Evanston-Uinta County Airport

Airport Master Plan

Chapter Four: Forecast

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DRAFT

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4.0 FORECAST OF AVIATION DEMAND

The forecast is an essential component of the airport master planning process. It is used to help understand and anticipate the aviation activity that is expected to occur at the airport during the 20-year planning period of 2023–2043. It also provides the basis for guiding airport development needed to meet future demand.

4.1 Introduction

An effective forecast should be realistic, based on current data, and developed using appropriate methods. Developing a forecast for an airport master plan involves considering a variety of factors that can vary in complexity—such as the size and location of the airport, type of aircraft using the airport, and activity levels. However, every forecast is developed using the same series of basic steps. As outlined in FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, these steps include identifying existing aviation activity; reviewing historical aviation activity and previous forecasts; examining industry trends and regional socioeconomic data; selecting appropriate forecast methods; and then applying the methodologies and evaluating the results.

The forecast developed for this airport master plan includes projections for a short-term planning horizon of five years, a medium-term planning horizon of ten years, and a long-term planning horizon of 20 years. Each of these projections uses 2023 as the base year when applying the selected forecasting methodology.

4.2 Factors with the Potential to Affect Aviation Activity

The *2016 Wyoming State Aviation System Plan* (WYSASP) includes information about trends and conditions with the potential to affect aviation activity throughout Wyoming. Additionally, due to EVW's proximity to major tourist attractions in Utah, it is also important to understand Utah's aviation trends and how they could potentially influence aviation demand at EVW.

4.2.1 2016 WYSASP General Aviation in Wyoming

Much of Wyoming is open wilderness with approximately 91% of Wyoming classified as rural. With this comes the many backcountry and sportsman activities that drive much of the tourism for the state. Wyoming's general aviation airports provide access to the many national forests, national parks, and backcountry areas that attract tourists to the state and are therefore a critical part of the state's economy. They also provide essential medical access for doctor and patient transport; especially in areas that are not accessible by ground travel. Because of this, the development of the general aviation system of airports is intended to increase connectivity between regions, provide communities with more accessible medical care, and support local economic activities.

According to the 2016 WYSASP, of the 40 airports included in the Wyoming system plan, 31 of those airports have no commercial air service and solely serve the general aviation community through a network of facilities ranging from paved runways with GA terminals and instrument approaches to unpaved airstrips with no facilities. Due to the state's rural nature along with the limited travel routes available due to the mountainous terrain and often severe winter weather conditions, these airports serve a critical role in the overall Wyoming transportation system and increase the need to have a system of safe and efficient GA airports.[1]

[1] Wyoming Department of Transportation. Aeronautics Division, "2016 Wyoming State Aviation System Plan." 2016. https://www.dot.state.wy.us/home/aeronautics.html.

4.2.2 Statewide Economic Trends Affecting Aviation

According to the WYSASP, economic conditions in Wyoming, and therefore demand for aviation activity, are strongly affected by two large industries: energy production and tourism. While energy production has historically been strong in the state, recent changes in employment indicate this trend is potentially decreasing. According to the WYSASP, which sites the Wyoming Department of Workforce Services, employment in the mining, quarrying, oil, and gas extraction industries had the sharpest decline between the first quarters of 2015 and 2016 at a loss of -23%. However, tourism has continued to grow over the long term with indications that suggest this trend will continue.

a. Oil and Natural Gas Production

According to the WYSASP, Wyoming leads the nation in the supply of energy to other states. A significant portion of this is due to the oil and natural gas extracted from Wyoming's land. These businesses and their employees rely on airports for transportation to and from Wyoming and increase employment and population in energy producing counties.

b. Tourism and National Parks

According to the WYSASP, all areas of visitor spending increased by at least 20% between 2012 and 2015 for Wyoming. As of 2015, the state ranked as one of the highest for all categories of visitor spending effects which demonstrates the importance of the national parks with regard to tourism activity. Access and use of the state aviation system is vital to continued growth in this area. Additionally, increases in visitor spending, which are indicators of economic growth, are also likely to drive demand for aviation services and facilities in Wyoming.

4.2.3 Expanding Service Area

A service area for an airport is generally considered the geographic region from which it is expected to attract the largest share of its activity. This is typically dependent on the classification or size of the airport and the dominate industry in the region. The federal classification for EVW is a local airport that is intended to supplement local communities by providing access to markets within a state or immediate region.

For the past several years, EVW has augmented airports in Utah through its instrument approach capabilities, aircraft storage capacity, ability to support itinerant and stop-over flights, and by being a more cost-effective or convenient option for those traveling to Park City. It was noted through conversations with airport management that many aircraft owners and operators are using EVW instead of Salt Lake City International Airport (SLC) or Heber Valley Airport (HCR).

According to discussions with Airport management, the demand for hangars at EVW is mainly driven by owners of private jet aircraft who either live in or frequent the Park City area. This is a paradigm shift from the last master plan which documented that demand for jet aircraft was primarily related to the oil and gas industry in the region. Drive time to Park City from EVW is comparable to the airports that have long served that market as shown in **Table 4-1**. With hangars filled and costs escalating at HCR, SLC, and other airports in proximity to Park City, EVW is used more often by small- and mid-sized jet operators. This trend is supported through the significant increase in fuel sales; particularly Jet A fuel sales which have increased at a CAGR of 11% since 2019.

