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Working Paper 2 – Aviation Activity Forecast

Chapter 2
Aviation Activity Forecast

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Sioux Gateway Airport
Sioux City, IA
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Prepared by RS&H, Inc. at the direction of the Sioux Gateway Airport Board of Trustees.

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2 Aviation Activity Forecast

2.1 Introduction

This chapter presents the methodology used to forecast aviation activity at Sioux Gateway Airport (SUX or the Airport). Aviation activity forecasting is an analytical and somewhat subjective process that provides the best estimates of order of magnitude traffic levels expected at SUX in the future. Unexpected future changes in local, regional and national economic conditions, the dynamics of the commercial and general aviation industry, as well as the ebbs and flows of the political environment within both the service area and the nation all contribute to the subjective nature of the forecasts developed in this chapter. Future facility improvements should be implemented as demand warrants rather than at set future years. This will allow the Airport to respond to changes in demand, regardless of the year in which those changes take place.

This chapter will present projected activity levels for various aviation traffic components (passenger, aircraft movements, and based aircraft) expected within the 20-year planning period from Fiscal Year (FY) 2024 to 2043 as well as the methodology used in the forecast analysis. The forecast analysis concludes with an activity demand projection that will be used in subsequent chapters to develop airport facility requirements to meet future needs. The forecast will be presented in five- and ten-year increments beginning with the base year of 2023 outward to 2028, 2033, and 2043. To properly plan for future facility development needs at the Airport, an understanding of the historical passenger, operational (passenger, general aviation, and military), and based aircraft activity was carefully examined. Cargo operations forecasts are not included in this analysis considering the low operating activity levels of cargo at SUX which are not expected to increase within the planning period.

Annually FAA prepares official forecasts of aviation activity for airports in the National Plan of Integrated Airport Systems (NPIAS) under the Terminal Area Forecast (TAF) . The TAF is an important planning tool used by the FAA for several internal planning and budgeting functions. When airport sponsors develop their own forecasts as part of planning studies such as a master plan approval FAA is required. In accordance with FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing instructions for Airport Actions, paragraph 706.b(3). "The sponsor's forecast must be consistent with the TAF values. To be consistent with the TAF, the sponsor's 5-year forecast should be within 10.0 percent of the TAF values, and a 10-year forecast should be withing 15.0 percent of the TAF values." Within the master plan process FAA is required to approve sponsor forecasts before they can be used to determine facility requirements or before going forward with an environmental document were forecasts are

required. If these stated thresholds are exceeded, FAA's forecast review process might move from the Airport's District Office to headquarters.

2.1.1 SUX at a National Level

At a national level, NPIAS classifies SUX as a non-hub primary commercial service airport, which means that SUX has more than 10,000 annual enplanements, but accounts for less than 0.05 percent of all commercial passenger enplanements nationally. SUX is subsidized by a federal program known as Essential Air Service (EAS) that maintains scheduled air service for smaller markets such as Sioux City. This program helps connect the local community to their destinations without requiring travel from more distant airports.

2.1.2 SUX at a State and Local Level

SUX, which is owned and operated by the City of Sioux City, falls under the classification of a commercial service airport in the Iowa State Aviation System Plan (SASP). The Airport is a significant vehicle in promoting economic development and enhancing connectivity within the region it serves. Situated in the northwest corner of Iowa, SUX serves as a key gateway for both business and leisure travelers.

The Airport's presence plays a pivotal role in supporting tourism, commerce, and various industries across the state and the surrounding local communities. By offering convenient air access, SUX attracts businesses to the area, leading to the establishment of new facilities, corporate headquarters, and jobs, while contributing to increased tax revenue for the state.

At a local level, SUX has a strong economic significance on the neighboring communities. It acts as a catalyst for the local economy, generating employment opportunities and attracting businesses that rely on efficient transportation networks. Moreover, the Airport drives growth in the hospitality sector, encouraging the establishment of hotels, restaurants, and other services catering to the needs of travelers and tourists passing through the region.

There are 2 airports within a 100.0 mile distance from SUX. Omaha's Eppley Airfield (OMA) is located 92.6 miles south of the Airport. Sioux Falls Regional Airport (FSD) is located 96.6 miles north of SUX. Both of these airports attract traffic from SUX based on economic factors which will be explained in the Forecast of Aviation Activity within **Section 2.4.3** of this report.

2.1.3 Forecast Framework

The base year for this forecast is the SUX Fiscal Year (FY) 2023 running July 1, 2022, through June 30, 2023. The forecasts created in this chapter are compared to the latest FAA TAF, which was published in January 2024. The FAA TAF provides data for the Federal Fiscal Year (FFY), which is defined as the period from October 1st of the previous year through September 30th of

the fiscal year. The 2024 TAF provides projections from FFY 2023 through FFY 2050[1]. The forecasts in this report provide data in FY format, except where otherwise identified.

2.2 Factors Affecting Aviation Demand

The first step in creating aviation activity forecasts is the compilation and analysis of relevant key economic qualitative and quantitative factors. These factors include key socioeconomic values for Sioux City, the cost of operating and utilizing air service as well as the historical correlations in the ebbs and flows of aviation activity at SUX.

2.2.1 Local Socioeconomic Trends

The 2023 Woods and Poole Economics, Inc. (W&P), economic and demographic data sets were used to provide forecasted information on key socioeconomic elements that impact air travel including: population, employment, personal income, and per capita personal income (PCPI) in the local region, statewide and nationally. For the purpose of this document, the Sioux City Metropolitan Statistical Area (Sioux City MSA) includes the five immediate counties within the proximity to the airport and the Sioux City MSA includes: Dakota County, NE, Dixon County, NE, Plymouth County, IA, Union County, SD and Woodbury County, IA.

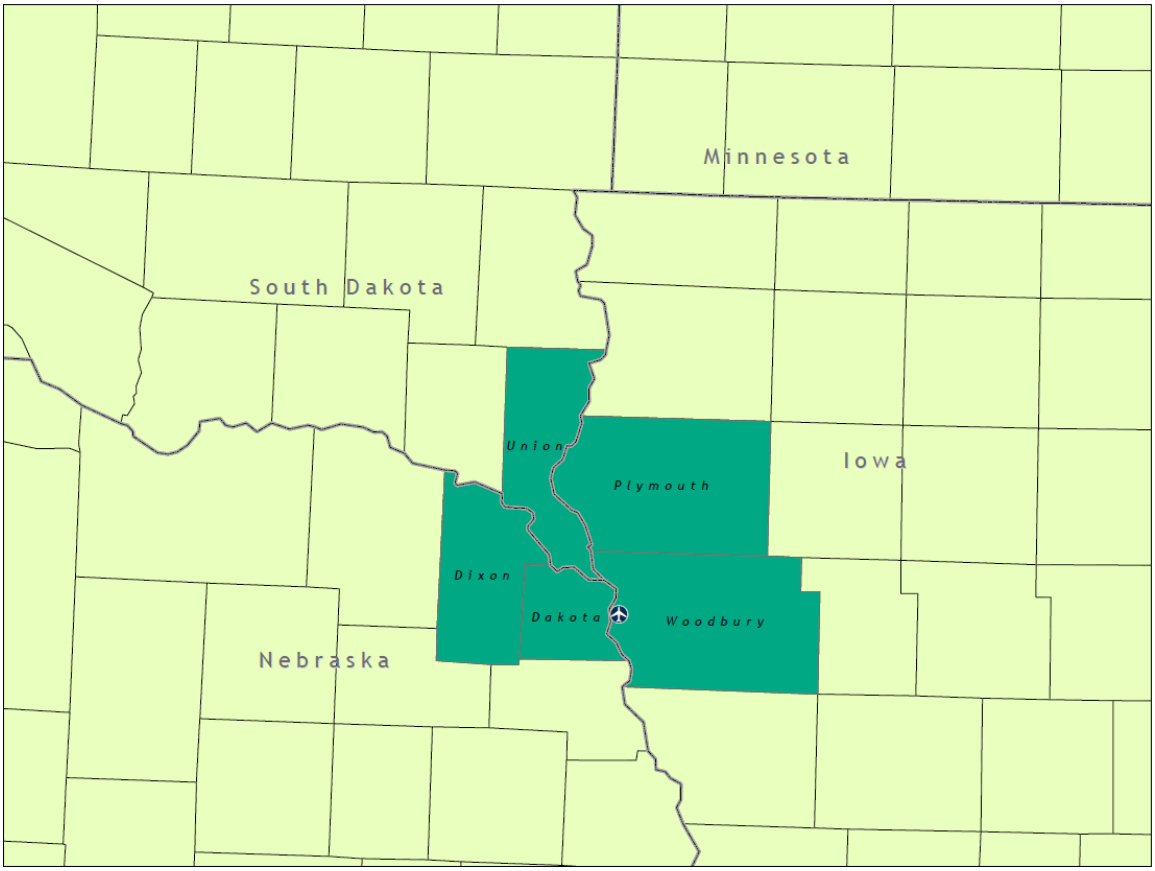
Potential for growth in commercial and general aviation operations can often be quantified when statistically compared with relevant key local, state, and national socioeconomic indicators and trends. For example, as regional manufacturing expands, so does employment associated with the growth in industry and regional per capita income as well as the propensity of the regional population to travel. Similarly, establishing headquarters, national businesses, healthcare, and/or educational facilities can further drive the population, jobs, employment and associated income of the Sioux City MSA. The presence of businesses and industries within the Sioux City MSA coupled with growth in population, employment, income, and manufactured goods provides a strong baseline for air service and its potential progression.

The following sections will compare the previously mentioned key socioeconomic elements of the Sioux City MSA to the state of Iowa, as SUX is in Iowa and most users and residents within the Sioux City MSA are Iowa residents.

Figure 2-1 illustrates the Sioux City MSA located across Iowa, Nebraska, and South Dakota.

[1] Terminal Area Forecast (TAF). Terminal Area Forecast (TAF) | Federal Aviation Administration. (n.d.). https://www.faa.gov/data_research/aviation/taf

Figure 2-1 Map of Sioux City MSA



Source: RS&H, 2023

2.2.1.1 Population

Sioux City is the fourth largest city in Iowa by population and sits on the banks of the Missouri river. It is home to Briar Cliff University, Morningside University and Western Iowa Tech Community College, among others. The population size of Sioux City has remained steady in the previous decades with a 0.29 percent annual growth rate since 2013[2] which is a lower than the average growth rate when compared to other similar cities within the US.

Like the historical trend, the forecast annual population growth rate for the Sioux City MSA remains fairly constant with a compound annual growth rate (CAGR) of 0.02 percent from 2023-2043, which is lower than the 0.25 percent forecasted for the state of Iowa. The Sioux City MSA population is expected to continue to grow at a slower rate compared to the rest of the US which has a CAGR of 0.6 percent over the 20-year planning period. **Table 2-1** depicts the forecasted population for the Sioux City MSA, Iowa excluding the Sioux City MSA, the state of Iowa, and for the nation.

[2] 2023 Woods and Poole Economics, Inc.

Table 2-1 Forecast – Population

	Population				
	Calendar Year	Sioux City MSA	Rest of Iowa	Iowa Total	U.S.
Historical	**2013**	170,199	2,931,846	3,102,045	316,668,273
	2017	172,036	2,990,608	3,162,644	326,541,427
	2020	175,580	3,014,991	3,190,571	331,511,512
Baseline	**2023**	175,163	3,036,037	3,211,200	335,547,000
Forecast					
+ 5 years	**2028**	176,121	3,085,814	3,261,935	346,778,000
+ 10 Years	**2033**	176,554	3,129,739	3,306,293	357,682,300
+ 15 years	**2038**	176,380	3,166,278	3,342,658	368,056,800
+ 20 years	**2043**	175,742	3,197,226	3,372,968	378,098,400
Compound Annual Growth Rate (CAGR)					
2013 - 2023		0.29%	0.35%	0.35%	0.58%
2023 - 2033		-0.02%	0.07%	0.06%	0.12%
2023 - 2043		0.02%	0.26%	0.25%	0.60%

Source: Woods & Poole Economics, Inc.; RS&H Analysis, 2023

2.2.1.2 Employment

Based on W&P data, the trades with the highest employment within the Sioux City MSA are manufacturing, health care and social assistance, and state and local government. The major employers in Sioux City are Tyson Foods, Sioux City Schools, Seaboard Triumph Foods, Bomgaars and MercyOne Siouxland.[3] The 185th Air Refueling Wing of the Iowa Air National Guard, stationed at SUX, follows closely behind as a top employer of the Sioux City MSA.

The employment forecast for the Sioux City MSA between CY[4] 2023 and CY 2043 has a CAGR of 0.31 percent which is below the rest of Iowa with an CAGR of 0.7 percent. This growth rate is similar to the Sioux City MSA growth rate between CY 2013 and CY 2023 which was 0.29 percent. The growth rate for the Sioux City MSA is also lower than the US which has an CAGR of 1.16 percent. This indicates that although the Sioux City MSA is expected to experience growth

[3] *Leading employers*. Sioux City Economic Development Department. (n.d.). https://locatesiouxcity.com/leading-employers
[4] Calendar Year

in the job market, it is projected to grow at a slower rate compared to other areas in the US and the remainder of the state of Iowa.

The projected job market growth rate in the Sioux City MSA likely results from a combination of factors including the diversification of the local economy, an increase in infrastructure development, and the rise of new industries such as e-commerce. It is important to note that these growth rates are only projections and may be subject to changes in economic conditions or other factors such as advances in technology and automation. **Table 2-2** depicts the forecasted employment totals for the Sioux City MSA, Iowa excluding the Sioux City MSA, the state of Iowa, and for the nation.

Table 2-2 Forecast – Employment

	Employment				
	Calendar Year	**Sioux City MSA**	**Rest of Iowa**	**Iowa Total**	**U.S.**
Historical	**2013**	110,712	1,908,774	2,019,486	182,325,097
	2017	110,866	1,950,993	2,061,859	196,394,098
	2020	109,266	1,901,149	2,010,415	195,301,627
Baseline	**2023**	113,974	2,015,912	2,129,886	211,873,700
Forecast					
+ 5 years	**2028**	116,919	2,109,823	2,226,742	226,839,600
+ 10 Years	**2033**	118,843	2,184,295	2,303,138	240,399,800
+ 15 years	**2038**	120,313	2,252,827	2,373,140	253,729,500
+ 20 years	**2043**	121,363	2,316,222	2,437,585	266,858,200
Compound Annual Growth Rate (CAGR)					
2013 - 2023		0.29%	0.55%	0.53%	1.51%
2023 - 2033		0.42%	0.59%	0.58%	0.82%
2023 - 2043		0.31%	0.70%	0.68%	1.16%

Source: Woods & Poole Economics, Inc.; RS&H Analysis, 2023

2.2.1.3 Personal Income

Between CY 2013 and CY 2023, the growth rate on personal income within the Sioux City MSA was 2.4 percent. Based on the W&P data, during the planning period, the personal income

CAGR for the Sioux City MSA is projected to be 1.3 percent. Though lower than previous trends, this is still a positive indicator, as it suggests that individuals in the Sioux City MSA are likely to experience an increase in their personal income over the next two-decade period. However, this growth rate is lower than the national average of 2.1 percent. **Table 2-3** depicts the forecast of total personal income rates for the Sioux City MSA, Iowa excluding the Sioux City MSA, the state of Iowa, and for the nation.

Table 2-3 Forecast – Personal Income

	Personal Income (Thousands 2012 Dollars[5])				
	Calendar Year	**Sioux City MSA**	**Rest of Iowa**	**Iowa Total**	**U.S.**
Historical	**2013**	$7,023,340	$125,934,203	$132,957,543	$13,999,672,430
	2017	$7,660,540	$133,230,252	$140,890,792	$15,876,192,140
	2020	$8,793,471	$144,154,658	$152,948,129	$17,825,517,050
Baseline	**2023**	$8,924,799	$147,757,501	$156,682,300	$18,563,689,000
Forecast					
+ 5 years	**2028**	$9,556,919	$161,167,181	$170,724,100	$20,757,864,000
+ 10 Years	**2033**	$10,245,647	$175,514,653	$185,760,300	$23,112,464,000
+ 15 years	**2038**	$10,925,445	$190,204,555	$201,130,000	$25,609,579,000
+ 20 years	**2043**	$11,589,374	$205,181,226	$216,770,600	$28,247,361,000
Compound Annual Growth Rate (CAGR)					
2013 - 2023		2.4%	1.6%	1.7%	2.9%
2023 - 2033		0.1%	0.2%	0.2%	0.4%
2023 - 2043		1.3%	1.7%	1.6%	2.1%

Source: Woods & Poole Economics, Inc.; RS&H Analysis, 2023

The state of Iowa outside of the Sioux City MSA is forecasted to have a CAGR of 1.7 percent, which is higher than the entire state of Iowa but still lower than the national average. This is potentially caused because of the economic outlook for some of the industries located in Iowa based on the common issue of lack of workforce and the emerging trend in automation.

[5] The dollar figures for total personal income and PCPI were adjusted (chained) to 2012 dollars. This method of adjusting real dollar amounts for inflation over time maintains an even comparison of dollar values over the long historical period. These independent variables were collected from W&P.

2.2.1.4 Per Capita Personal Income

Historically, between CY 2013 and CY 2023 the Sioux City MSA had a CAGR of 2.13 percent which is above what is forecasted in the planning period. Between the years CY 2023 and CY 2043, the PCPI CAGR for the Sioux City MSA is expected to be 1.3 percent, which is slightly lower than the projected growth rate for the rest of Iowa and Iowa which has a CAGR of 1.4 percent. The growth rate for the Sioux City MSA is also lower than the US, which is forecasted at 1.5 percent. As stated previously in **Section 2.2.1.3**, this could be due to fluctuations in the major industries located in the state of Iowa. Nevertheless, the projected growth rates for PCPI in the Sioux City MSA and the state indicate a positive trend that could translate to higher standards of living for residents in Iowa over the next two decades.

It is worth noting that changes in economic conditions, government policies, and other factors could impact the growth rates for PCPI in the Sioux City MSA, the rest of Iowa, and the US as a whole. Even so, the projected growth rates provide valuable insights into the potential trajectory of income growth in these regions. **Table 2-4** depicts the forecasted per capita income for the Sioux City MSA, Iowa excluding the Sioux City MSA, the state of Iowa, and for the nation.

