,799	875	36,432	4,957
	51-70	3,605	634	-	15,369	441
	71-100	8,575	4,542	-	84,114	2,301
Narrow body jet	70-125	862	247	-	6,828	130
	126-160	9,487	8,329	-	123,130	3,600
	>160	1,599	874	-	65,273	598
Wide body jet	160-240	-	-	-	3,372	-
	241-300	-	-	-	7,789	-
	>300	-	-	-	2,571	-
Total Departures		**26,157**	**18,425**	**875**	**349,715**	**12,027**
% Turboprop Departures		**0%**	**0%**	**0%**	**1%**	**0%**
% Regional Jet Departures		**54%**	**49%**	**100%**	**39%**	**64%**
Total Seats		**2,740,941**	**1,966,567**	**39,550**	**44,250,928**	**1,083,133**

[6] *Source: Diio Mi; Year Ended March 31, 2020*

An increase in retention of 10 percentage points would create an estimated additional 35,129 annual passengers (48.1 PDEW) for SWO.

RETENTION RATE SENSITIVITY

Considering the previous factors of airfares, nonstop service and quality of service, a retention rate sensitivity follows in **Table 6.4**. The purpose is to show how small changes in passenger retention can affect passenger volume. Passengers in total and for each of the top 25 markets are calculated using varying degrees of retention. An increase in retention of 10 percentage points would create an estimated additional 35,129 annual passengers (48.1 PDEW) for SWO.

TABLE 6.4 RETENTION RATE SENSITIVITY

RANK	DESTINATION	REPORTED PAX	RETENTION %	RETENTION IMPROVEMENT		
				5%	10%	15%
1	Denver, CO	810	5	1,550	2,290	3,029
2	Orlando, FL (MCO)	2,182	15	2,888	3,594	4,301
3	Atlanta, GA	1,006	10	1,486	1,967	2,447
4	New York, NY (LGA)	1,408	15	1,878	2,348	2,818
5	Seattle, WA	801	9	1,253	1,705	2,157
6	Chicago, IL (ORD)	1,074	12	1,525	1,976	2,427
7	Dallas, TX (DFW)	4,769	57	5,188	5,608	6,028
8	Los Angeles, CA	883	11	1,282	1,681	2,081
9	Houston, TX (IAH)	945	12	1,330	1,714	2,099
10	Tampa, FL	970	14	1,320	1,671	2,021
11	Nashville, TN	1,140	17	1,474	1,809	2,143
12	Washington, DC (DCA)	978	15	1,300	1,623	1,945
13	New Orleans, LA	684	12	979	1,274	1,569
14	Boston, MA	956	17	1,240	1,525	1,809
15	Phoenix, AZ (PHX)	624	11	901	1,178	1,454
16	Portland, OR	581	11	846	1,110	1,375
17	Philadelphia, PA	657	13	901	1,144	1,388
18	Las Vegas, NV	737	15	979	1,222	1,465
19	Fort Lauderdale, FL	518	12	743	968	1,193
20	Newark, NJ	641	15	856	1,071	1,286
21	San Francisco, CA	933	23	1,139	1,346	1,552
22	Salt Lake City, UT	510	14	698	885	1,073
23	Cancun, Mexico	338	9	521	705	888
24	San Diego, CA	1,062	29	1,244	1,426	1,608
25	Minneapolis, MN	702	21	872	1,042	1,212
Total Top 25		**25,909**	**15**	**34,395**	**42,882**	**51,368**
Total Domestic		**49,398**	**16**	**65,320**	**81,243**	**97,166**
Total International		**4,499**	**14**	**6,141**	**7,783**	**9,424**
Total of All Markets		**53,897**	**15**	**71,461**	**89,026**	**106,590**

SITUATION ANALYSIS

Stillwater is located approximately 70 miles, or an approximate 90-minute drive, from both TUL and OKC, creating challenges in retaining passengers flying out of SWO. For the 12-months ended March 31, 2020, SWO retained approximately 15 percent of catchment area passengers, which was 1 percentage point higher than the previous true market estimate.

SWO is one of the few communities in the U.S. that had no commercial service since deregulation and was able to successfully recruit traditional, legacy service. In August 2016, American Airlines commenced service to DFW with small regional jet aircraft. While the pandemic threatened service at SWO, American remained in the market during the entire pandemic and has since returned SWO to its pre-pandemic, twice daily service.

SWO needs to continue to concentrate on improving passenger levels, with load factors approximating 71 percent for the 12-months ended March 31, 2020. While this is above many peer markets at DFW, it is substantially below the industry and American averages. The RASM for SWO also tends to be below many of its peer markets due to lower average fares. SWO should work with American to achieve average fares at a consistent $30 to $40 one-way premium over what the fares for American are at OKC and TUL.