Table 2-4 Forecast – Per Capita Personal Income

	Per Capita Personal Income (in 2012 Dollars)				
	Calendar Year	**Sioux City MSA**	**Rest of Iowa**	**Iowa Total**	**U.S.**
Historical	**2013**	$41,265	$42,954	$42,861	$44,209
	2017	$44,529	$44,550	$44,548	$48,619
	2020	$50,082	$47,813	$47,938	$53,770
Baseline	**2023**	$50,951	$48,668	$48,792	$55,324
Forecast					
+ 5 years	**2028**	$54,263	$52,228	$52,338	$59,859
+ 10 Years	**2033**	$58,031	$56,080	$56,184	$64,617
+ 15 years	**2038**	$61,943	$60,072	$60,171	$69,581
+ 20 years	**2043**	$65,945	$64,175	$64,267	$74,709
Compound Annual Growth Rate (CAGR)					
2013 - 2023		2.1%	1.3%	1.3%	2.3%
2023 - 2033		0.2%	0.2%	0.2%	0.3%
2023 - 2043		1.3%	1.4%	1.4%	1.5%

Source: Woods & Poole Economics, Inc.; RS&H Analysis, 2023

2.2.2 Oil and Jet Fuel Prices

The association between jet fuel prices and aviation demand is complex and can be influenced by a range of economic, political, and environmental factors. Jet fuel price is a critical factor in the aviation industry because it has a significant impact on airlines' operating costs and profitability. The demand for aviation fuel is driven by the level of air travel and the size of active airline fleets. In general, jet fuel prices tend to fluctuate in response to global oil prices, geopolitical tensions, and market supply and demand conditions. At the start of the SARS-CoV-2 Novel Corona Virus Pandemic (COVID-19 Pandemic) in April 2020, when demand was at a record low, fuel prices reached a low price of $1.03 per gallon.

Industry and economic changes across the world, such as the Russia-Ukraine conflict, have caused oil prices to rise dramatically, reaching a peak in CY 2022. Oil prices have fallen since then but remain elevated above historical averages. When fuel prices are high, airlines often respond by reducing capacity or raising ticket prices to offset the increased costs. Conversely, when fuel prices are low, airlines may expand their operations or offer lower fares to attract more passengers. **Table 2-5** depicts the forecast of oil and jet fuel prices during the Forecast Period.

Table 2-5 Forecast – Fuel and Oil Price

Comparison of Fuel and Oil Price Projections (2022 Dollars)			
Calendar Year	**U.S. Refiner's Acquisition Cost ($/Barrel) (a)**	**Crude Oil Prices ($/Barrel) (b)**	**Jet Fuel Prices ($/Gallon)**
2023	$84.29	$92.00	$2.71
2028	$89.68	$89.00	$2.50
2033	$98.57	$92.00	$2.48
2038	$104.30	$95.00	$2.37
2043	$112.70	$98.00	$2.29
CAGR 2023-2043	**1.5%**	**0.3%**	**-0.8%**

(a) Brent Spot Price (rounded)

(b) Monthly census of all U.S. refiners collecting the net acquisition costs and volumes of crude oil, both domestic and imported, on a corporate regional basis (not for individual refineries); data reported in 2023 FAA Aerospace Forecast.

Source: U.S. Energy Information Administration; FAA Forecast 2023-2043

2.2.3 Average Airfares

After labor, fuel is an airline's second-largest expense. Volatile prices of oil and jet fuel eventually end up affecting the consumer, which in this case comes in the form of increased airfares. Airfare prices are volatile and can change by the minute due to travel demand, available

capacity, seasonality, airlines' costs and more. After airfares dropped significantly in CY 2020 due to decreased demand caused by the COVID-19 Pandemic, demand for travel began rebounding in CY 2022 and returned to and/or surpassed pre-pandemic levels in mid-CY 2023. The increase in travel is a welcome trend for the airline industry which struggled to maintain profits; however, the law of supply and demand affects the customer as more demand drives higher fuel prices. Around the US, airfares have risen recently, particularly over the past 18 months. Both the rising costs of aviation fuel and airline debt following the COVID-19 Pandemic shutdown have impacted average ticket prices causing them to steadily increase since the start of CY 2022.

Table 2-6 compares SUX historical average fares to U.S. national fares from FY 2010 to FY 2023. As shown, SUX fares are 28.1 percent higher on average then U.S. national airfares for this 14-year time period. This high airfare differential is due to the Airport's participation in the EAS program which as previously mentioned, provides subsidies for air carriers to fly to smaller markets and in return making them a part of the National Airspace System (NAS). EAS subsidies provide air carriers with funds to operate a restricted number of operations based on the annual grants they are provided. Limited service creates higher demand which in turn increases average fares at the Airport compared to the national average. The EAS program will be further discussed in the Forecast of Aviation Activity section of this report.

Table 2-6 Historical Average Airfare – SUX Compared to the U.S

	Average Airfares	
Fiscal Year	**SUX**	**U.S.**
2010	$222	$154
2011	$234	$166
2012	$225	$178
2013	$214	$180
2014	$217	$188
2015	$198	$186
2016	$239	$174
2017	$206	$169
2018	$222	$166
2019	$222	$169
2020	$222	$164
2021	$175	$123
2022	$209	$166
2023	$237	$191
AVERAGE	**$217**	**$170**

Source: U.S. DOT

2.3 Historical Aviation Activity Review

This section provides detail of the historical aviation activity at SUX including passenger enplanement activity, and aircraft operations reported annually. It will identify important trends and events that are likely to impact future air service demand at SUX.

2.3.1 Historical Passenger Enplanements

The Sioux City MSA is the principal region in western Iowa, northeastern Nebraska, and southeastern South Dakota and it is a key industrial and economic driver for the region. In addition, Sioux City hosted over 1.2 million visitors in CY 2021[6]. A few of the main visitor attractions in Sioux City include the Lewis and Clark Interpretive Center, the Sioux City Art Center, the Sergeant Floyd Monument and the Mid-America Museum of Aviation and Transportation. The region also attracts visitors due to its proximity to the Missouri River which offers recreational activities and river boat cruises.

Since FY 2013, passenger activity at SUX has produced stages of growth as well as a few periods of decline which can be tied to a variety of factors the most recent being the global economic downturn due the COVID-19 Pandemic. **Table 2-7** and **Figure 2-2** depict historical passenger activity at SUX from FY 2013 to FY 2023.

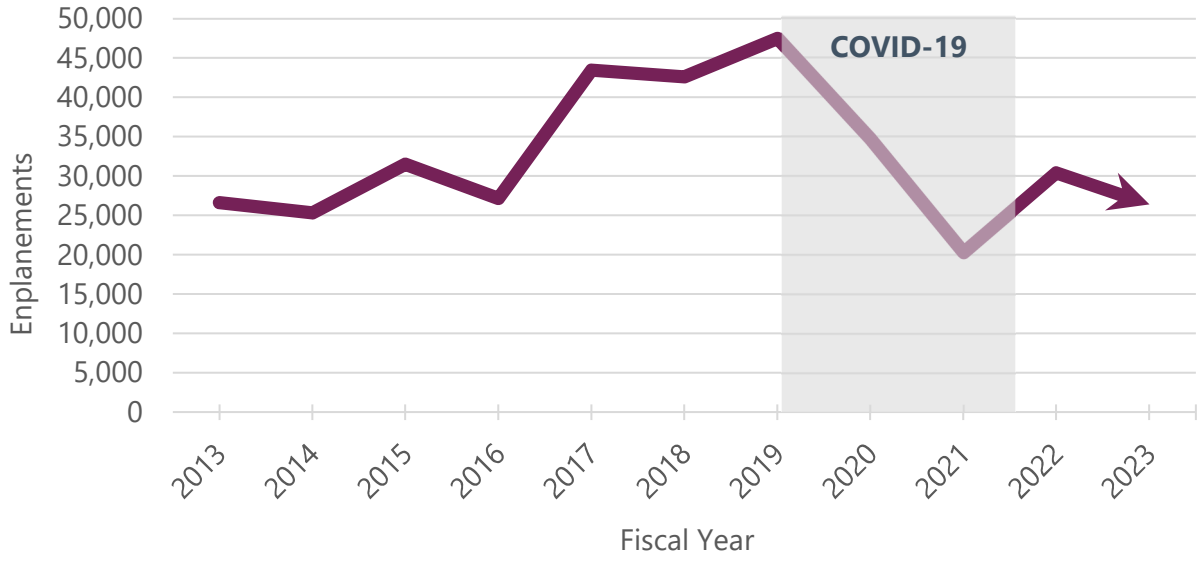
Table 2-7 SUX Historical Enplanements

Fiscal Year	Enplanements	Year over Year Change
2013	26,631	
2014	25,331	-5%
2015	31,506	24%
2016	27,154	-14%
2017	43,480	60%
2018	42,607	-2%
2019	47,505	11%
2020	34,710	-27%
2021	20,289	-42%
2022	30,419	50%
2023	26,380	-13%
2013-2023 CAGR	**-0.1%**	

Source: Airport Records

[6] Sioux City Journal, 2021

Figure 2-2 SUX Historical Enplanements



Source: Airport Records

2.3.2 Historical Aircraft Operations

An aircraft operation is defined as either a takeoff or a landing. Therefore, the typical flight consists of a landing and a takeoff for a total of two operations. The FAA records annual aircraft operations in the following five categories:

Figure 2-3 Aircraft Operation Categories

Air Carrier
An air carrier operation involves an aircraft with a seating capacity of more than 60 seats or a cargo payload capacity of more than 18,000 pounds. Additionally, air carrier operations are those carrying passengers or cargo for hire or compensation.

Air Cargo
Air cargo operations are those operations by aircraft transporting only air cargo. These include operations by integrated carriers, like FedEx and UPS, and all-cargo Carriers such as Cargolux.

General Aviation
General aviation (GA) operations are any type of operation that is not included in one of the previous defined categories. These are typically privately owned aircraft used for training, recreation, business, or personal use.

Military
Military operations include all classes of U.S. military or federal government aircraft.

Air Taxi/Other
Air Taxi/Other operations can represent scheduled commercial flights, nonscheduled commercial flights, and charter flights with aircraft with 60 seats or fewer or a cargo payload capacity of 18,000 pounds or less. Additionally, air taxi/other operations can include those carrying passengers or cargo for hire or compensation, state flights, and or aerial work.

Source: RS&H 2023

As shown in **Table 2-8,** total aircraft operations at SUX have decreased at a CAGR of 0.6 percent from FY 2018-FY 2023. Operations can have natural fluctuations based on current aviation trends such as airlines entering/leaving markets or up-gauging aircraft to accommodate more seats but have less frequency. Airfield construction also plays a significant role operationally. For SUX, the main runway was closed during the 2022 construction season (April-October) which dramatically reduced military operations that year and may have redirected other aircraft to neighboring airports to avoid the closure.

Additionally there are two important factors that play a role in how historical operations are recorded in **Table 2-8** and **Figure 2-4**. The first is that SkyWest Airlines (SkyWest) operates at SUX using the Bombardier CRJ-200, a 50-seat aircraft that is defined by the FAA as an air taxi and not an air carrier[7]. The air carrier and air taxi columns fluctuate in numbers based on the airlines within the market at the time and type of aircraft that is operated. It is also dependent on the source of the data. Airport records record SkyWest operations as an air carrier while OPSNET[8] identifies the operation as an air taxi. Also, a new flight school began operation at SUX in the beginning of CY 2023 and has since increased total GA operations significantly.

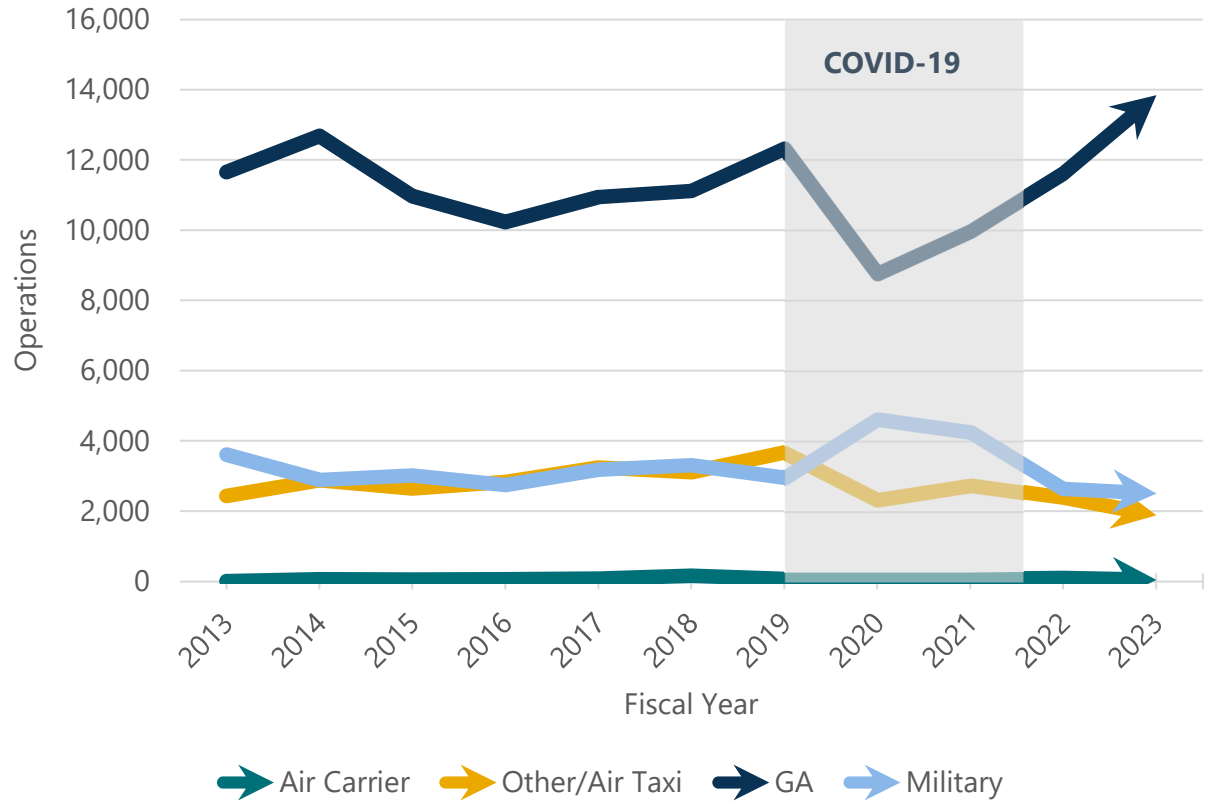
Table 2-8 SUX Historical Operations

Fiscal Year	Itinerant				Local		Total
	Air Carrier	Other/Air Taxi*	GA	Military	GA	Military	
2013	12	2,439	8,808	2,642	2,849	967	17,717
2014	69	2,883	9,132	2,188	3,556	704	18,532
2015	56	2,644	8,945	2,325	2,028	696	16,694
2016	62	2,839	8,296	2,047	1,942	696	15,882
2017	87	3,243	8,577	2,126	2,368	1,059	17,460
2018	165	3,113	9,018	2,293	2,098	1,017	17,704
2019	72	3,676	9,113	2,014	3,208	936	19,019
2020	72	2,334	6,220	2,958	2,540	1,668	15,792
2021	74	2,746	7,634	2,568	2,338	1,685	17,045
2022	104	2,388	8,742	1,605	2,864	1,032	16,735
2023	38	1,885	7,506	1,567	6,339	936	18,271
CAGR	**12.2%**	**-2.5%**	**-1.6%**	**-5.1%**	**8.3%**	**-0.3%**	**0.3%**

Note: Regional commercial air carriers that operate a 60 seat or less aircraft like the CRJ-200 or EMB-145 are considered air taxi.
Source: FAA OPSNET; RS&H Analysis, 2023

[7] Aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds, carrying passengers or cargo for hire or compensation including US and foreign-flagged carriers.
[8] The Operations Network – The official source of FAA air traffic operations and delay data.

Figure 2-4 SUX Historical Operations



Source: FAA OPSNET, RS&H Analysis, 2023

2.4 Commercial Passenger Forecast

This section presents the assumptions, approach, and results of the passenger activity forecasts for SUX for the period between FY 2023 through FY 2043 (the "Forecast Period").

The following data sources were used in this analysis:

- Historical and projected information on population, employment, and real income for the Sioux City MSA from W&P.
- Cirium Diio market data on scheduled passenger operations to determine existing scheduled service and historical non-stop service.
- Airline, ground handler and other economic stakeholder interviews.

2.4.1 The "Big Picture"

According to the Siouxland Chamber of Commerce, which serves the tri-state area of Iowa, South Dakota, and Nebraska, Siouxland ranked first in the nation in 2022 for economic

development by total number of projects and total number of projects per capita.[9] Among some of the projects that earned this ranking include a Royal Canin facility in North Sioux City, SD, a new 40,000 sq ft Aviation Center operated by Oracle Aviation located at SUX, and an array of projects within the Siouxland Regional Trail System. These projects are expected to expand career opportunities for current employees, attract new talent to the area, increase tourism, and contribute to a higher quality of life in the Siouxland region. According to the Sioux City Regional Convention & Visitors Bureau, 1.3 million people visited Sioux City in FY 2023, a 7 percent increase from FY 2022[10] partially attributed to the surplus of economic development opportunities in the tri-state area.

A number of challenges have arisen post COVID-19 Pandemic such as a lack of available workforce to meet the needs of local employers already constrained in the Sioux City MSA during the current recovery. The lack of a current workforce combined with a slow population growth have created slower productivity in certain trades such as manufacturing. Inflation continues to be a burden at the national level, and this could result in less disposable income for travelers across the US that could potentially choose Sioux City as a travel destination. A recession could also slow the rate of recovery of the Sioux City MSA's businesses and present additional challenges.

To combat some of these challenges, a variety of incentives are offered within the tri-state region to strengthen economic vitality. Specifically, the Iowa Economic Development Authority offers a wide variety and numerous programs and services such as Community Facilities and Services, Employment Transportation, Energy Infrastructure Revolving Loan Program, and Innovation Acceleration Fund.[11] These programs will continue to support new or expanding businesses to help grow the local economy and increase the attractiveness of the Sioux City MSA as a place to live and visit. These initiatives and investments along with economic challenges are considered in the forecast analysis.

2.4.2 Passenger Forecast Assumptions

The passenger forecasts are based on several key assumptions that were developed from information collected from interviews with SkyWest Airlines personnel, discussions with Airport staff, as well as industry knowledge. This section describes the passenger forecast assumptions that were applied in this forecast. More detailed assumptions specific to a particular activity

[9] Teresa. (2023, March 7). Siouxland ranks first in the nation for Economic Development for eleventh time. Siouxland Chamber. https://siouxlandchamber.com/blog/siouxland-ranks-first-in-the-nation-for-economic-development-for-eleventh-time/
[10] Butz, D. (2023b, November 14). Tourism bureau director: More than 1.3M people visited siouxland in last fiscal year. Sioux City Journal. https://siouxcityjournal.com/news/local/government-politics/siouxland-visitors-tourism/article_d5e6f54c-8243-11ee-8cdc-1708dd36833b.html
[11] IEDA Business & Community Programs. Iowa Economic Development Authority. (n.d.). https://www.iowaeda.com/all-programs/

category are described in the sections pertaining to those categories. The following forecast assumptions were used in preparing the passenger forecasts separated into categories.

General

- No new major economic downturn, such as the one that occurred in the Great Recession (CY 2008-CY 2011). Local, national, and international economies will periodically increase and decrease the pace of growth in accordance with business cycles. However, it is assumed that over the 20-year Forecast Period, the increase and decrease growth periods will offset each other so that the adjusted economic forecasts will be realized.
- The economies which comprise the Sioux City MSA will grow in accordance with the W&P demographic and economic projections used for these forecasts.
- The EAS program or a similar program will continue to ensure passenger service to the Sioux City community.
- No nighttime curfews will take effect in SUX.
- Environmental regulations will not be so extreme as to significantly constrain air transportation
- The FAA will successfully implement any required changes and improvements for the national airspace system to accommodate the unconstrained forecast of aviation demand.

Inflation

- The US rate of inflation will continue to decline in CY 2024 and CY 2025 as the COVID-19 Pandemic manufacturing and supply-chain imbalances begin to equalize and the aggregate supply and demand begin to balance.
- The Consumer Price Index (CPI)[12] which measures inflation in the Sioux City MSA has risen due to increased demand for consumer goods and manufacturing slowdowns related to the COVID-19 Pandemic, will continue to follow national trends, and minimally affect the demand for air travel to and from Iowa.
- The US economy will remain robust and despite temporary rising cost of airline tickets, rental cars, fuel, and good and services, the visitor and business travel industry will overcome these challenges.

COVID-19 Pandemic

- North American airlines will continue to lead the industry recovery.
- Sioux City's traveler related businesses, which were disproportionately impacted by COVID-19 Pandemic, will continue to recover.

[12] Published by the US Department of Labor Statistics

Russia-Ukraine Conflict/Israel-Hamas War

- The Russia-Ukraine conflict and Israel-Hamas War will not impact the long-term growth of air transport from Iowa to domestic destinations.
- US consumer confidence and economic activity are not significantly impacted by the Russia-Ukraine conflict and Israel/Hamas War.

2.4.3 Background of Historical SUX Passenger Air Carrier Activity

To help explain the forecast approach, a background of the Airport's historical passenger air carrier activity was prepared. This section provides context of the historical trends that have occurred at SUX and how they shaped the forecast of commercial passenger aviation activity.

2.4.3.1 Essential Air Service (EAS)

As previously detailed in **Section 2.1.1**, SUX is part of the national Essential Air Service, or EAS, program established by the U.S. Congress. This program was created so small communities, like Sioux City, have access to the national air transportation system. The government subsidizes the service to these communities and airlines submit bids to provide the service every two or four years, generally, depending on the contract. A challenge to service in these locations is the airfare prices are commonly higher as can be seen in **Table 2-6**. The average SUX airfare is 28.1 percent higher than the U.S. national average over the past decade.

SUX entered the EAS program in 2012 with American Airlines (American) providing service to Chicago O'Hare International Airport (ORD). The daily services were augmented by the introduction of service to Dallas/Ft. Worth International Airport (DFW) also by American in FY 2016 which increased enplanements by 60% at SUX as can be seen in **Table 2-7**. In 2021, American ceased services at the Airport and EAS rights were transferred to United Airlines (United) via its SkyWest Airlines (SkyWest) subsidiary to ORD and Denver International Airport (DEN). American's 3 daily services out of SUX which were replaced by United's 2 daily services consequently caused enplanements to drop by 41.5 percent. United's decision not to pursue a 3rd daily service from SUX[13] was likely due to softened passenger demand along with a pilot shortage during the COVID-19 Pandemic and the fact that capacity restrictions began to occur due to the parking/storage of aircraft also related to the Pandemic.

Despite the challenges the COVID-19 Pandemic brought to the aviation industry, SkyWest submitted a proposal in the 4th quarter of 2023 to continue air service at SUX for the following 3 years[14]. With Airport's EAS 3-year contract ceasing in 2023, the U.S DOT reselected SkyWest to continue service at SUX from January 1, 2024 through December 31, 2026, with at least 12

[14] Takhtadjian, J., & Pokett, A. (2023, November 3). SkyWest submits bid to continue flights out of Sioux Gateway. SiouxlandProud. https://www.siouxlandproud.com/news/local-news/skywest-submits-bid-to-continue-flights-out-of-sioux-gateway/#:~:text=Last%20year%2C%20SkyWest%20dropped%20service,the%20number%20of%20required%20flights.

round-trip flights each week. This contract awarded SkyWest for grants in the amounts of $5.3 million in 2024, $5.7 million in 2025, and $6.1 million in 2026[15].

2.4.3.2 Regional Average Fares and Load Factors

Average fares and load factors for SUX and other regional competing airports can be a good indicator that passengers may be selecting alternative airports due to higher prices and less consumer choice in air carrier and market availability. This occurrence known as traffic leakage will be discussed in the methodology section of this report.

Table 2-9 and **Table 2-10** show that during the period of FY 2014 to FY 2023, the average airfares at SUX were higher than OMA and FSD at 17 percent and 8 percent higher, respectively. The load factor remained just slightly lower with a 9 percent difference from OMA and 11 percent from FSD.

Table 2-9 SUX Historical Average Airfare Compared to Surrounding Airports

Year	AVERAGE AIRFARE COST				
	SUX	OMA	FSD	% Diff – OMA	% Diff – FSD
2014	$251.92	$213.71	$234.01	15%	7%
2015	$236.06	$225.24	$246.76	5%	-5%
2016	$282.05	$222.52	$250.80	21%	11%
2017	$246.06	$211.55	$239.32	14%	3%
2018	$263.68	$203.60	$231.57	23%	12%
2019	$263.38	$201.04	$245.03	24%	7%
2020	$263.41	$203.15	$229.72	23%	13%
2021	$208.43	$164.63	$181.47	21%	13%
2022	$245.58	$208.62	$223.73	15%	9%
2023	$275.91	$235.33	$258.04	15%	6%
AVERAGE	**$253.65**	**$208.94**	**$234.05**	**17%**	**8%**

Source: U.S. DOT O&D Data; RS&H, 2023

[15] Irvine, B. (2023, December 23). U.S. dot selects SkyWest as Essential Air Service Provider for Sioux Gateway Airport. https://www.ktiv.com. https://www.ktiv.com/2023/12/23/us-dot-selects-skywest-essential-air-service-provider-sioux-gateway-airport/

Table 2-10 SUX Historical Load Factor Compared to Surrounding Airports

Year	LOAD FACTOR (percent)				
	SUX	OMA	FSD	% Diff – OMA	% Diff – FSD
2014	78	82	85	-5%	-10%
2015	79	83	86	-4%	-8%
2016	74	84	85	-13%	-15%
2017	82	79	82	4%	0%
2018	76	83	83	-9%	-9%
2019	76	81	84	-6%	-10%
2020	68	74	77	-10%	-14%
2021	52	67	65	-27%	-24%
2022	77	81	81	-6%	-5%
2023	74	84	84	-13%	-13%
AVERAGE	**74**	**80**	**81**	**-9%**	**-11%**

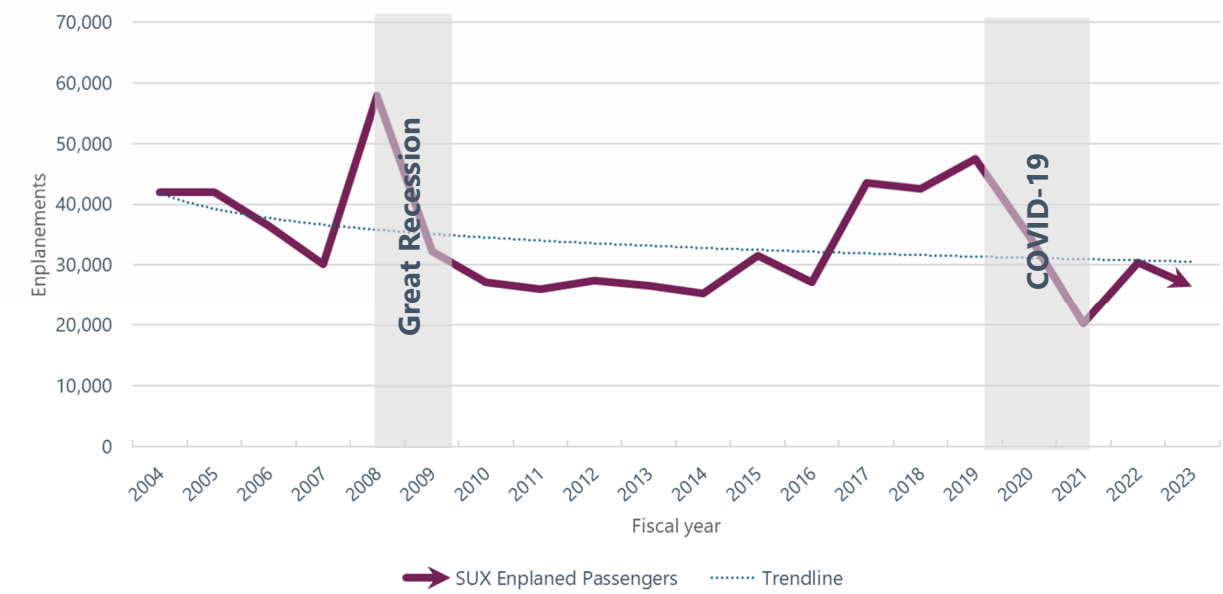
Source: U.S. DOT T-100 Data; RS&H, 2023

2.4.3.3 SUX Historical Commercial Air Service

The air carriers serving SUX historically in the last 20 years included Northwest Airlines (Northwest) (mainline and regional partner Endeavor Airlines) serving Minneapolis/St. Paul International Airport (MSP). Northwest had a nearly 100 percent market share at SUX from FY 2004 through FY 2010 only interrupted by a brief presence of Frontier Airlines and their regional partner Lynx Aviation which occurred in FY 2008 with service to DEN. After the merger of Delta Air Lines and Northwest in 2008 (which discontinued the Northwest brand in 2010), Delta continued operations to MSP and discontinued service after SUX became part of the EAS program in FY 2012. At that point, American was awarded the EAS contract with service to ORD.

In the last 20 years, 4 legacy carrier and 1 low-cost carrier (LCC) have served the Airport to 4 large hub destinations. After becoming part of the EAS program, the Airport operated 2 daily departures until FY 2017 when American added a service to DFW in addition to the existing 2 services to ORD. SUX had 3 daily departures until FY 2021 when United was awarded EAS services. United scaled back departures to 2 per day during the COVID-19 Pandemic until present day. A historical pattern at the Airport has been observed which consists of a rising number of departures and passengers until an economic shock occurs causing the carrier serving the airport to reduce frequencies. The Airport's enplanements for the past 20 years since FY 2004 have fluctuating between a 25,000 and 58,000 enplaned passengers with peaks occurring just prior to the Great Recession and COVID-19 Pandemic and a slightly declining trend as can be observed in **Figure 2-5.**

Figure 2-5 Historical Commercial Passenger Activity at SUX



Source: U.S. DOT T-100 Data

2.4.4 Forecast Methodology

A market share approach was selected to forecast enplaned passenger traffic at SUX. This approach was selected after an analysis of the inconsistent historic passenger enplanement trends indicating a decline in passenger traffic at SUX and an increment of enplanements at OMA and FSD. This passenger growth in OMA and FSD is partly driven by the fact that the majority of travelers flying out of the Sioux City MSA opt to travel from those airports, an occurrence known in the airline industry as traffic leakage. A true market estimate analysis prepared in 2020 stated that 81.0 percent of travelers residing in the Sioux City MSA leaked to other regional airports for air travel including OMA (64 percent) and FSD (13 percent).

Destinations and carrier choice is one of the reasons that passengers leak from SUX to other airports. In 2023, OMA offered 23 non-stop destinations and FSD 17 compared to 2 from SUX. Both OMA and FSD also offered Ultra-Low-Cost Carrier (ULCC) service from Frontier, Allegiant Air (both from FSD and OMA) and Sun Country (to OMA). Between FY 2016 and FY 2023, enplaned passengers at SUX declined 75.3 percent. This decline began to occur right after Southwest Airlines (Southwest) began to operate from OMA in 1995 which brought lower fares to the region.

The approach to calculating enplaned passengers using a market share analysis included gathering historical enplaned passenger numbers for SUX, OMA and FSD from FY 2000 through FY 2023 and determining the percent of passenger traveling from each airport as can be observed in **Table 2-11**.

Table 2-11 Historical Market Share – Enplanements

Fiscal Year	Enplaned Passengers				Market Share		
	SUX	OMA	FSD	TOTAL	SUX	OMA	FSD
2000	74,716	1,889,579	310,009	2,274,304	3.3%	83.1%	13.6%
2001	65,454	1,897,186	313,111	2,275,751	2.9%	83.4%	13.8%
2002	50,935	1,652,801	231,715	1,935,451	2.6%	85.4%	12.0%
2003	46,546	1,759,842	263,387	2,069,775	2.2%	85.0%	12.7%
2004	42,043	1,848,341	299,308	2,189,692	1.9%	84.4%	13.7%
2005	42,027	2,011,821	343,016	2,396,864	1.8%	83.9%	14.3%
2006	36,533	2,110,384	364,157	2,511,074	1.5%	84.0%	14.5%
2007	30,160	2,126,802	365,086	2,522,048	1.2%	84.3%	14.5%
2008	57,880	2,201,196	394,084	2,653,160	2.2%	83.0%	14.9%
2009	32,205	2,108,929	335,954	2,477,088	1.3%	85.1%	13.6%
2010	27,185	2,076,508	331,670	2,435,363	1.1%	85.3%	13.6%
2011	25,987	2,096,323	376,116	2,498,426	1.0%	83.9%	15.1%
2012	27,434	2,054,474	466,840	2,548,748	1.1%	80.6%	18.3%
2013	26,631	1,984,904	447,647	2,459,182	1.1%	80.7%	18.2%
2014	25,331	2,005,193	481,681	2,512,205	1.0%	79.8%	19.2%
2015	31,506	2,009,521	483,625	2,524,652	1.2%	79.6%	19.2%
2016	27,154	2,046,558	483,237	2,556,949	1.1%	80.0%	18.9%
2017	43,480	2,166,957	505,342	2,715,779	1.6%	79.8%	18.6%
2018	42,607	2,356,905	529,243	2,928,755	1.5%	80.5%	18.1%
2019	47,505	2,472,697	534,126	3,054,328	1.6%	81.0%	17.5%
2020	34,710	1,779,660	433,297	2,247,667	1.5%	79.2%	19.3%
2021	20,289	1,238,020	353,210	1,611,519	1.3%	76.8%	21.9%
2022	30,419	2,101,587	571,309	2,703,315	1.1%	77.7%	21.1%
2023	26,380	2,340,504	607,912	2,974,796	0.9%	78.7%	20.4%
Compound Annual Growth Rate (CAGR)							
2000-2023	**5.3%**	**-1.1%**	**-3.3%**	**-1.3%**			

Source: U.S. DOT T-100 Data, Airport Records, Compiled by RS&H 2024

The Airport's historical market share for the region from FY 2000 to FY 2023 indicates a pattern of increasing enplaned passenger activity prior to economic shocks events (the Events of September 11th, the Great Recession, and the COVID-19 Pandemic) and declines in the years that follow. Otherwise, the Airport's market share trend is relatively flat, especially after the Great Recession from FY 2010 to FY 2023. It can be observed, however, that in a high growth economic period as can be seen between FY 2017 and FY 2019 (when American added 1 daily departure to DFW), the Airport's market share increased from 1.1 percent in FY 2016 to 1.5/1.6 percent in the period between FY 2017 and FY 2020 prior and at the beginning of the COVID-19 Pandemic. That share dropped through the COVID-19 Pandemic and registered at 0.9 percent in FY 2023. This decline in market share is an indication that travelers in the Sioux City MSA started to travel from alternative airports including OMA and SFD, a trend which began at the beginning of the COVID-19 Pandemic and presently continues at the Airport.

In order to estimate enplaned passenger for SUX, the first step was to project total enplaned passengers for the combined SUX, OMA and FSD airports for a 20-year period between FY 2024 and FY 2043 using the same CAGR of growth that the combined enplaned passengers grew by from these 3 airports from the historical period between FY 2000 through FY 2023, 1.2 percent. The second step was to estimate of FY 2024 enplaned passengers at SUX was conducted based on actual enplanements from July through December 2023 and an extrapolation of passengers based on scheduled seats and load factors scheduled for the Airport from January 2024 and June 2024. This estimate can be seen in

Table 2-12.

Table 2-12 SUX 2024 Enplanement Projection

SUX FY 2024 Enplaned Passenger Projection					
Month	**Actual**	**Scheduled Seats**	**Average LF**	**Projection**	**Total**
July	2,185				2,185
August	2,526				2,526
September	2,314				2,314
October	2,406				2,406
November	2,428				2,428
December	2,503				2,503
January		3,050	73.8%	2,251	2,251
February		2,900	73.8%	2,140	2,140
March		3,100	73.8%	2,288	2,288
April		3,000	73.8%	2,214	2,214
May		3,100	73.8%	2,288	2,288
June		3,000	73.8%	2,214	2,214

Total	**27,757**

Source: Airport Records; US DOT T-100 Data; Diio Mi

The FY 2024 estimate of SUX enplaned passengers produces a market share of 0.9 percent compared to the aggregated airport projection for FY 2024, indicating a continued pattern of passenger leakage from SUX to other airports in the region continuing from the COVID-19 Pandemic. Load factors, as of FY 2024, continue to show SUX at 74.0 percent, 10.0 percent lower than OMA and FSD both at 84.0 percent. Average fares for the third quarter of 2023 show SUX fares at $233.51 compared to OMA at $190.35, a 22.7 percent difference also pointing to passengers from the Sioux City MSA trying to find lower fares in other markets.

Given that the pattern of market share continues to indicate that passengers continue to leak from SUX to alternative airports in addition to a 0.02 percent population growth predicted for the Sioux City MSA throughout the Forecast Period, the enplaned passenger forecast projects the SUX market share to remain constant at 0.9 percent through 2043 as seen in **Table 2-13**.