As SWO continues to recover post-pandemic, additional flights or capacity through use of larger aircraft are potential opportunities. In the near term, it is unlikely that SWO will be able to add service to a new hub either on American or a different airline until SWO is able to consistently have a RASM that is on par or above peer markets. Once RASM improves, new service to a new hub such as Chicago O'Hare International Airport on American or new service on United Airlines to Denver is possible.

TOP 50 TRUE MARKETS

TABLE A.1 TOP 50 TRUE MARKETS

RANK	DESTINATION	SWO REPORTED PAX	RETENTION %	TRUE MARKET	PDEW	DIVERTING PASSENGERS			
						OKC	TUL	DFW	ICT
1	Denver, CO	810	5	14,798	20.3	8,084	4,420	607	877
2	Orlando, FL (MCO)	2,182	15	14,128	19.4	7,695	3,494	134	623
3	Atlanta, GA	1,006	10	9,608	13.2	4,718	1,873	469	1,542
4	New York, NY (LGA)	1,408	15	9,400	12.9	4,853	1,902	896	341
5	Seattle, WA	801	9	9,037	12.4	6,089	892	209	1,045
6	Chicago, IL (ORD)	1,074	12	9,020	12.4	5,101	1,933	483	430
7	Dallas, TX (DFW)	4,769	57	8,393	11.5	2,337	1,049	0	238
8	Los Angeles, CA	883	11	7,982	10.9	4,589	1,823	556	131
9	Houston, TX (IAH)	945	12	7,694	10.5	4,455	1,755	202	337
10	Tampa, FL	970	14	7,007	9.6	4,003	1,388	431	216
11	Nashville, TN	1,140	17	6,685	9.2	3,731	1,555	207	52
12	Washington, DC (DCA)	978	15	6,450	8.8	4,928	349	78	117
13	New Orleans, LA	684	12	5,905	8.1	4,226	124	124	746
14	Boston, MA	956	17	5,682	7.8	2,660	927	1,047	91
15	Phoenix, AZ (PHX)	624	11	5,534	7.6	3,411	999	62	437
16	Portland, OR	581	11	5,292	7.2	2,927	1,461	65	258
17	Philadelphia, PA	657	13	4,871	6.7	1,955	1,799	394	66
18	Las Vegas, NV	737	15	4,858	6.7	2,784	992	184	161
19	Fort Lauderdale, FL	518	12	4,500	6.2	2,465	1,463	27	27
20	Newark, NJ	641	15	4,302	5.9	2,669	700	233	58
21	San Francisco, CA	933	23	4,125	5.7	1,554	393	760	484
22	Salt Lake City, UT	510	14	3,747	5.1	1,900	944	275	118
23	Cancun, Mexico	338	9	3,671	5.0	1,287	612	1,435	0
24	San Diego, CA	1,062	29	3,638	5.0	1,708	322	193	354
25	Minneapolis, MN	702	21	3,397	4.7	1,050	801	140	702
26	Charlotte-Douglas, NC	524	15	3,389	4.6	1,893	740	0	233
27	Sacramento, CA	683	21	3,331	4.6	2,193	228	114	114
28	Chicago, IL (MDW)	0	0	3,238	4.4	2,806	369	0	64
29	West Palm Beach, FL	287	9	3,091	4.2	1,511	862	287	144
30	Austin, TX	965	32	3,056	4.2	1,448	161	322	161
31	Norfolk, VA	241	8	3,043	4.2	1,958	362	0	482
32	Miami, FL	812	27	2,996	4.1	1,400	448	224	112
33	Pittsburgh, PA	564	19	2,971	4.1	1,098	1,206	0	103
34	Houston, TX (HOU)	729	25	2,917	4.0	1,459	729	0	0
35	Boise, ID	157	5	2,858	3.9	1,865	640	0	196