Table 2-13 Forecast – SUX and Regional Market Share of Enplanements

	Fiscal Year	Regional Enplanements	SUX Market Share	SUX Enplanements
	2022	2,703,315	1.1%	30,419
Baseline	2023	2,974,796	0.9%	26,380
Forecast	2024	3,009,727	0.9%	27,757
	2025	3,045,069	0.9%	28,624
	2026	3,080,825	0.9%	28,960
	2027	3,117,001	0.9%	29,300
+ 5 Years	2028	3,153,602	0.9%	29,644
	2029	3,190,633	0.9%	29,992
	2030	3,228,099	0.9%	30,344
	2031	3,266,004	0.9%	30,700
	2032	3,304,355	0.9%	31,061
+ 10 Years	2033	3,343,156	0.9%	31,426
	2034	3,382,412	0.9%	31,795
	2035	3,422,130	0.9%	32,168
	2036	3,462,314	0.9%	32,546
	2037	3,502,970	0.9%	32,928
+ 15 Years	2038	3,544,103	0.9%	33,315
	2039	3,585,719	0.9%	33,706
	2040	3,627,824	0.9%	34,102
	2041	3,670,423	0.9%	34,502

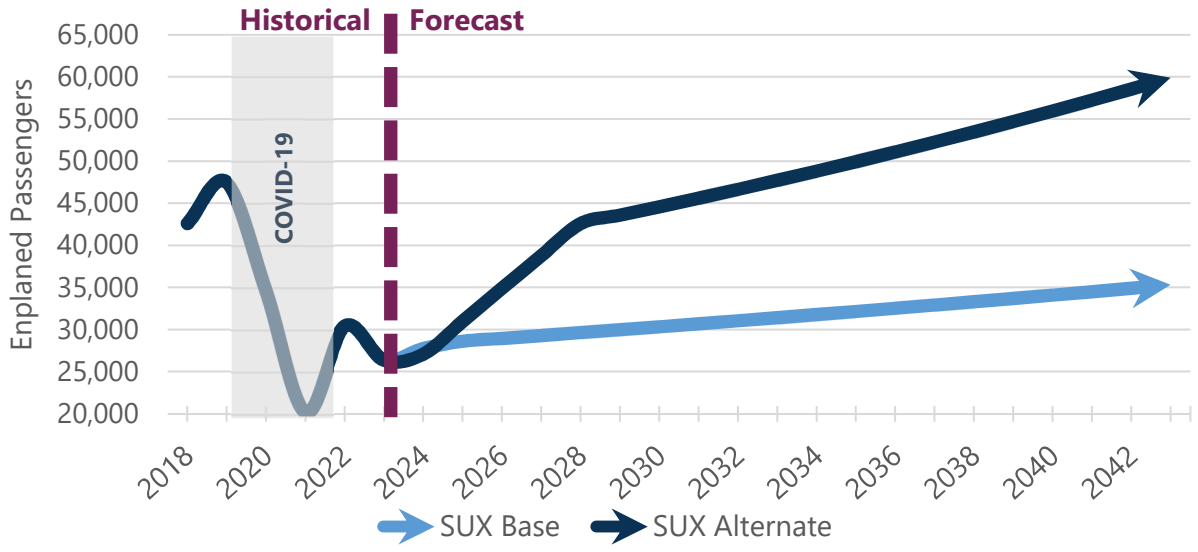
	2042	3,713,523	0.9%	34,907
+ 20 Years	2043	3,757,128	0.9%	35,317
Compound Annual Growth Rate (CAGR)				
2023-2043		**1.2%**		**1.3%**

Source: U.S. DOT T-100 Data, Compiled by RS&H 2024

2.4.4.1 Alternate Scenario

An alternate growth scenario was developed to address a potential future increased level of enplanements and passenger operations at SUX. Based on recent history prior to the COVID-19 Pandemic from FY 2014 to FY 2019, SUX experienced robust enplaned passenger growth. The Airport recorded 25,331 enplanements in FY 2014 and grew to 47,505 in FY 2019 at a CAGR of 13.4 percent for the 6-year period. In addition, the average fare for that period between FY 2014 and FY 2019 averaged $217 which is $20 less than the average fare in FY 2023 of $237. To look closer at this alternate growth scenario, RS&H prepared a mock schedule for SUX to simulate an annual peak day for FY 2023 based on FAA's OPSNET data. The peak day schedule was calibrated by applying historical load factors and annualized to simulate actual annual enplanement and operations volumes. Future schedules were then assembled to reflect the Forecast Period's milestone years of FY 2028, FY 2033, FY 2038 and FY 2043. The inputs of the mock schedule reflected 1 additional service beginning in FY 2028 for 3 total daily departures to reflect a similar pattern of service from FY 2014 to FY 2019. In addition, aircraft were up-gauged to 76-seats Embraer 175s and 69-seats Bombardier CRJ-700s starting in FY 2028. The results of this mock schedule were used to prepare the alternate growth scenario for enplanements and passenger operations which can be seen in **Table 2-14** and **Table 2-19**.

Figure 2-6 Passenger Enplanement Forecast Scenarios



Source: Airport Statistics; RS&H Analysis, 2023

As this is an alternate growth scenario and uses a methodology not approved by the FAA for forecast approval, the scenario was prepared as an exercise to showcase what is operationally possible at SUX if the socio-economic variables and average fares drop at the Airport in the short-to-medium term that can mirror the Airport's MSA's market conditions prior to the COVID-19 Pandemic. Both base and alternate passenger enplanement growth scenarios are shown in **Figure 2-6.**

Table 2-14 Passenger Enplanement Forecast Scenarios

	Fiscal Year	Base Scenario	Alternate Scenario
Baseline	2023	26,380	26,380
Forecast	2024	27,757	27,100
	2025	28,624	31,000
	2026	28,960	34,900
	2027	29,300	38,800
+ 5 Years	2028	29,644	42,600
+ 10 Years	2033	31,426	47,700
+ 15 Years	2038	33,315	53,500
+ 20 Years	2043	35,317	59,900
		Compound Annual Growth Rates	
2023 - 2024		5.2%	2.7%
2024 - 2033		1.4%	6.5%
2033 - 2043		1.2%	2.3%
2023 - 2043		1.5%	4.2%
2024 - 2043		1.3%	4.3%
2025 - 2043		1.6%	3.7%

Source: Airport Statistics; RS&H Analysis, 2023

2.5 Aircraft Operations Forecast

The SUX aircraft operations forecast combines the 3 sources of aviation activity at the Airport. GA activity, consistent with national trends, did recover quickly from the pandemic but SUX is still experiencing a recovery of commercial traffic. The forecasting methodology for each grouping is further analyzed in this section.

2.5.1 Passenger Operations Forecast

This section outlines the approach and methodology applied to prepare the passenger operations forecast for SUX. The different data components below were analyzed and used in the preparation of the passenger operations forecast.

- Total Enplaned Passenger – The base of the passenger operations forecast is the SUX enplaned passenger forecast based on regional market share analysis as described in this report in **Section 2.4.4**.

- Average Load Factors (ALF) – Historical ALFs were analyzed for the 10-year period from FY 2014 to FY 2023. The historical ALFs were obtained from U.S. DOT T-100 database to determine an established trend or pattern (see **Table 2-15**). A comparison shows load factors are below the national average for all but 1 of the last 10 years. During the COVID-19 Pandemic, SUX ALFs mirrored that of the national trend in FY 2022. With a ten-year average of approximately 74.0 percent, the passenger operations forecast assumes an ALF which is flat at 75.0 percent throughout the Forecast Period to account for exogenous economic shocks that will likely increase and decrease the ALFs at SUX.

Table 2-15 Historical Load Factors – SUX Compared to U.S FY 2014-FY2023

Fiscal Year	SUX Load Factor	US Load Factor
2014	78.0%	82.9%
2015	79.4%	82.3%
2016	73.9%	82.5%
2017	82.1%	82.5%
2018	75.8%	82.9%
2019	75.9%	83.5%
2020	67.6%	78.2%
2021	52.4%	57.2%
2022	76.6%	76.6%
2023	74.4%	83.5%

Source: U.S. DOT T-100 Data

- Average Seats Per Departure (ASPD) – The ASPD was calculated historically for the 10-year period from FY 2014 to FY 2023. By dividing the total number of historical departing seats by the total number of historical departures, a 10-year trend of ASPD was calculated. The historical ASPD data was obtained from U.S. DOT T-100 database to determine an established trend or pattern similar to the one conducted for the ALF analysis (see **Table 2-16**). ASPD, like ALFs, have historically maintained a flat trend as regional carriers flying under a mainline carrier have utilized 50-seat regional jets as their chosen aircraft for markets under the EAS program. SUX is no exception and with SkyWest flying on behalf of United until 2026, the passenger operations forecast conservatively assumes that a 50.0 seat ASPD will remain constant throughout the Forecast Period as a result of no information having been provided (or otherwise found) by SkyWest regarding their plan for the retirement of the 50-seat Bombardier CRJ-200. RS&H, however, analyzed the assumption that a larger aircraft would replace 50-seat aircraft before FY 2030. Based on current trends observed at airports of a similar size to SUX, indications are that the CRJ-200/Embraer 145/140 are steadily being replaced by the Embraer E170/175 (see **Table 2-17**) As shown on the table, up gauging to Embraer E170/175s is not only occurring on United flights operated by SkyWest, but also on Delta and American on flights operated by their regional partners. As SUX maintains commercial service under the EAS program, it will be critical to continuously monitor impacts to forecasted levels as either the anticipated aircraft retirement under the current regime occurs or if a new entrant operating a larger aircraft fulfils ensuing contracts.

Table 2-16 Historical Average Seats Per Departure (ASPD) FY 2014-FY2023

Fiscal Year	Departures	Seats	ASPD
2014	644	32,213	50.0
2015	693	38,845	56.1
2016	706	35,203	49.9
2017	1,017	50,700	49.9
2018	1,061	53,246	50.2
2019	1,251	61,436	49.1
2020	1,011	49,400	48.9
2021	759	37,812	49.8
2022	775	38,725	50.0
2023	692	34,600	50.0

Source: U.S. DOT T-100 Data

Table 2-17 Airports Up-Gauging from 50 Seat Aircraft to Embraer 170/175s

Market/Timeframe	Carrier	Equipment	Operations
Asheville Regional Airport, NC (AVL)			
January - June 2024	United	Embraer E175	310
January - June 2019	United	CRJ-200	509
Sioux Falls Regional Airport, SD (FSD)			
January - June 2024	United	Embraer E170/175	467
January - June 2019	United	CRJ-200	548
Northwest Arkansas Regional Airport, AR (XNA)			
January - June 2024	United	Embraer E175	804
January - June 2019	United	CRJ-200	458
Twin Falls, ID (TWF)			
January - June 2024	Delta	Embraer E175	1,456
January - June 2019	Delta	CRJ-200	2,068
Garden City. KS (GCK)			
January - June 2024	American	Embraer E170/175	1,456
January - June 2019	American	Embraer 140	1,448
Worcester Regional Airport, MA (ORH)			
January - June 2024	American	Embraer E175	704
January - June 2019	American	Embraer 145	1,268

Source: Cirium Diio Mi Airline Schedules

- Enplanements per Departure (EPD) – EPD were calculated by multiplying average load factors by ASPD (ALF x ASPD).

The total enplaned passenger forecast was combined with projected ALFs and projected ASPD in a mathematical formula to derive a forecast of scheduled passenger operations. The mathematical formula expressed below is used to calculate total annual operations at SUX.

$$\frac{Enplanements}{(ALF)(ASPD)}(2) = Passenger\ Operations$$

Passenger aircraft operations at SUX are projected to increase from 1,419 in FY 2023 to approximately 1,884. This produces a CAGR of 1.2 percent over the Forecast Period.

Table 2-18 SUX Forecast – Total Passenger Operations

	Fiscal Year	Load Factors	ASPD	EPD	Total Passenger Operations
	2022	76.6%	50.0	38.3	1,588
Baseline	2023	74.4%	50.0	37.2	1,419
Forecast	2024	74.4%	50.0	37.2	1,493
	2025	75.0%	50.0	37.5	1,527
	2026	75.0%	50.0	37.5	1,545
	2027	75.0%	50.0	37.5	1,563
+ 5 Years	2028	75.0%	50.0	37.5	1,581
	2029	75.0%	50.0	37.5	1,600
	2030	75.0%	50.0	37.5	1,618
	2031	75.0%	50.0	37.5	1,637
	2032	75.0%	50.0	37.5	1,657
+ 10 Years	2033	75.0%	50.0	37.5	1,676
	2034	75.0%	50.0	37.5	1,696
	2035	75.0%	50.0	37.5	1,716
	2036	75.0%	50.0	37.5	1,736
	2037	75.0%	50.0	37.5	1,756
+ 15 Years	2038	75.0%	50.0	37.5	1,777
	2039	75.0%	50.0	37.5	1,798
	2040	75.0%	50.0	37.5	1,819
	2041	75.0%	50.0	37.5	1,840
	2042	75.0%	50.0	37.5	1,862
+ 20 Years	2043	75.0%	50.0	37.5	1,884
Compound Annual Growth Rate (CAGR)					
2023-2043					**1.2%**

Source: U.S. DOT T-100 Data

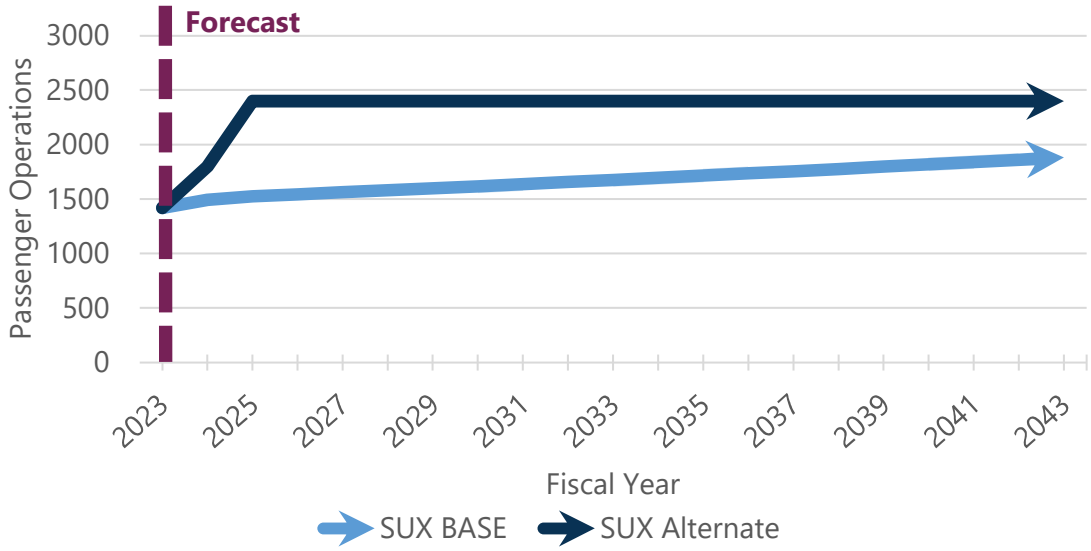
As described in **Section 2.4.4.1**, an alternate scenario was created for passenger operations using the same methodology. Both the base and alternate passenger operations scenarios are shown in **Table 2-19** and **Figure 2-7.**

Table 2-19 Passenger Operations Forecast

	Fiscal Year	Base Scenario	Alternate Scenario
Baseline	2023	1,419	1,419
Forecast	2024	1,493	1,800
	2025	1,527	2,400
	2026	1.545	2,400
	2027	1,563	2,400
+ 5 Years	2028	1,581	2,400
+ 10 Years	2033	1,676	2,400
+ 15 Years	2038	1,777	2,400
+ 20 Years	2043	1,884	2,400
Compound Annual Growth Rates			
2023 - 2024		5.2%	26.8%
2024 - 2033		1.3%	3.2%
2033 - 2043		1.2%	0.0%
2023 - 2043		1.4%	2.7%
2024 - 2043		1.2%	1.5%
2025 - 2043		1.2%	0.0%

Source: Airport Statistics; RS&H Analysis, 2023

Figure 2-7 Passenger Operations Forecast Scenarios



Source: RS&H Analysis, 2023

2.5.2 General Aviation Forecast

General Aviation (GA) activity at SUX is comprised of all aircraft operations outside of scheduled commercial service and military operations. Historically, GA operations comprise a large majority of the total aircraft operations recorded annually at SUX. In recent years, the Airport has welcomed new tenants like the two flight schools that are anticipated to promote growth and have a notable, positive impact on GA activity at SUX. The dividends of these growing relationships will supplement the growth of GA activity already anticipated at SUX following national trends.

2.5.2.1 Aerospace Forecast

GA activity is a vital component of aviation at SUX accounting for over 70 percent of total operations in recent years. Nationally, recreational GA has been in decline while corporate and business-related GA has been increasing. Like other aviation sectors, GA experienced a steep decline in activity early in the COVID-19 Pandemic; however, demand began to recover for this sector in the second half of CY 2020, much faster than for commercial airlines. Domestic and international business jet operations in April 2020 were nearly 75 percent below CY 2019 levels, but by June 2020 had recovered to levels approximately 24 percent below those in June 2019, and by December 2020 were only about 12 percent lower than the prior year's level of activity. Demand for business aviation has rebounded in part due to increased demand from corporate executives and individuals able to pay for alternatives to scheduled commercial passenger service during the COVID-19 Pandemic.

Sioux City and the greater multi-state development region spanning adjoining portions of Iowa, Nebraska, South Dakota, and the southern tip of Minnesota, known as Siouxland, are home to both large commercial and industrial developments as well as national developers. Interconnectivity is necessary to sustain the growth within the region as well as national commerce and SUX is one of only two commercial airports (Sioux Falls, SD) to serve as a gateway to the Siouxland region. As such, aircraft activity at SUX, largely that of turboprop and jet aircraft used in the business sector, has grown largely in sync with the national trend of GA aircraft (exception of small general aviation piston aircraft as is explained in **Section 2.5.2.1**). The national trend of GA aircraft is analyzed in each annual edition of the FAA's Aerospace Forecast in both number and type of GA aircraft operating within the National Airspace System (NAS) as well as the hours flown for each aircraft type to forecast the needs of the NAS in supporting future GA activity.