TABLE A.1 TOP 50 TRUE MARKETS

RANK	DESTINATION	SWO REPORTED PAX	RETENTION %	TRUE MARKET	PDEW	DIVERTING PASSENGERS			
						OKC	TUL	DFW	ICT
36	Richmond, VA	136	5	2,725	3.7	1,597	881	55	55
37	Pensacola, FL	381	14	2,702	3.7	938	765	333	285
38	Reno, NV	271	10	2,669	3.7	1,538	724	45	90
39	Fort Myers, FL	318	12	2,663	3.6	1,995	271	0	80
40	San Antonio, TX	964	37	2,609	3.6	1,588	0	0	57
41	Madison, WI	420	16	2,556	3.5	1,353	463	132	189
42	Anchorage, AK	117	5	2,347	3.2	1,022	697	93	418
43	Savannah, GA	127	6	2,289	3.1	1,229	805	42	85
44	Jacksonville, FL	341	15	2,272	3.1	754	496	341	341
45	Raleigh/Durham, NC	568	26	2,222	3.0	1,036	335	0	284
46	Knoxville, TN	317	14	2,220	3.0	1,374	423	106	0
47	St. Louis, MO	352	16	2,144	2.9	1,135	388	111	158
48	Milwaukee, WI	180	8	2,122	2.9	1,413	529	0	0
49	Fresno, CA	384	18	2,112	2.9	1,056	0	96	576
50	Honolulu, HI	139	7	2,091	2.9	1,533	279	105	35
Top 50 Destinations		**35,888**	**15**	**236,360**	**323.8**	**128,369**	**46,770**	**11,620**	**13,713**
Total Domestic		**49,398**	**16**	**318,455**	**436.2**	**174,351**	**60,643**	**14,461**	**19,602**
Total International		**4,499**	**14**	**32,836**	**45.0**	**15,307**	**4,631**	**7,049**	**1,350**
Total All Markets		**53,897**	**15**	**351,291**	**481.2**	**189,658**	**65,274**	**21,510**	**20,952**

GLOSSARY

AIRLINE CODES

4O	Interjet
AA	American Airlines
AS	Alaska Airlines
DL	Delta Air Lines
F9	Frontier Airlines
G4	Allegiant Air
UA	United Airlines
WN	Southwest Airlines

AIRPORT CATCHMENT AREA (ACA)

The geographic area surrounding an airport from which that airport can reasonably expect to draw passenger traffic. The airport catchment area is sometimes called the service area.

AIRPORT CODES

DAL	Dallas-Love Field, TX
DCA	Washington-National, DC
DFW	Dallas-Fort Worth, TX
HOU	Houston-Hobby, TX
IAH	Houston-Intercontinental, TX
ICT	Wichita, KS
JFK	New York-Kennedy, NY
LGA	New York-LaGuardia
LHR	London-Heathrow, UK
MCO	Orlando-International, FL
OKC	Oklahoma City, OK
ORD	Chicago-O'Hare, IL

AIRPORT CODES (CONTINUED)

PHX	Phoenix-Sky Harbor, AZ
SWO	Stillwater, OK
TUL	Tulsa, OK

ARC

Acronym for Airline Reporting Corporation.

AVERAGE AIRFARE

The average of the airfares reported by the airlines to the U.S. DOT. The average airfare does not include taxes or passenger facility charges and represents one-half of a roundtrip ticket.

CAGR

Abbreviation for compounded annual growth rate, or the average rate of growth per year over a given time period.

DESTINATION AIRPORT

Any airport where the air traveler spends four hours or more. This is the Federal Aviation Administration definition.

DIVERSION

Passengers who do not use the local airport for air travel, but instead use a competing airport to originate the air portion of their trip.

FAA

Acronym for the Federal Aviation Administration.

HUB

An airport used by an airline as a transfer point to get passengers to their intended destination. It is part of a hub and spoke model, where travelers moving between airports not served by direct flights change planes en route to their destination. Also an airport classification system used by the FAA (e.g., non-hub, small hub, medium hub, and large hub.

INITIATED (ORIGIN) PASSENGERS

Origin and destination passengers who began their trip from within the catchment area.

LOAD FACTOR

The percentage of airplane capacity that is used by passengers.

LOCAL MARKET

The number of air travelers who travel between two points via nonstop air service.

MICRO

Acronym for Micropolitan Statistical Area. Micros have at least one urban cluster with a population ranging from 10,000 to 50,000 that has a high degree of social and economic integration with the core as measured by commuting ties.

NARROW-BODY JET

A jet aircraft with a single aisle designed for seating over 100 passengers.

NONSTOP FLIGHT

Air travel between two points without stopping at an intermediate airport.

ONBOARD PASSENGERS

The number of passengers transported on one flight segment.

ORIGIN AND DESTINATION (O&D) PASSENGERS

Includes all originating and destination passengers. In the context of this report, it describes the passengers arriving and departing an airport.

ORIGINATING AIRPORT

The airport used by an air traveler for the first enplanement of a commercial air flight.

PASSENGER FACILITY CHARGE

Fee imposed by airports of $1 to $4.50 on enplaning passengers. The fees are used by airports to fund FAA approved airport improvement projects.

PAX

Abbreviation for passengers.

PDEW

Abbreviation for passengers daily each way.

POINT-TO-POINT

Nonstop service that does not stop at an airline's hub and whose primary purpose is to carry local traffic rather than connecting traffic.

REFERRED PASSENGERS

Origin and destination passengers who began their trip from outside the catchment area.

REGIONAL JET

A jet aircraft with a single aisle designed for seating fewer than 100 passengers.

RETAINED PASSENGERS

Passengers who use the local airport for air travel instead of using a competing airport to originate the air portion of their trip.