Table 2-20 Forecast – General Aviation

	Fiscal Year	Base Scenario		Alternate Scenario	
		GA	Air Taxi	GA	Air Taxi
Baseline	2023	13,305	1,421	13,305	1,421
Forecast	2024	13,400	2,000	13,500	2,100
	2025	13,500	2,100	13,700	2,100
	2026	13,600	2,100	13,800	2,200
	2027	13,700	2,100	14,000	2,200
+ 5 Years	2028	13,800	2,200	14,200	2,300
+ 10 Years	2033	14,300	2,300	15,100	2,500
+ 15 Years	2038	14,900	2,400	16,300	2,800
+ 20 Years	2043	15,600	2,500	17,600	3,000
		Compound Annual Growth Rate			
2023 - 2024		0.7%	40.7%	1.5%	47.8%
2024 - 2033		0.7%	1.6%	1.3%	2.0%
2033 - 2043		0.9%	0.8%	1.5%	1.8%
2024 - 2043		0.8%	1.2%	1.4%	1.9%

Source: Airport Records; 2023 FAA TAF; RS&H Analysis, 2023

Compound annual growth rates (CAGR) for piston, turboprop, jet, and other aircraft types as well as the aggregate groupings of aircraft based on operating type are included in the Aerospace Forecast and were used to forecast the growth of GA activity at SUX across base and alternate growth scenarios. For the base scenario, GA activity was grown at an average annual rate of 0.8 percent, the same rate of total GA hours flown as published by the FAA's 2023 – 2043 Aerospace Forecast. In addition, historically, the ratio of GA operations to air taxi operations at SUX was approximately 6 GA operations per every air taxi operation. This ratio is projected to continue throughout the Forecast Period. A alternate scenario was developed for GA growing at the same rate as the FAA's forecast of U.S. oil refiners' acquisition cost throughout the Forecast Period. **Table 2-20** details the forecast of GA operations at SUX based on national trends.

2.5.2.2 Flight Instruction at SUX

The Aerospace Forecast used in **Section 2.5.2.1** reflects national trends but does not account for growth experienced at a local level. SUX has experienced an influx of general aviation operations and anticipates major continued growth with the addition of two flight schools by

the end of CY 2023. The first flight school began operation in early 2023 and already has had a significant impact in contributing to the near 7,000 aircraft operations increase in 2023. The second flight school is planned to begin operation in the Fall of 2023 at near the same frequency as the one currently in operation but with strong anticipated growth in the near five-year period. See **Table 2-22** for additional data on how flight instruction has altered the course of total operations at SUX. As these are local developments not already accounted for in the Aerospace Forecast, projected activity for each school needs to also be included in the GA operations forecast for SUX to adequately plan for future needs. Building on the baseline GA operations forecast, discussions with both flight schools and airport staff anticipate an operations increase of approximately 10,000 annual operations by 2026 through flight instruction[16]. Values shown in **Table 2-21** account for these additional operations supplementing the baseline projections presented in **Table 2-20**.

Table 2-21 Forecast – General Aviation (Flight School Traffic Included) [17]

	Fiscal Year	Base Scenario		Alternate Scenario	
		GA	Air Taxi	GA	Air Taxi
Baseline	2023	13,305	1,421	13,305	1,421
Forecast	2024	19,400	2,000	19,500	2,100
	2025	21,500	2,100	21,700	2,100
	2026	23,600	2,100	23,800	2,200
	2027	23,700	2,100	24,000	2,200
+ 5 Years	2028	23,800	2,200	24,200	2,300
+ 10 Years	2033	24,300	2,300	25,100	2,500
+ 15 Years	2038	24,900	2,400	26,300	2,800
+ 20 Years	2043	25,600	2,500	27,600	3,000
	Compound Annual Growth Rates				
2023 - 2024		45.8%	40.7%	46.6%	47.8%
2024 - 2033		2.5%	1.6%	2.8%	2.0%
2033 - 2043		0.5%	0.8%	1.0%	1.8%
2024 - 2043		1.5%	1.2%	1.8%	1.9%

Source: Airport Records; 2023 FAA TAF; RS&H Analysis, 2023

[17] This forecast eliminates the 50-seat jet by 2028 so all commercial passenger traffic would no longer fall under the air taxi category and does not include prospective touch and go operations.

To build the GA forecast, historical traffic counts from 2019 through 2023 were collected and analyzed. Calendar year 2023 was used for this analysis because it presents a more accurate representation of the impact of the flight schools having begun operation in 2023. Like commercial traffic, GA activity at SUX experienced a nontypical decline during the COVID-19 pandemic lasting from April 2020 through February of 2021 and as a result, these figures were not used in historical activity comparison. The average of the years 2018, 2019 and 2022 was calculated and then compared to 2023 operations. As shown in **Table 2-22**, traffic counts reported by FAA Air Traffic Control (ATC) at SUX indicate that since flight instruction operations began in 2023, total GA traffic experienced a growth rate of 62.3 percent. This information supports the GA operations forecast provided in this Master Plan. See **Appendix B** for historical traffic operations.

Table 2-22 General Aviation Operations at SUX Comparison

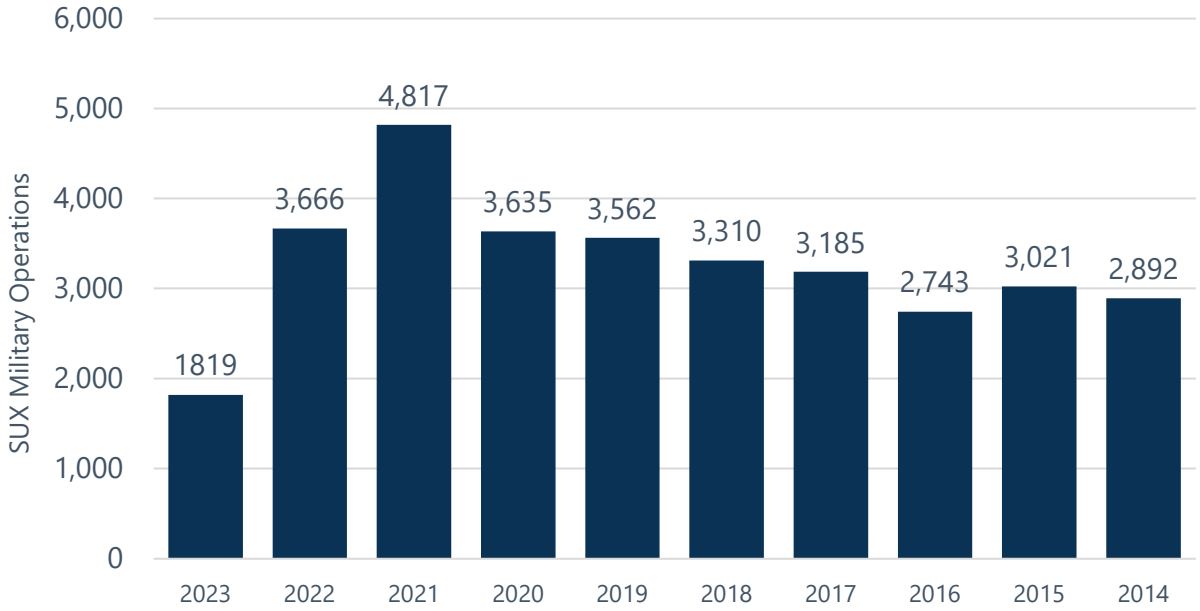
Month	Total GA Operations						Historical Average*	% Growth (2023/Avg)
	2018	2019	2020*	2021*	2022	2023		
January	707	789	544	473	863	907	786	15.3%
February	519	657	835	417	736	1,110	637	74.2%
March	647	743	785	781	988	1,252	793	57.9%
April	953	915	690	844	799	1,299	889	46.1%
May	984	1,021	459	380	821	1,689	942	79.3%
June	939	1,120	534	1,174	1,029	2,116	1,029	105.6%
July	1,355	1,418	757	1,207	1,608	2,230	1,460	52.7%
August	1329	1,311	742	1,022	1,149	2,148	1,263	70.1%
September	1067	1,073	565	1,120	1,043	1,694	1,061	59.7%
October	1104	951	741	919	1,303	1,625	1,119	45.2%
November	911	776	794	804	1,143	1,718	943	82.1%
December	946	905	691	841	806	1,380	886	55.8%
Total	11,461	11,679	8,137	9,982	12,288	19,168	11,809	62.3%

*Operational activity during COVID-10 pandemic omitted from historical average (CY 2020 and 2021)
Source: Airport Records; RS&H Analysis, 2023

2.5.3 Military Forecast

Table 2-23 presents the forecast of military aircraft operations at SUX. Military operations account for the second most annual operations at SUX due to the Iowa Air National Guard's (IANG)185th Air Refueling Wing based at the airport. The IANG flies KC-135 Stratotankers on a near daily basis to conduct their missions. Military operations at SUX have been historically flat (see **Figure 2-8**). There are two exceptions in the last 10-year period between FY 2014 and FY 2023 that there have been fluctuations in normal military operational activity. The first was an increase in military deployments due to COVID-19 Pandemic related activities from FY 2020 (3,635 operations) to FY 2021 (4,817 operations) equating to a 33 percent growth. The second was a reduction in military operations in FY 2023 caused by an apron rehab in the Air National Guard's ramp and the rehab of the main runway.

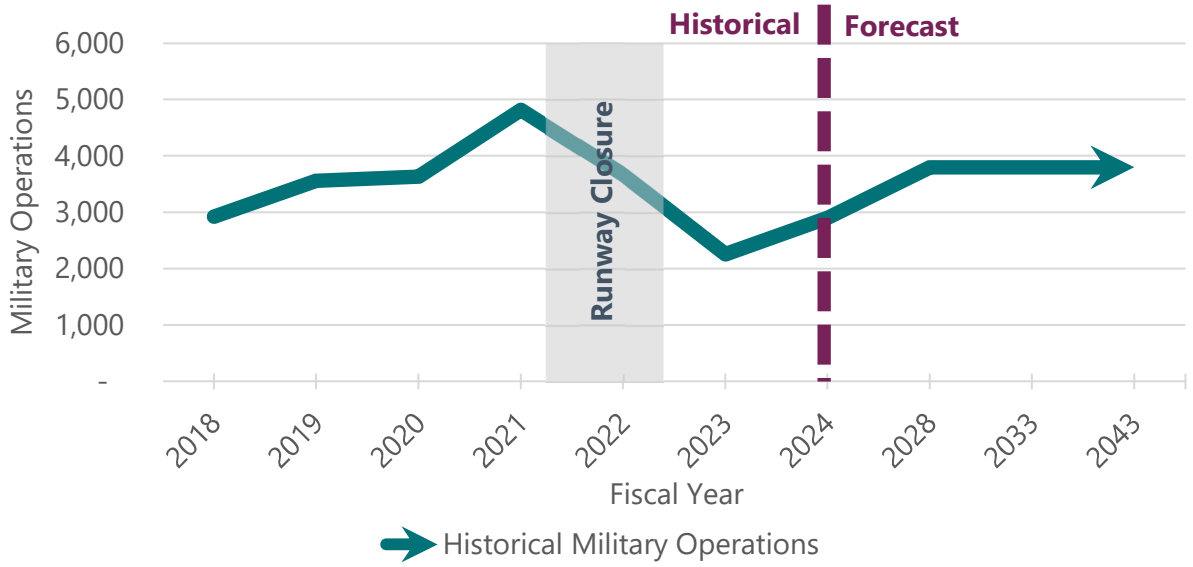
Figure 2-8 SUX Historical Military Operations, FY2014-FY2023



Source: City of Sioux City (Annual Report); FAA TAF

Because the base year used in this forecast was atypical for military movements, it is projected that traffic will return to historically typical levels at the rate of 3,500 annual operations and then remain constant. See **.** An alternate forecast scenario keeps military operations at the same levels as the baseline through the Forecast Period as shown in **Table 2-23.**

Figure 2-9 Historical and Forecasted Military Activity



Source: Airport Data, Compiled by RS&H, 2023

Table 2-23 SUX Military Forecast

	Fiscal Year	Base Scenario	Alternate Scenario
Baseline	2023	1,819	1,819
Forecast	2024	3,500	3,500
	2025	3,500	3,500
	2026	3,500	3,500
	2027	3,500	3,500
+ 5 Years	2028	3,500	3,500
+ 10 Years	2033	3,500	3,500
+ 15 Years	2038	3,500	3,500
+ 20 Years	2043	3,500	3,500
Compound Annual Growth Rates			
2023 - 2024		59.4%	59.4%
2024 - 2033		3.0%	3.0%
2033 - 2043		0.0%	0.0%
2023 - 2043		3.8%	3.8%
2024 - 2043		1.4%	1.4%

Source: Airport Records; 2023 FAA TAF; RS&H Analysis, 2023

2.6 Based Aircraft Forecast

The 2023, FAA TAF forecasted SUX has and continues to forecast 73 based aircraft throughout the twenty-year planning period. At the time of this writing (2023), the Airport Master Record (5010) indicated a based aircraft count of 57 civil aircraft and 9 military aircraft for a total of 66 based at SUX. As the FAA's TAF pulls based aircraft data directly from the 5010, it is assumed the airport had not yet updated the count prior to the 2023 TAF having been published. It is anticipated the 2024 TAF will reflect this updated number. As it reflects the current state of the airport, the civil based aircraft count recorded in the 5010 was used as the baseline for this forecast. Forecasted growth of military-based aircraft was included as well but will not be used for facility planning as the IANG maintains their own facilities Installation Development Plan(IDP). As a result, military based aircraft were held constant throughout the planning period.

As the Siouxland region is home to both large commercial and industrial developments as well as national developers, interconnectivity is necessary to sustain the growth within the region as well as national commerce. As such, based aircraft activity at SUX has grown largely in sync with the national trend of general aviation aircraft, with the exception of small general aviation piston aircraft as is explained later in this section. The FAA's Aerospace Forecast is a comprehensive 20-year forecast (and historical detail) of general aviation (GA) activity across the nation and thoroughly examines trends in usage of different aircraft types. As detailed in **Table 2-24**, the total number of general aviation aircraft within the US is projected to increase over the next 20 years annually by 2.0 percent. As business travel continues to flourish, turboprop, turbojet, and rotorcraft are all projected to spur growth in the general aviation sector through the next 20 years while single- and multi-engine piston (SEP and MEP, respectively) fleets, more frequented by the recreational flyer, are expected to decrease. The number of turbine-powered GA aircraft is expected to grow by over 13,000 between 2023-2043.

Table 2-24 FAA Aerospace Forecast (GA Aircraft Count)

Fiscal Year	SEP Aircraft	MEP Aircraft	Turbo-prop	Turbo Jet	Rotor-craft	Exp.	Light Sport	Total GA Fleet
Historical								
2010	139,519	15,900	9,369	11,484	10,102	24,784	6,528	223,370
2015	127,887	13,254	9,712	13,440	10,506	27,922	2,369	210,031
2019	128,926	12,470	10,242	14,888	10,198	27,449	2,675	210,981
2020	124,059	11,947	10,317	15,316	9,746	26,367	2,570	204,140
2021	126,735	11,885	10,391	15,270	10,032	27,960	2,650	209,194
2022E	125,655	11,810	10,415	15,730	10,175	28,245	2,760	209,140
Forecast								

2023	124,545	11,745	10,430	16,215	10,320	28,580	2,870	33,935
2028	119,185	11,485	10,560	18,930	11,120	30,190	3,450	37,520
2033	114,360	11,315	10,885	21,775	12,005	31,410	4,050	41,490
2038	110,405	11,205	11,410	24,655	12,930	32,600	4,610	45,720
2043	107,800	11,175	12,170	27,570	13,870	33,835	5,245	50,235
Avg Annual Growth								
2010-22	-0.9%	-2.4%	0.90%	2.70%	0.10%	1.10%	-6.9%	1.60%
2022-23	-0.9%	-0.6%	0.10%	3.10%	1.40%	1.20%	4.00%	1.90%
2023-33	-0.8%	-0.4%	0.40%	3.00%	1.50%	0.90%	3.50%	2.00%
2023-43	-0.7%	-0.2%	0.80%	2.70%	1.50%	0.80%	3.10%	2.00%

Source: FAA Aerospace Forecast Fiscal Years 2023-2043
Note: an active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

A share analysis using the FAA Aerospace Forecast was conducted to generate a based aircraft forecast at SUX. **Table 2-25** details the growth forecast of each based aircraft type currently based at SUX over the 20-year Forecast Period. As shown, the number of non-military-based turbojet aircraft is anticipated to increase by eight over the Forecast Period, which correlates with the 2.7 percent growth forecasted for the national fleet of turbojets in the United States.

Table 2-25 Forecast – Based Aircraft

	Fiscal Year	SEP Aircraft	MEP Aircraft	Jet	Rotorcraft	Military	Total
Baseline	2023	41	3	11	2	9	66
Forecast	2024	43	3	11	2	9	68
+ 5 Years	2028	51	3	11	2	9	76
+ 10 Years	2033	51	3	13	2	9	78
+ 15 Years	2038	51	3	15	2	9	80
+ 20 Years	2043	51	3	17	3	9	83
Compound Annual Growth Rate							
2023-2028		4.5%	0.0%	0.5%	0.3%	0.0%	2.9%
2028-2033		0.0%	-0.2%	2.7%	1.5%	0.0%	0.5%
2033-2043		0.0%	-0.2%	2.7%	1.5%	0.0%	0.5%
2023-2043		1.1%	-0.2%	2.2%	1.2%	0.0%	1.1%

Source: Airport Records; RS&H Analysis, 2023

As detailed in **Table 2-24**, the Aerospace Forecast anticipates a steady national decline in the fleet of piston-powered aircraft. Aging aircraft fleets, unfavorable pilot demographics, increasing aircraft ownership costs, and the lack of available lower cost alternatives are generally contributing to the decline of these piston aircraft at a national level. However, because of interest and activity of piston-powered aircraft at SUX, this decline is not indicative of the forecasted needs of the airport. New and existing aircraft owners looking to field additional aircraft have expressed interest in expanded hangar storage options at SUX prompting the construction of new T-hangars and a multi-aircraft hangar underway at the time of this writing. In addition, a second flight school will begin operation in the Fall of 2023. Discussions with airport staff and the new flight school operator have established a baseline of operations and anticipated growth in the near-term five-year period patterned after a similar flight school under the same operator at Millard Municipal Airport (MLE) located in Omaha, Nebraska about 90 miles south of SUX. The airport and operator have an agreement for the flight school to begin operations in the Fall of 2023 with two based piston aircraft and 11 students achieving 200 operations per student each year. To achieve the forecasted growth of 100 students within five years based on regional interest and demand, the operator plans to base an additional eight piston aircraft at SUX to accommodate flight instruction operations (projected as high as 20,000/year). As the projection and agreement with the airport is based on a similarly success operation already in place at MLE, the based aircraft forecast includes accommodation for this growth with an addition two single engine piston aircraft beginning in 2024 and an additional eight by year five (2028) of the second flight school operation as shown in **Table 2-25**.