TRUE MARKET

Total number of air travelers, including those who are using a competing airport, in the geographic area served by SWO. The true market estimate includes the size of the total market and for specific destinations.

TURBOPROP AIRCRAFT

A type of engine that uses a jet engine to turn a propeller. Turboprops are often used on regional and business aircraft because of their relative efficiency at speeds slower than, and altitudes lower than, those of a typical jet.

U.S. DOT

Acronym for U.S. Department of Transportation.

WIDE-BODY JET

A jet aircraft with two aisles designed for seating greater than 175 passengers.

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APPENDIX TWO. FAA Templates for Comparing Airport Planning and TAF Forecasts

AIRPORT NAME: STILLWATER REGIONAL AIRPORT

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base yr.	2020	17,410	17,410	0%
Base yr. + 5yrs.	2025	28,000	28,964	-3%
Base yr. + 10yrs.	2030	31,460	28,964	9%
Base yr. + 15yrs.	2035	35,730	28,964	23%
Commercial Operations				
Base yr.	2020	1,920	1,920	0%
Base yr. + 5yrs.	2025	2,284	2,517	-9%
Base yr. + 10yrs.	2030	2,076	2,645	-22%
Base yr. + 15yrs.	2035	2,076	2,776	-25%
Total Operations				
Base yr.	2020	62,643	62,643	0%
Base yr. + 5yrs.	2025	75,234	80,967	-7%
Base yr. + 10yrs.	2030	84,406	84,121	0%
Base yr. + 15yrs.	2035	90,726	87,423	4%

NOTES: TAF data is on a U.S. Government fiscal year basis (October through September).

Template for Summarizing and Documenting Airport Planning Forecasts

A. Forecast Levels and Growth Rates

AIRPORT NAME: STILLWATER REGIONAL AIRPORT **Specify base year:** 2020

	Base Yr. Level	Base Yr. + 1yr.	Base Yr. + 5yrs.	Base Yr. + 10yrs.	Base Yr. + 15yrs.	Average Annual Compound Growth Rates: Base yr. to +1	Base yr. to +5	Base yr. to +10	Base yr. to +15
Passenger Enplanements									
Air Carrier	1,308	1,600	1,600	1,600	1,600	22.3%	4.1%	2.0%	1.4%
Commuter	16,102	13,900	26,400	29,860	34,130	-13.7%	10.4%	6.4%	5.1%
TOTAL	17,410	15,500	28,000	31,460	35,730	-11.0%	10.0%	6.1%	4.9%
Operations									
Itinerant									
Air carrier	30	94	348	1,076	1,284	212.0%	63.3%	43.0%	28.5%
Commuter/air taxi	1,890	1,899	1,936	1,000	792	0.5%	0.5%	-6.2%	-5.6%
Total Commercial Operations	1,920	1,993	2,284	2,076	2,076	3.8%	3.5%	0.8%	0.5%
General aviation	25,654	27,980	31,260	34,760	38,640	9.1%	4.0%	3.1%	2.8%
Military	1,314	1,310	1,310	1,310	1,310	-0.3%	-0.1%	0.0%	0.0%
Local									
General aviation	31,858	33,130	38,490	44,370	46,810	4.0%	3.9%	3.4%	2.6%
Military	1,897	1,890	1,890	1,890	1,890	-0.4%	-0.1%	0.0%	0.0%
TOTAL OPERATIONS	62,643	66,303	75,234	84,406	90,726	5.8%	3.7%	3.0%	2.5%
Instrument Operations	4,737	5,034	5,643	5,775	6,151	6.3%	3.6%	2.0%	1.8%
Peak Hour Operations	30	31	36	40	43	4.7%	3.9%	3.1%	2.6%
Cargo/mail (enplaned+deplaned tons)	42	43	46	51	51	2.0%	2.0%	2.0%	1.3%
Based Aircraft									
Single Engine (Nonjet)	72	73	76	80	84	1.2%	1.0%	1.0%	1.1%
Multi Engine (Nonjet)	6	8	8	7	6	33.3%	5.9%	1.6%	0.2%
Jet Engine	2	2	2	2	3	0.7%	1.0%	0.9%	2.7%
Helicopter	0	0	0	1	1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Other	0	0	1	1	1	0.0%	0.0%	0.0%	0.0%
TOTAL	80	83	87	91	96	3.6%	1.7%	1.3%	1.2%

B. Operational Factors

	Base Yr. Level	Base Yr. + 1yr.	Base Yr. + 5yrs.	Base Yr. + 10yrs.	Base Yr. + 15yrs.
Average aircraft size (seats)					
Air carrier	164	150	85	79	78
Commuter	46	46	50	48	45
Average enplaning load factor					
Air carrier	74%	70%	55%	74%	71%
Commuter	58%	60%	65%	67%	72%
GA operations per based aircraft	719	738	801	865	891