The airport made similar efforts to coordinate anticipated growth with the flight school already in operation at SUX but did not receive reliable projection information. The operation is currently reflective of the second operator's beginning operational levels but is not anticipated to have the same growth as detailed above. Minor accommodations for growth of this operation will be made in facility planning but with any future growth having a nominal impact on the current airfield capacity, the projection for flight school already in operation at SUX was held constant for both operations and based aircraft activity in this forecast.

2.7 Critical Aircraft

The FAA requires identification of existing and future critical/design aircraft for airport planning purposes. The term critical aircraft and design aircraft can be used interchangeably. The critical aircraft is the most demanding aircraft, or grouping of aircraft, using the airport regularly. Regular use is defined in AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, as amassing at least 500 total annual operations, excluding touch-and-go landings. Three parameters are used to classify the critical aircraft: Aircraft Approach Category (AAC), Airplane Design Group (ADG), and Taxiway Design Group (TDG). The AAC, depicted by a letter, relates to aircraft approach speeds. The ADG, depicted by a Roman numeral, relates to airplane wingspan

and tail height. The TDG, classified by a number, relates to the maneuvering ability of the aircraft on the ground. These parameters serve as the basis for design and construction of airport infrastructure and an accurate critical aircraft determination helps ensure proper facility planning to meet the forecasted needs of the airport.

The current SUX Airport Layout Plan (ALP) from 2013 lists the existing and future critical aircraft identified for both Runway 13-31 and Runway 18-36 (shown in **Table 2-26**). The aircraft identified were based on commercial airlines currently and anticipated to operate at SUX considering the market trends of the period.

Table 2-26 2013 SUX ALP Critical Aircraft Determination

	Representative Aircraft	AAC	ADG	TDG
Runway 13-31				
Existing Critical Aircraft	Boeing 737/MD 80/G5/G4	D	III	3
Future Critical Aircraft	Boeing 737/MD 80/G5/G4	D	III	3
Military Aircraft	KC - 135	C	IV	4
Runway 18-36				
Existing Critical Aircraft	CRJ/EMB Regional Jet	C	II	3
Future Critical Aircraft	CRJ/EMB Regional Jet	C	II	3

Source: 2013 SUX ALP; Compiled by RS&H, 2023

Per guidance provided in FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, each runway should have a specific critical aircraft designation based on documented aeronautical activity. Two FAA sources of historical operational data were used in the analysis and assignment of the existing and future critical aircraft for SUX, the Traffic Flow Management System Counts (TFMSC) and the National Offload Data Program (NOP). The TFMSC collects flight information detected by the National Airspace System (NAS) by aircraft under instrument flight rules (IFR) only, excluding and visual-only operations. Data obtained by the NOP contains all traffic recorded by air route traffic control centers (ARTCC) including instrument and visual operations. The NOP is a complete record of operations received by the FAA but is somewhat limited in how the data is recorded. TFSMC data is less complete but offers additional details, namely the three design parameters (AAC, ADG, and TDG), that help refine the NOP data set and create a unique record of airfield activity at the airport. As a result of a major rehabilitation project[18] on Runway 13-31 having significant impact on operations during calendar year 2022 as well as CY 2023 data not yet complete at the time of this writing, potentially altering the critical aircraft determination, 2021 NOP and TFMSC traffic data was obtained and used for the critical

[18] Data from 2021 was used for this determination because the main runway was being rehabbed in 2022 and would not provide adequate results required to make a critical aircraft determination.

aircraft determination in this section. **Table 2-27** compares the 2021 NOP data and historical TFMSC aviation activity trends at SUX.

Table 2-27 NOP and TFMSC Data Comparison for SUX

	FAA NOP	FAA TFMSC			
	2021	2021	2022	2023	2021 (Extra.)*
AAC		**Operations**			
A	8,638	1074	1,012	1,155	8,954
B	2,394	2178	2,374	395	2,287
C	6,428	2185	1,464	2,038	6,224
D	1,820	1722	1,395	1,531	1,808
ADG					
I	9,371	1630	1,500	1,691	9,427
II	4,859	4545	4,298	4,375	4,761
III	131	106	92	123	109
IV	4,831	884	335	812	0

*2021 TFMSC data for SUX extrapolated based on source reliability and data omissions
Source: FAA Offload Data; TFMC data; RS&H, 2023

The TFMSC only provides reliable IFR operational data but does have a few limitations such as aircraft traveling outside of en-route airspace, low-altitude flights, and those aircraft that may cancel IFR flight plans mid-flight. However, with these limitations the FAA still maintains TFMSC data to IFR operations with 95 percent reliability.[19] As detailed in **Table 2-27**, TFSMC data is reliable for large aircraft that typically operate under IFR at all times but becomes unreliable for reporting small aircraft activity that may fit into the limitations listed above or operate under VFR. As a result, the majority of small aircraft activity (RDC A-I/B-I) are not captured. Extrapolation of the 2021 TFSMC data to meet 2021 NOP levels by adding 5 percent for large aircraft and maintained military operations brings both data sets in close correlation. Verifying both the validity of the historical TFMSC data and magnitude of small aircraft operations at SUX.

Runway 13-31 is the primary runway at SUX and receives approximately 56 percent of total civil aircraft operations. Due to the close proximity of crosswind Runway 18-36 to general aviation facilities, greater frequency of use occurs for small general aviation aircraft as long as conditions allow. With the arrival of two new flight schools at SUX in CY 2023, the usage of both runways will continue to rise but the crosswind runway is anticipated to see accelerated growth for flight instruction operations. See **Table 2-28** for 2023 aircraft operations separated by category and runway used.

[19] TFSMC, Federal Aviation Administration, https://aspm.faa.gov/aspmhelp/index/TFMSC.html

Table 2-28 Aircraft Operations by Runway – 2021 NOP Data (Military Excluded)

	Runway 13-31	Runway 18-36	Primary Use
AAC		**Operations**	
A	4,060	4,578	47%
B	1,296	1,098	54%
C	1,201	396	19%
D	1,540	192	85%
ADG			
I	4,404	4,967	47%
II	3,569	1,290	73%
III	123	8	94%
Total	**8,096**	**6,265**	**56%**

*Military traffic was excluded from this analysis because critical aircraft is determined by civilian aircraft for FAA funding purposes.
Source: FAA Offload Data; TFMC data; RS&H, 2023

The following sections detail the analysis and justification for critical aircraft determination for each runway at SUX.

2.7.1 Runway 13-31 Critical Aircraft

Runway 13-31 is the primary runway at SUX. The current critical aircraft at SUX was determined via examination of historical FAA TFMSC data. As detailed in **Table 2-29**, the most demanding aircraft that currently exceeds 500 annual operations on Runway 13-31 is the Bombardier CRJ-200, a D-II-1B aircraft, predominantly used by SkyWest Airlines. The aircraft type recorded a little more than 1,500 operations on Runway 13-31 in calendar year 2023.

A critical component of the future design aircraft determination at SUX is the future of 50-seat aircraft. Both Bombardier and its competitor Embraer, manufacturer of the 50-seat EMB-145, have stopped production of their 50-seat regional jets as airlines are pushing for larger and more fuel-efficient aircraft in regional markets. Regional jets are essential to the hub and spoke system to connect passengers from smaller communities to a larger network of domestic and international destinations. As discussed in **Section 2.5.1**, up-gauging of regional fleets has become a trend among airlines, as these aircraft that are typically configured with 76-seats have lower operating costs compared to the 50-seat regional jets and are preferred by passengers.[20] Shown in **Table 2-17**, many airports of similar size measured in enplaned passengers and/or within the same geographic region as SUX have observed airlines transitioning from 50-seat

[20] Baldanza, B. (2023, July 10). Commercial 50 and fewer seat aircraft are economically dead. Forbes. https://www.forbes.com/sites/benbaldanza/2023/07/06/commercial-50-and-fewer-seat-aircraft-are-economically-dead/?sh=15a872a87079

regional jets to larger aircraft, including SkyWest which is certified under the EAS program and currently operates at SUX. The airport's current EAS contract with SkyWest expires at the end of CY 2025 leaving the market open for bid by any certified airline. Similar to the other airlines that fly under the EAS program, SkyWest is expected to replace the CRJ-200 with Embraer E170/E175[21] (C-III-3 aircraft). The up-gauging or replacement of the CRJ-200 by either SkyWest or any new entrant at SUX at any point throughout the Forecast Period would certainly surpass the threshold of what is considered as "frequent operation" likely serving as airport's most critical aircraft. With a commercial passenger operations forecast CAGR of 1.2 percent as discussed in in **Section 2.4**, in addition to the replacement of CRJ-200 operations with the Embraer E170/E175, SUX could expect to accrue approximately 2,000 annual operations in the Forecast Period. As a result, the Embraer E170/E175, has been identified as the future critical aircraft for Runway 13-31 at SUX as noted in **Table 2-30**.

Table 2-29 Runway 13-31 Aircraft Usage

Aircraft Type	AAC+ADG	Existing Annual Operations	Forecasted Annual Operations
Beechcraft Bonanza, Mooney M-20	A-I	671	786
Cessna 172 / 177	A-I	674	791
Cessna 182 / 185	A-I	198	233
Cirrus SR20/22	A-I	407	477
Piper PA-28 Cherokee, Cessna 150/152	A-I	484	568
Piper PA-30/44	A-I	74	87
Pilatus PC12, Cessna 208, Socata TBM7	A-II	125	147
Baron 58, Cessna 310/340, Aztec	B-I	294	344
Beechjet 400, HondaJet	B-I	43	51
Cessna 425/441, Socata TBM-850	B-I	138	162
Beech Super King Air 200/300	B-II	225	264
Cessna 525 Citation Jet CJ1/CJ3/CJ4	B-II	160	188
Cessna 560	B-II	45	52
Cessna 560 Citation XLS	B-II	115	135
Cessna Sovereign/Latitude	B-II	110	129
Bombardier Challenger 300/350/600	C-II	55	64
Cessna 750 Citation X, Falcon 2000	C-II	241	282
Citation II/Bravo, Embraer Legacy	C-II	161	189
Dassault Falcon 50/900	C-II	26	31
Embraer ERJ 135/145	C-II	590	749

[21] Delta airlines has retired the CRJ-200 from their fleet and United Airlines anticipates the same in the next few years.

Learjet 35/40/45/60/75, Hawker 800	C-II	151	177
Embraer ERJ 170/175	C-III	3	1,935
Bombardier CRJ-200/700	D-II	1,521	0
Boeing 737-800	D-III	31	39
Total Operations		**6,542**	**7,880**
Subtotals by AAC	A	2,634	3,089
	B	1,130	1,325
	C	1,227	3,427
	D	1,552	39
Subtotals by ADG	I	2,983	3,499
	II	3,525	2,408
	III	34	1,974
Subtotals by TDG	1A	3,005	3,525
	1B	1,998	560
	2A	915	1,073
	2B	590	749
	3	34	1,974

*Military traffic was excluded from this analysis because critical aircraft is determined by civilian aircraft for FAA funding purposes.
Source: FAA CY 2023 TFMSC aviation activity data; RS&H analysis, 2023

The 185th Air Refueling Wing of the IANG is stationed at SUX and currently operating the Boeing KC-135 Stratotanker. The KC-135 averages approximately 4,000 operations annually from SUX, with fluctuations year-to-year depending on the IANG's missions. The Boeing KC-135 is the military critical aircraft for Runway 13-31 which is a C-IV-4 aircraft. Based on conversations with the IANG, there are development plans in process for SUX to accommodate the future replacement for the KC-135, the Boeing KC-46 Pegasus, a C-IV-5 aircraft. To plan for the operation of this larger aircraft, the future military aircraft for SUX will be the KC-46.

Table 2-30 Runway 13-31 Critical Aircraft Determination

	Representative Aircraft	AAC	ADG	TDG
Runway 13-31				
Existing Critical Aircraft	CRJ-200	D	II	1B
Future Critical Aircraft	ERJ - 175	C	III	3
Existing Military Aircraft	KC – 135 - Stratotanker	C	IV	4
Future Military Aircraft	KC-46 - Pegasus	C	IV	5

Source: RS&H Analysis, 2023

2.7.2 Runway 18-36 Critical Aircraft

Runway 18-36 is the crosswind runway at SUX. The most recent rehabilitation of Runway 18-36 was completed in 2020 due to the required shifting of the runway thresholds and the pavement reaching the end of its useful life. In the Engineer's Design Report titled *Runway 17-35 Reconstruction & Shift (6.400' by 100') and Taxiway B, C, and D Reconstruction*[22] submitted in May 2018, the FAA stated, that they support "…reasonable runway length and width to accommodate the commercial service operations which may use the crosswind runway". Based on the fleet mix at the time and the recognition of future growth, the design aircraft used to rehabilitate Runway 18-36 was the Embraer 145, a C-II-2B aircraft.

Table 2-31 details the aircraft use on Runway 18-36 in CY 2023. As shown, the largest single aircraft to achieve the minimum use threshold of 500 annual operations is an A-I aircraft. However, as outlined in AC 150/5000-17, it is sometimes necessary for airfield planning to group aircraft with similar characteristics and runway length requirements together. The crosswind runway at SUX accommodates an unusual frequency of general aviation aircraft that includes large corporate aircraft/business jet such as the Bombardier Challenger 300, Dassault Falcon 900, and the Hawker 800, all C-II aircraft that grouped together exceeded the 500 annual operations threshold in CY 2023. Therefore, the current critical aircraft for Runway 18-36 is a C-II. At the time of construction, the taxiway design of the former Runway 17-35 before the change in designation was a TDG 2. Since the completion of the project, the FAA as issued update design requirements for taxiways, effectively splitting the former TDG 2 into 2A and 2B, the largest differentiator of which is fillet geometric requirements for curves and intersections. The most demanding TDG of aircraft using Runway 18-36 in 2023 was a TDG 2A as shown in **Table 2-31**. As a result, the current critical aircraft for Runway 18-36 should be a C-II-2A.

Similar to the projection for Runway 13-31, as commercial CRJ-200 and ERJ-145 aircraft operate on Runway 18-36, it is anticipated these aircraft will be replaced by large regional jets such as the Embraer 170/175 (C-III-3) within the Forecast Period and possibly within the near-term planning period. Based on historical use of Runway 18-36 by commercial aircraft and the forecasted growth model discussed earlier, commercial operations on Runway 18-36 are projected to fall short of the annual use threshold within the planning period (see **Table 2-31**). However, as commercial activity continues to change for both SUX and the regional market, the airport should be prepared to reevaluate the needs of the runway should larger aircraft begin more frequent operations. Based on the operations forecast for GA and commercial activity, the future civil critical aircraft for Runway 18-36 remains a C-II-2A. See **Table 2-32** for critical aircraft information for Runway 18-36.

[22] Runway 17-35 runway designation shifted to Runway 18-36 in 2020 due to the slow drift of the magnetic poles on the Earth's surface.

Table 2-31 Runway 18-36 Aircraft Usage

Aircraft Type	AAC+ADG	Existing Annual Operations	Forecasted Annual Operations
Beechcraft Bonanza, Mooney M-20	A-I	756	887
Cessna 172 / 177	A-I	760	892
Cessna 182 / 185	A-I	224	262
Cirrus SR20/22	A-I	459	538
Piper PA-28 Cherokee, Cessna 150/152	A-I	546	640
Piper PA-30/44	A-I	84	98
Pilatus PC12, Cessna 208, Socata TBM7	A-II	142	166
Baron 58, Cessna 310/340, Aztec	B-I	249	292
Beechjet 400, HondaJet	B-I	37	43
Cessna 425/441, Socata TBM-850	B-I	117	137
Beech Super King Air 200/300	B-II	191	224
Cessna 525 Citation Jet CJ1/CJ3/CJ4	B-II	136	159
Cessna 560	B-II	38	44
Cessna 560 Citation XLS	B-II	97	114
Cessna Sovereign/Latitude	B-II	94	110
Bombardier Challenger 300/350/600	C-II	18	21
Cessna 750 Citation X, Falcon 2000	C-II	79	93
Citation II/Bravo, Embraer Legacy	C-II	53	62
Dassault Falcon 50/900	C-II	9	10
Embraer ERJ 135/145	C-II	195	247
Learjet 35/40/45/60/75, Hawker 800	C-II	50	58
Embraer ERJ 170/175	C-III	132	408
Canadair Regional Jet CRJ-200/700	D-II	190	0
Boeing 737-800	D-III	4	5
Total Operations		**4,657**	**5,512**
Subtotals by AAC	A	2,970	3,483
	B	958	1,123
	C	535	900
	D	193	5
Subtotals by ADG	I	3,231	3,789
	II	1,290	1,309
	III	136	413
Subtotals by TDG	1A	3,250	3,811
	1B	404	252
	2A	672	789

2B	195	247
3	136	413

*Military traffic was excluded from this analysis because critical aircraft is determined by civilian aircraft for FAA funding purposes.
Source: FAA CY 2023 TFMSC aviation activity data; RS&H analysis, 2023

Table 2-32 Runway 18-36 Critical Aircraft Determination

	Representative Aircraft	AAC	ADG	TDG
Runway 18-36				
Existing Critical Aircraft	Business Jets	C	II	2A
Future Critical Aircraft	Business Jets	C	II	2A
*Future Military Aircraft	KC-46 - Pegasus	C	IV	5

Source: RS&H Analysis, 2023
*Runway 18-36 does not currently support military operations

The military is currently unable to operate on Runway 18-36 due to length, width, and strength requirements. The IANG has future plans to expand Runway 18-36 to accommodate the KC-135/KC-46 and fighter jets which will be discussed further in the Facility Requirements chapter of this Master Plan. Due to the potential future use of Runway 18-36, it is critical the airport protect for a C-IV airfield requirements.

As federal funding aid is only intended for design standards associated with civilian use, the funding support of any rehabilitation, improvement, and development projects on each runway would be limited to the critical aircraft requirements at the time of project scope formulation. For SUX, funding to accommodate the design requirements of the IANG in excess of SUX's civilian aircraft needs would require support by the Department of Defense.

2.8 Comparison to the FAA TAF

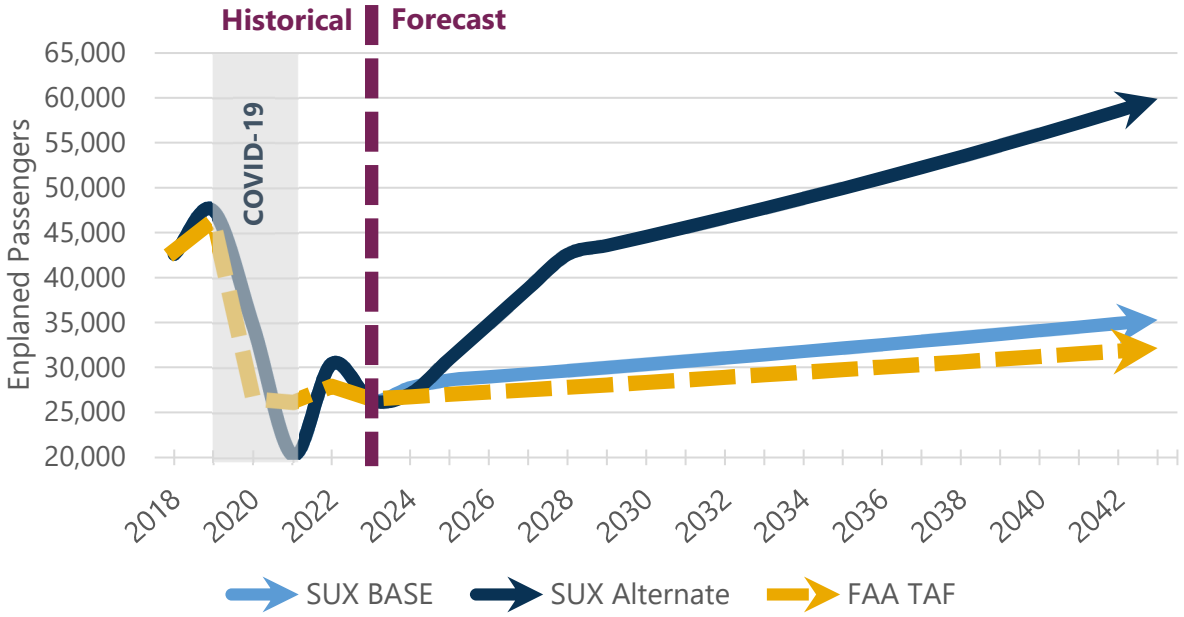
The FAA has oversight responsibility to review and approve aviation forecast developed in conjunction with airport planning studies.. As previously mentioned in Section 2.1, the FAA must approve sponsor forecasts before they can be used to prepare facility requirements in a master plan or before going forward with an environmental document that requires a forecast. The FAA uses a 10.0 percent threshold for the first 5 years and a 15.0 percent threshold for the subsequent 5-year period as a rule-of-thumb for accepting non-FAA forecasts as the basis for planning and environmental studies. If these stated thresholds are exceeded, the FAA Region office in which the airport is located, will forward the forecasts to FAA headquarters for review.

2.8.1 SUX Enplanements Compared to FAA TAF

After developing the forecast of total enplaned passengers for SUX, the results were compared to the FFY 2024 FAA TAF, the latest available TAF document produced and published by the FAA in January 2024. As can be seen in **Figure 2-10** and **Table 2-33**, the 2023 Master Plan Update

forecast (SUX Base) of total enplaned passengers tracks within the FAA TAF threshold throughout the planning period.

Figure 2-10 SUX Enplanements Compared to FAA TAF



Source: US DOT; Airport Records; RS&H Analysis, 2023

Table 2-33 SUX Forecast – Enplanements Compared to the FAA TAF

		2023 Master Plan Update				
	Fiscal Year	**Base Scenario**	**Alternate Scenario**	**2024 TAF Enplanements[23]**	**Difference Base vs TAF**	**Percent (%) Diff w/ TAF[24]***
Baseline	2023	26,380	26,380	26,491	111	**-0.4%**
Forecast	2024	27,757	27,100	26,748	1,009	**3.8%**
	2025	28,624	31,000	27,008	1,616	**6.0%**
	2026	28,960	34,900	27,270	1,690	**6.2%**
	2027	29,300	38,800	27,535	1,765	**6.4%**
+ 5 Years	2028	29,644	42,600	27,800	1,844	**6.6%**
+ 10 Years	2033	31,426	47,700	29,181	2,245	**7.7%**
+ 15 Years	2038	33,315	53,500	30,635	2,680	**8.7%**
+ 20 Years	2043	35,317	59,900	32,159	3,158	**9.8%**

Compound Annual Growth Rates			
2023 - 2024	5.2%	2.7%	1.0%
2024 - 2033	1.4%	6.5%	1.0%
2033 - 2043	1.2%	2.3%	1.0%
2023 - 2043	1.5%	4.2%	1.0%
2024 - 2043	1.3%	4.3%	1.0%
2025 - 2043	1.6%	3.7%	1.0%

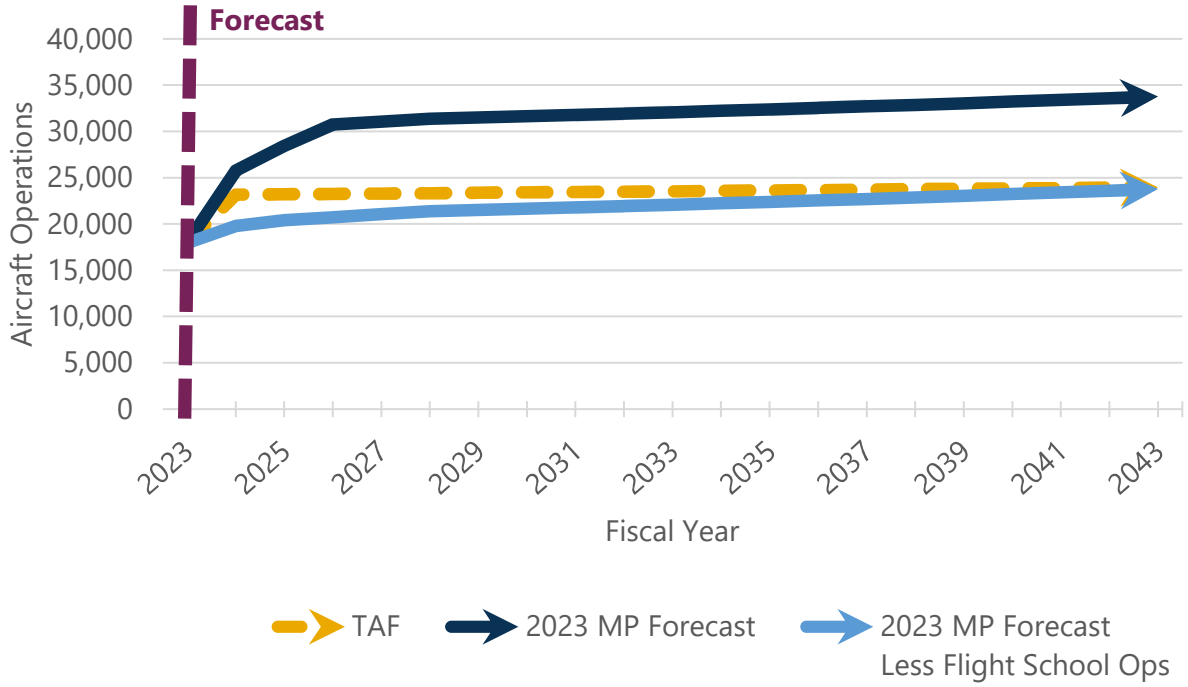
Source: US DOT; Airport Records; RS&H Analysis, 2023

[23] TAF is in FFY while Sioux City Airport is in FY
[24] 2024 TAF enplanements are compared to the SUX 2023 Master Plan Update Base Scenario

2.8.2 SUX Total Operations Compared to the FAA TAF

Total aircraft operations at SUX by activity type (passenger, general aviation, and military) were consolidated for comparison purposes with the TAF. RS&H prepared two aircraft operations forecast comparisons to the TAF for SUX. This approach was taken because two flights schools either have started or will start operation at SUX in CY 2023 which is after the most recent FAA TAF was published. It is possible that the FAA did not anticipate the added traffic produced by these flight schools, as such the forecast for GA operations exceed the 10.0 percent and 15.0 percent threshold. See **Figure 2-11** and **Table 2-34** for the two aircraft operations forecasts for the planning period and how they compare to the FAA TAF.

Figure 2-11 SUX Total Operations Compared to the FAA TAF



Source: 2023 FAA TAF; RS&H Analysis, 2023

Table 2-34 SUX Total Operations Compared to the FAA TAF

						Without Anticipated Flight School Activity				With Anticipated Flight School Activity			
	Fiscal Year	2024 TAF Operations	Passenger	Military	Air Taxi	General Aviation	Total Forecast Operations	Diff w/ TAF	Percent (%) Diff w/ TAF	General Aviation	Total Forecast Operation	Diff w/ TAF	Percent (%) Diff w/ TAF
Baseline	2023	23,128	1,419	1,819	1,421	13,305	17,964	5,164	**-22.3%**	13,305	17,964	5,164	**-22.3%**
Forecast	2024	23,169	1,493	2,900	2,000	13,400	19,793	3,376	**-14.6%**	19,400	25,793	2,624	**11.3%**
	2025	23,211	1,527	3,300	2,100	13,500	20,427	2,784	**-12.0%**	21,500	28,427	5,216	**22.5%**
	2026	23,253	1,545	3,500	2,100	13,600	20,745	2,508	**-10.8%**	23,600	30,745	7,492	**32.2%**
	2027	23,294	1,563	3,700	2,100	13,700	21,063	2,231	**-9.6%**	23,700	31,063	7,769	**33.4%**
+ 5 Years	2028	23,336	1,581	3,800	2,200	13,800	21,381	1,955	**-8.4%**	23,800	31,381	8,045	**34.5%**
+ 10 Years	2033	23,546	1,676	3,800	2,300	14,300	22,076	1,470	**-6.2%**	24,300	32,076	8,530	**36.2%**
+ 15 Years	2038	23,760	1,777	3,800	2,400	14,900	22,877	883	**-3.7%**	24,900	32,877	9,117	**38.4%**
+ 20 Years	2043	23,977	1,884	3,800	2,500	15,600	23,784	193	**-0.8%**	25,600	33,784	9,807	**40.9%**
Compound Annual Growth Rate													
2023 - 2024		0.2%	5.2%	59.4%	40.7%	0.7%	10.2%	-34.6%		45.8%	43.6%	49.2%	
2024 - 2033		0.2%	1.3%	3.0%	1.6%	0.7%	1.2%	-8.8%		2.5%	2.5%	14.0%	
2033 - 2043		0.2%	1.2%	0.0%	0.8%	0.9%	0.7%	-18.4%		0.5%	0.5%	1.4%	
2023 - 2043		0.2%	1.4%	3.8%	2.9%	0.8%	1.4%	-15.2%		3.3%	3.2%	3.3%	
2024 - 2043		0.2%	1.2%	1.4%	1.2%	0.8%	1.0%	-14.0%		1.5%	1.4%	7.2%	

Source: 2023 FAA TAF; RS&H Analysis, 2023

2.9 Forecast Summary

Table 2-35 presents a summary listing of the aviation demand forecasts at SUX. These projections are used in the following chapters of the Master Plan to assess the capacity of existing facilities and determine facility expansions or improvements needed to satisfy future activity levels.

Table 2-35 Forecast Summary

	Base Year	Milestone Years				CAGR				FAA TAF Comparison - % above or (below) TAF			
	2023	2028	2033	2038	2043	2023-2028	2023-2033	2033-2043	2023-2043	2028	2033	2038	2043
		+ 5 Years	PAL 1	PAL 2	PAL 3					+5 Years	PAL 1	PAL 2	PAL 3
Enplanements													
Total Enplanements	**26,380**	**29,644**	**31,426**	**33,315**	**35,317**	**2.4%**	**1.8%**	**1.2%**	**1.5%**	**6.6%**	**7.7%**	**8.7%**	**9.8%**
Operations													
Passenger	1,419	1,581	1,676	1,777	1,884	2.2%	1.7%	1.2%	1.4%	97.1%	97.3%	97.4%	97.6%
General Aviation	13,305	23,800	24,300	24,900	25,600	12.3%	6.2%	0.5%	3.3%	25.1%	26.1%	27.3%	28.8%
Air Taxi	1,421	2,200	2,300	2,400	2,500	9.1%	4.9%	0.8%	2.9%	(8.4%)	(6.9%)	(5.8%)	(4.7%)
Military	1,819	3,800	3,800	3,800	3,800	15.9%	7.6%	0.0%	3.8%	18.8%	18.8%	18.8%	18.8%
Total Operations	**17,964**	**31,381**	**32,076**	**32,877**	**33,784**	**11.8%**	**6.0%**	**0.5%**	**3.2%**	**34.5%**	**36.2%**	**38.4%**	**40.9%**
Based Aircraft													
Single Engine	41	51	51	51	51	4.5%	2.2%	0.0%	1.1%				
Multi-Engine	3	3	3	3	3	(0.4%)	(0.4%)	(0.1%)	(0.2%)				
Turbojet	11	11	13	15	17	0.0%	1.7%	2.7%	2.2%	Forecast By Aircraft Type Not Included In FAA TAF			
Helicopter	2	2	2	2	3	1.5%	1.5%	1.5%	1.5%				
Military	9	9	9	9	9	0.0%	0.0%	0.0%	0.0%				
Total Based Aircraft	**66**	**76**	**78**	**80**	**83**	**2.9%**	**1.7%**	**0.5%**	**1.1%**	**4.2%**	**7.1%**	**9.4%**	**13.1%**

*FAA TAF classifies the existing commercial service at SUX with the CRJ-200 as Air Taxi while the Master Plan Forecast classifies that operation as Passenger
Source: RS&H Analysis, 2023

Appendix A
Forecast Regressions
Sioux Gateway Airport/Brigadier General Bud Day Field

Documentation of Invalid Regressions

In the Sioux City MSA, there are numerous economic factors which support the trends of the Airport's aviation activity. Those trends, however, proved to be inconsistent with the historical enplaned passenger patterns exhibited by the Airport from FY 2000 through FY 2023. A group of univariate and multivariate regression using independent variables such a population and total personal income for the was conducted using the Airport's historical enplaned passengers as the dependent variable from FY 2000 through FY 2023. The regressions did not produce a statistically significant fit. The following tables include the regression historical dependent and independent variables and the univariate and multivariate regressions outputs. All of the regressions are invalid as shown by the adjusted R Squares and independent variable coefficients with incorrect signs which are highlighted in green.

Sioux City Enplaned Passenger Regression

Historical Data for Dependent (Enplaned Passengers) and Idependent Varibales

FISCAL YEAR	POPULATION	EMPLOYMENT	PCPI (2012)	PERSONAL INCOME (2012)	DUMMY VARIABLE	ENPLANED PASSENGERS
2000	167,762	109,034	34,270	5,749,121,000	0	87,267
2001	167,040	108,991	34,719	5,799,472,000	0	90,460
2002	166,544	106,274	34,778	5,792,122,000	1	73,692
2003	166,232	105,154	35,130	5,839,736,000	1	46,646
2004	166,178	104,146	37,499	6,231,587,000	1	42,574
2005	164,840	105,097	39,239	6,468,207,000	1	41,976
2006	165,345	106,343	39,990	6,612,090,000	1	36,957
2007	165,607	109,348	43,131	7,142,727,000	1	30,957
2008	166,196	110,418	45,568	7,573,290,000	0	61,264
2009	167,549	108,706	42,117	7,056,615,000	1	35,859
2010	168,880	107,749	42,949	7,253,188,000	1	28,040
2011	169,549	107,928	41,722	7,073,985,000	1	27,505
2012	169,659	108,685	42,188	7,157,574,000	0	28,274
2013	170,199	110,712	41,265	7,023,340,000	1	26,631
2014	170,695	112,060	42,364	7,231,254,000	1	25,331
2015	171,378	113,258	44,378	7,605,468,000	0	31,506
2016	172,292	112,814	44,726	7,705,902,000	1	27,154
2017	172,036	110,866	44,529	7,660,540,000	0	43,480
2018	173,121	112,474	46,064	7,974,655,000	1	42,607
2019	174,899	112,110	47,720	8,346,229,000	0	47,505
2020	175,580	109,266	50,082	8,793,471,000	1	34,710
2021	175,200	111,446	52,211	9,147,380,000	1	20,289
2022	174,921	113,132	50,609	8,852,647,000	0	30,419
2023	175,163	113,974	50,951	8,924,799,000	1	26,380
CAGR FY 2000-2023	**0.19%**	**0.19%**	**1.74%**	**1.93%**	**N/A**	**-5.07%**

Regression 1: Univariate Regression (Population and Dummy)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.641487073
R Square	0.411505664
Adjusted R Square	0.355458585
Standard Error	15284.01009
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	3430263302	1715131651	7.342142848	0.003822029
Residual	21	4905620255	233600964.5		
Total	23	8335883557			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	483454.5936	152116.9132	3.178177782	0.004526862	167110.155	799799.0323	167110.155	799799.0323
POPULATION	-2.52766662	0.89168946	-2.83469384	0.009925266	-4.382036363	-0.67329687	-4.38203636	-0.67329687
DUMMY	-19404.4805	6669.425207	-2.90946819	0.00838293	-33274.30945	-5534.65146	-33274.3095	-5534.65146

Regression 2: Univariate Regression (Personal Income and Dummy)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.755215316
R Square	0.570350173
Adjusted R Square	0.529431142
Standard Error	13059.40808
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	4754372630	2377186315	13.9385063	0.000140509
Residual	21	3581510926	170548139.4		
Total	23	8335883557			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	136833.398	20000.71897	6.841423962	9.18481E-07	95239.62595	178427.1701	95239.62595	178427.1701
PERSONAL INCOME (2012)	-1.1482E-05	2.65019E-06	-4.3324485	0.00029342	-1.69932E-05	-5.9704E-06	-1.6993E-05	-5.9704E-06
DUMMY	-17938.909	5658.484994	-3.17026714	0.004610571	-29706.37276	-6171.4453	-29706.3728	-6171.4453

Regression 3: Univariate Regression (Employment and Dummy)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.620681046
R Square	0.385244961
Adjusted R Square	0.326696862
Standard Error	15621.30173
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	3211357136	1605678568	6.579973868	0.006044662
Residual	21	5124526420	244025067.6		
Total	23	8335883557			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	403918.3228	134915.3611	2.993864595	0.006918126	123346.4701	684490.1755	123346.4701	684490.1755
EMPLOYMENT	-3.1711118	1.216497964	-2.60675471	0.016470457	-5.700957806	-0.641265791	-5.70095781	-0.64126579
DUMMY	-22911.2678	7126.314527	-3.21502338	0.004156016	-37731.25015	-8091.285442	-37731.2501	-8091.28544

Regression 4: Multivariate Regression (Population, Employment and Dummy)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.653312281
R Square	0.426816936
Adjusted R Square	0.340839476
Standard Error	15456.36969
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	3557896278	1185965426	4.964288756	0.009789978
Residual	20	4777987278	238899363.9		
Total	23	8335883557			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	499897.6538	155468.5529	3.215426171	0.004340601	175595.9352	824199.3724	175595.9352	824199.3724
POPULATION	-1.71901145	1.427283084	-1.20439419	0.242497334	-4.696271794	1.25824889	-4.69627179	1.25824889
EMPLOYMENT	-1.39252153	1.905144699	-0.73092691	0.473300686	-5.366583734	2.581540671	-5.36658373	2.581540671
DUMMY	-21223.2706	7189.01486	-2.95218065	0.007878425	-36219.2928	-6227.24835	-36219.2928	-6227.24835

Regression 5: Multivariate Regression (Population, PCPI and Dummy)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.771231892
R Square	0.594798631
Adjusted R Square	0.534018426
Standard Error	12995.59816
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	4958172127	1652724042	9.786058261	0.000350761
Residual	20	3377711430	168885571.5		
Total	23	8335883557			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	41990.35386	195630.0607	0.214641624	0.832220158	-366086.8019	450067.5096	-366086.802	450067.5096
POPULATION	0.746228507	1.326492344	0.562557719	0.579987811	-2.020786035	3.51324305	-2.02078604	3.51324305
PCPI (2012)	-2.71387164	0.902270705	-3.00782418	0.006952332	-4.595975352	-0.83176793	-4.59597535	-0.83176793
DUMMY	-17009.5936	5726.463717	-2.97034862	0.007563696	-28954.78762	-5064.39962	-28954.7876	-5064.39962

Regression 6: Multivariate Regression (Population, Personal Income, PCPI, Employment and Dummy)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.874241391
R Square	0.764298009
Adjusted R Square	0.698825234
Standard Error	10447.712
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	6371099209	1274219842	11.67352396	3.87431E-05
Residual	18	1964784348	109154686		
Total	23	8335883557			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	18937.07815	1665880.109	0.011367612	0.9910552	-3480947.159	3518821.315	-3480947.16	3518821.315
POPULATION	-1.87130042	10.2179986	-0.18313767	0.856737049	-23.33851888	19.59591804	-23.3385189	19.59591804
PERSONAL INCOME (2012)	0.000177236	0.000195585	0.90618419	0.376809469	-0.000233672	0.000588144	-0.00023367	0.000588144
PCPI (2012)	-28.8606895	33.73373943	-0.85554374	0.403495226	-99.73264615	42.01126719	-99.7326461	42.01126719
EMPLOYMENT	3.330486699	1.455466613	2.288260458	0.034435991	0.272664812	6.388308585	0.272664812	6.388308585
DUMMY	-6471.67785	1657.373402	-3.9047796	0.001038299	-9953.690158	-2989.66554	-9953.69016	-2989.66554

Appendix B
Historical Aircraft Operations
Sioux Gateway Airport/Brigadier General Bud Day Field

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

January, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**195**	**149**	**-24%**	**195**	**149**	**-24%**
Air Carrier	**136**	**89**	**-35%**	**136**	**89**	**-35%**
Military	**471**	**585**	**24%**	**471**	**585**	**24%**
General Aviation	**863**	**907**	**5%**	**863**	**907**	**5%**
Total Operations	**1,665**	**1,730**	**4%**	**1,665**	**1,730**	**4%**
PASSENGER ENPLANEMENTS						
United/SkyWest	**1,852**	**1,594**	**-14%**	**1,852**	**1,594**	**-14%**
Charters	**0**	**0**	**0%**	**0**	**0**	**0%**
Total Enplanements	**1,852**	**1,594**	**-14%**	**1,852**	**1,594**	**-14%**
PASSENGER DEPLANEMENTS						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**1,928**	**1,634**	**-15%**	**1,928**	**1,634**	**-15%**
Charters			**0%**	**0**	**0**	**0%**
Total Deplanements	**1,928**	**1,634**	**-15%**	**1,928**	**1,634**	**-15%**
TOTAL PASSENGERS	**3,780**	**3,228**	**-15%**	**3,780**	**3,228**	**-15%**

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

February, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**196**	**167**	**-15%**	**391**	**316**	**-19%**
Air Carrier	**141**	**110**	**-22%**	**277**	**199**	**-28%**
Military	**259**	**255**	**-2%**	**730**	**840**	**15%**
General Aviation	**736**	**1110**	**51%**	**1599**	**2017**	**26%**
Total Operations	**1,332**	**1,642**	**23%**	**2,997**	**3,372**	**13%**
PASSENGER ENPLANEMENTS						
United	**2,068**	**1,559**	**-25%**	**3,920**	**3,153**	**-20%**
Charters	**0**	**0**	**0%**	**0**	**0**	**0%**
Total Enplanements	**2,068**	**1,559**	**-25%**	**3,920**	**3,153**	**-20%**
PASSENGER DEPLANEMENTS						
United/SkyWest	**1,931**	**1,531**	**-21%**	**3,859**	**3,165**	**-18%**
Charters	**0**	**0**	**0%**	**0**	**0**	**0%**
Total Deplanements	**1,931**	**1,531**	**-21%**	**3,859**	**3,165**	**-18%**
TOTAL PASSENGERS	**3,999**	**3,090**	**-23%**	**7,779**	**6,318**	**-19%**

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

March, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**203**	**192**	**-5%**	**594**	**508**	**-14%**
Air Carrier	**151**	**131**	**-13%**	**428**	**330**	**-23%**
Military	**275**	**166**	**-40%**	**1005**	**1006**	**0%**
General Aviation	**988**	**1252**	**27%**	**2587**	**3269**	**26%**
Total Operations	**1,617**	**1,741**	**8%**	**4,614**	**5,113**	**11%**
PASSENGER ENPLANEMENTS						
United/SkyWest	**2,103**	**2,416**	**15%**	**6,023**	**5,569**	**-8%**
Charters	**0**	**0**	**0%**	**0**	**0**	**0%**
Total Enplanements	**2,103**	**2,416**	**15%**	**6,023**	**5,569**	**-8%**
PASSENGER DEPLANEMENTS						
United	**2,126**	**2,471**	**16%**	**5,985**	**5,636**	**-6%**
Charters	**0**	**0**	**0%**	**0**	**0**	**0%**
Total Deplanements	**2,126**	**2,471**	**16%**	**5,985**	**5,636**	**-6%**
TOTAL PASSENGERS	**4,229**	**4,887**	**16%**	**12,008**	**11,205**	**-7%**

Flight schedule changes due to COVID-19 began to impact revenue streams during March, 2020

American Airlines left April, 2021; SkyWest suspended DEN additional flight Nov, 2021

SkyWest issued EAS term notice March 10, 2022.

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

April, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**163**	**204**	**25%**	**757**	**712**	**-6%**
Air Carrier	**110**	**144**	**31%**	**538**	**474**	**-12%**
Military	**226**	**254**	**12%**	**1231**	**1260**	**2%**
General Aviation	**799**	**1299**	**63%**	**3386**	**4568**	**35%**
Total Operations	**1,298**	**1,901**	**46%**	**5,912**	**7,014**	**19%**
PASSENGER ENPLANEMENTS						
United/SkyWest	**1,969**	**2,381**	**21%**	**7,992**	**7,950**	**-1%**
Charters	**0**	**66**	**0%**	**0**	**66**	**0%**
Total Enplanements	**1,969**	**2,447**	**24%**	**7,992**	**8,016**	**0%**
PASSENGER DEPLANEMENTS						
United	**1,898**	**2,426**	**28%**	**7,883**	**8,062**	**2%**
Charters	**0**	**66**	**0%**	**0**	**66**	**0%**
Total Deplanements	**1,898**	**2,492**	**31%**	**7,883**	**8,128**	**3%**
TOTAL PASSENGERS	**3,867**	**4,939**	**28%**	**15,875**	**16,144**	**2%**

Flight schedule changes due to COVID-19 began to impact revenue streams during March, 2020

American Airlines left April, 2021; SkyWest suspended DEN additional flight Nov, 2021

SkyWest issued EAS term notice March 10, 2022.

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

May, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**138**	**195**	**41%**	**895**	**907**	**1%**
Air Carrier	**86**	**132**	**53%**	**624**	**606**	**-3%**
Military	**8**	**369**	**4513%**	**1239**	**1629**	**31%**
General Aviation	**821**	**1689**	**106%**	**4207**	**6257**	**49%**
Total Operations	**1,053**	**2,385**	**126%**	**6,965**	**9,399**	**35%**
PASSENGER ENPLANEMENTS						
4,501 American Enplanements May, 2019						
United/SkyWest	**2,225**	**2,703**	**21%**	**10,217**	**10,653**	**4%**
Charters	**0**	**0**	**0%**	**0**	**66**	**0%**
Total Enplanements	**2,225**	**2,703**	**21%**	**10,217**	**10,719**	**5%**
PASSENGER DEPLANEMENTS						
United/SkyWest	**2,975**	**2,601**	**-13%**	**10858**	**10663**	**-2%**
Charters	**0**	**0**	**0%**	**0**	**66**	**0%**
Total Deplanements	**2,975**	**2,601**	**-13%**	**10,858**	**10,729**	**-1%**
TOTAL PASSENGERS	**5,200**	**5,304**	**2%**	**21,075**	**21,448**	**2%**

Flight schedule changes due to COVID-19 began to impact revenue streams during March, 2020

American Airlines left April, 2021; SkyWest suspended DEN additional flight Nov, 2021

SkyWest issued EAS term notice March 10, 2022.

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

June, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**169**	**201**	**19%**	**1064**	**1108**	**4%**
Air Carrier	**117**	**140**	**20%**	**741**	**746**	**1%**
Military	**30**	**438**	**1360%**	**1269**	**2067**	**63%**
General Aviation	**1029**	**2116**	**106%**	**5236**	**8373**	**60%**
Total Operations	**1,345**	**2,895**	**115%**	**8,310**	**12,294**	**48%**
PASSENGER ENPLANEMENTS						
4,061 American Enplanements June, 2019						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**2,305**	**2,367**	**3%**	**12,522**	**13,020**	**4%**
Charters	**0**	**0**	**0%**	**0**	**66**	**0%**
Total Enplanements	**2,305**	**2,367**	**3%**	**12,522**	**13,086**	**5%**
PASSENGER DEPLANEMENTS						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**2,315**	**2,346**	**1%**	**13,173**	**13,009**	**-1%**
Charters	**0**	**0**	**0%**	**0**	**66**	**0%**
Total Deplanements	**2,315**	**2,346**	**1%**	**13,173**	**13,075**	**-1%**
TOTAL PASSENGERS	**1,149**	**4,713**	**310%**	**25,695**	**26,161**	**2%**

***Notes:** American left April,2019 *COVID-19 March, 2020 *SkyWest started Denver October, 2020 *SkyWest decreased to 2 flights per day November, 2021 *SkyWest provided notice to the DOT March, 2022

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

July, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**224**	**219**	**-2%**	**1288**	**1327**	**3%**
Air Carrier	**166**	**157**	**-5%**	**907**	**903**	**0%**
Military	**13**	**270**	**1977%**	**1282**	**2337**	**82%**
General Aviation	**1608**	**2230**	**39%**	**6844**	**10,603**	**55%**
Total Operations	**2,011**	**2,876**	**43%**	**10,321**	**15,170**	**47%**
PASSENGER ENPLANEMENTS						
July 2019 American Enplanements - 3,990						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**2,362**	**2,189**	**-7%**	**14,884**	**15,209**	**2%**
Charters	**0**	**0**	**0%**	**0**	**66**	**0%**
Total Enplanements	**2,362**	**2,189**	**-7%**	**14,884**	**15,275**	**3%**
PASSENGER DEPLANEMENTS						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**2,382**	**2,303**	**-3%**	**15,555**	**15312**	**-2%**
Charters	**0**	**0**	**0%**	**0**	**66**	**0%**
Total Deplanements	**2,382**	**2,303**	**-3%**	**15,555**	**15,378**	**-1%**
TOTAL PASSENGERS	**4,744**	**4,492**	**-5%**	**30,439**	**30,653**	**1%**

***Notes:** American left April,2019 *COVID-19 March, 2020 *SkyWest started Denver October, 2020 *SkyWest decreased to 2 flights per day November, 2021 *SkyWest provided notice to the DOT March, 2022

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

August, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**230**	**204**	**-11%**	**1518**	**1531**	**1%**
Air Carrier	**168**	**142**	**-15%**	**1075**	**1045**	**-3%**
Military	**5**	**377**	**7440%**	**1287**	**2714**	**111%**
General Aviation	**1149**	**2148**	**87%**	**7993**	**12751**	**60%**
Total Operations	**1,552**	**2,871**	**85%**	**11,873**	**18,041**	**52%**
PASSENGER ENPLANEMENTS						
August 2019 American Enplanements - 2,959						
United/SkyWest	**2,246**	**2,483**	**11%**	**17,130**	**17,692**	**3%**
Charters	**0**	**43**	**0%**	**0**	**109**	**0%**
Total Enplanements	**2,246**	**2,526**	**12%**	**17,130**	**17,801**	**4%**
PASSENGER DEPLANEMENTS						
United/SkyWest	**2,405**	**2,613**	**9%**	**17,960**	**17925**	**0%**
Charters	**0**	**43**	**0%**	**0**	**109**	**0%**
Total Deplanements	**2,405**	**2,656**	**10%**	**17,960**	**18,034**	**0%**
TOTAL PASSENGERS	**4,651**	**5,182**	**11%**	**35,090**	**35,835**	**2%**

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

September, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**221**	**220**	**0%**	**1,739**	**1,751**	**1%**
Air Carrier	**161**	**160**	**-1%**	**1,236**	**1,205**	**-3%**
Military 2018 170mo / 1,773ytd	**6**	**206**	**3333%**	**1,293**	**2,920**	**126%**
General Aviation 2018 1,067mo / 8,500ytd	**1,043**	**1,694**	**62%**	**9,036**	**14,445**	**60%**
Total Operations	**1,431**	**2,280**	**59%**	**13,304**	**20,321**	**53%**
PASSENGER ENPLANEMENTS						
September 2019 American Enplanements - 3,798						
United/SkyWest	**2,218**	**2,314**	**4%**	**19,348**	**20,006**	**3%**
Charters	**0**	**0**	**0%**	**0**	**109**	**0%**
Total Enplanements	**2,218**	**2,314**	**4%**	**19,348**	**20,115**	**4%**
PASSENGER DEPLANEMENTS						
United/SkyWest	**2,295**	**2,377**	**4%**	**20,255**	**20,302**	**0%**
Charters	**0**	**0**	**0%**	**0**	**109**	**0%**
Total Deplanements	**2,295**	**2,377**	**4%**	**20,255**	**20,411**	**1%**
TOTAL PASSENGERS	**4,513**	**4,691**	**4%**	**39,603**	**40,526**	**2%**

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

October, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	214	213	0%	1953	1964	1%
Air Carrier	152	150	-1%	1388	1355	-2%
Military	4	269	6625%	1297	3189	146%
General Aviation	1303	1625	25%	10339	16070	55%
Total Operations	1,673	2,257	35%	14,977	22,578	51%
PASSENGER ENPLANEMENTS						
United/SkyWest	2,439	2,374	-3%	21,787	22,380	3%
Charters	0	32	0%	0	141	0%
Total Enplanements	2,439	2,406	-1%	21,787	22,521	3%
PASSENGER DEPLANEMENTS						
United/SkyWest	2,517	2,516	0%	22,772	22,818	0%
Charters	0	32	0%	0	141	0%
Total Deplanements	2,517	2,548	1%	22,772	22,959	1%
TOTAL PASSENGERS	4,956	4,954	0%	44,559	45,480	2%

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

November, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**177**	**188**	**6%**	**2130**	**2152**	**1%**
Air Carrier	**117**	**129**	**10%**	**1505**	**1484**	**-1%**
Military	**36**	**315**	**775%**	**1333**	**3504**	**163%**
General Aviation	**1143**	**1718**	**50%**	**11482**	**17788**	**55%**
Total Operations	**1,473**	**2,350**	**60%**	**16,450**	**24,928**	**52%**
PASSENGER ENPLANEMENTS						
November 2019 Enplanements 4,264						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**2,602**	**2,428**	**-7%**	**24,389**	**24,808**	**2%**
Charters	**0**	**0**	**0%**	**0**	**141**	**0%**
Total Enplanements	**2,602**	**2,428**	**-7%**	**24,389**	**24,949**	**2%**
PASSENGER DEPLANEMENTS						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**2,579**	**2,472**	**-4%**	**25,351**	**25,290**	**0%**
Charters	**0**	**0**	**0%**	**0**	**141**	**0%**
Total Deplanements	**2,579**	**2,472**	**-4%**	**25,351**	**25,431**	**0%**
TOTAL PASSENGERS	**5,181**	**4,900**	**-5%**	**49,740**	**50,380**	**1%**

SIOUX GATEWAY AIRPORT/BRIGADIER GENERAL BUD DAY FIELD (Sioux City, IA)

Operational Statistics

December, 2023

	Current Month			Year-To-Date		
AIRPORT OPERATIONS	**2022**	**2023**	**Change**	**2022**	**2023**	**Change**
Air Taxi	**168**	**220**	**31%**	**2298**	**2372**	**3%**
Air Carrier	**110**	**159**	**45%**	**1615**	**1643**	**2%**
Military	**126**	**286**	**127%**	**1459**	**3790**	**160%**
General Aviation	**806**	**1380**	**71%**	**12288**	**19168**	**56%**
Total Operations	**1,210**	**2,045**	**69%**	**17,660**	**26,973**	**53%**
PASSENGER ENPLANEMENTS						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
United/SkyWest	**1,767**	**2,503**	**42%**	**26,156**	**27,311**	**4%**
Charters	**0**	**0**	**0%**	**0**	**141**	**0%**
Total Enplanements	**1,767**	**2,503**	**42%**	**26,156**	**27,452**	**5%**
PASSENGER DEPLANEMENTS						
American Eagle	**0**	**0**	**0%**	**0**	**0**	**0%**
SkyWest	**1,854**	**2,357**	**27%**	**27,205**	**27,647**	**2%**
Charters	**0**	**0**	**0%**	**0**	**141**	**0%**
Total Deplanements	**1,854**	**2,357**	**27%**	**27,205**	**27,788**	**2%**
TOTAL PASSENGERS	**3,621**	**4,860**	**34%**	**53,361**	**55,240**	**4%**