Table 4-1 Drive Time from EVW

Year	Distance From Park City	Drive Time
EVW	65 miles	1 hour
HCR	19 miles	32 minutes
SLC	37 miles	40 minutes
U42	40 miles	50 minutes
PVU	50 miles	1 hour, 10 minutes

Lack of available hangars is a problem at airports in the Salt Lake Valley as well as HCR. As a result, EVW is capturing this business as it overflows from surrounding airports in Utah that are at capacity. Several hangars have recently been constructed at EVW, and the airport has agreements for more with future tenants from Utah. Most of the new hangars are to store jet aircraft.

Considering all these factors combined, it is expected that EVW's service area will continue to expand and strengthen into Utah particularly to support jet operations and storage for those accessing the Park City, Utah region.

4.3 Socioeconomic Factors

The socioeconomic characteristics of a community generally influence aviation activity within an airport's geographic region. Data about the area's population, employment, and income activity can help identify trends that may impact current and future aviation operations. These trends are especially important to consider when preparing aviation demand forecasts. This information is also helpful in making sure the community's long-term needs are taken into consideration as part of the airport planning process.

A socioeconomic analysis involves an evaluation of the community's economic activities and includes specific, identifiable, local activities that distinguish the geographic area served. The type of industries in an airport's service area will affect aviation demand as some industries are known to generate more activity than others.

The key socioeconomic indicators examined for this forecast include county population, employment, and per capita income (PCI). These indicators provide insight into the financial strength and well-being of the local economy and can be used to help forecast future aviation activity.

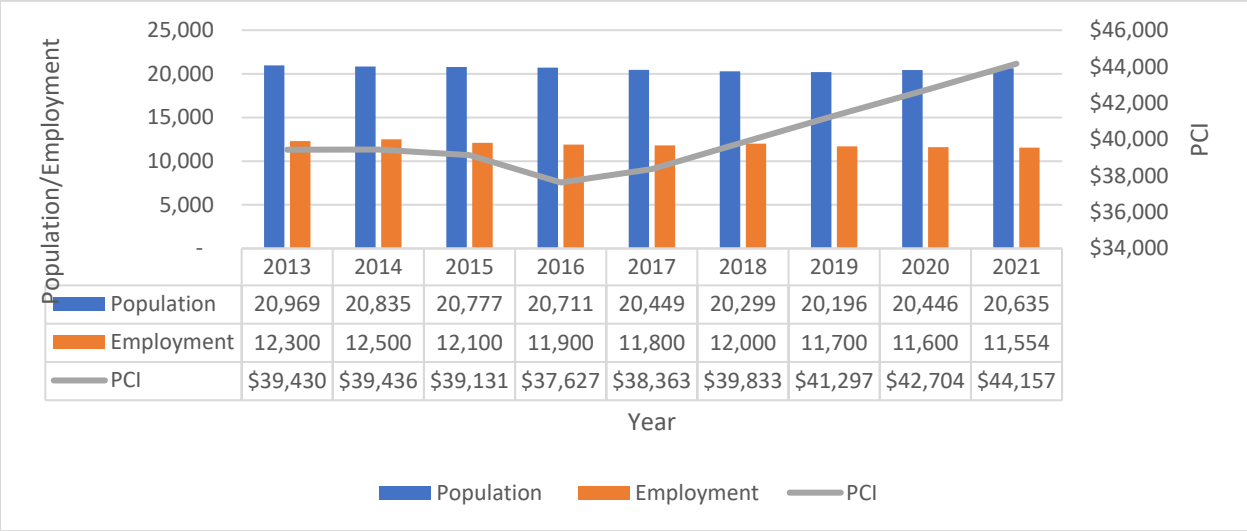
Data for these key indicators was retrieved from Uinta County, *A Profile of Socioeconomic Trends*, published in 2023 by Headwaters Economics.[2] The latest data available was for 2021. Therefore, the historical data used for this forecast is for 2013–2021. **Figure 4-1** presents the trends for population, employment, and per capita income.

Through discussions with the community, business owners, and the city's local economic development director, there has been progress made to expand economic development in the past few years, post-publication of the Headwaters Economics report. The community, and southwest Wyoming at large, has several incoming businesses and activities that will bring good paying jobs, attract tourism, and continue to bolster the economic health of the region. There has also been an uptick in population growth due to people relocating from the Wasatch Front of Utah to more affordable locations. Despite the socioeconomic fluctuations from the past ten

[2] Headwaters Economics. (2023, July 14). A Profile of Socioeconomic Trends. Uinta County, WY, http://eadiv.state.wy.us/wef/P_Uinta_WY.pdf

years, southwest Wyoming is strengthening economically and will continue to grow with intentional efforts of the local community as well as continued relocation from the Wasatch Front and beyond.

Figure 4-1 Historical Socioeconomic Trends



	2013	2014	2015	2016	2017	2018	2019	2020	2021
Population	20,969	20,835	20,777	20,711	20,449	20,299	20,196	20,446	20,635
Employment	12,300	12,500	12,100	11,900	11,800	12,000	11,700	11,600	11,554
PCI	$39,430	$39,436	$39,131	$37,627	$38,363	$39,833	$41,297	$42,704	$44,157

Source: Uinta County, A Profile of Socioeconomic Trends

4.3.1 Population

As shown in **Figure 4-1**, the population has remained relatively stable, with a slight decline from 2017–2019, and the beginnings of a rebound in 2020. Although population is increasing from 2017 levels, the eight year compound annual growth rate (CAGR) is negative, at -0.20%.

4.3.2 Employment

The employment trend has had minor fluctuations during the past eight years and is trending slightly downwards. The eight year CAGR is -0.78%. The top non-service industries include construction, mining (including fossil fuels), manufacturing, and farming. These are volatile industries that experience boom and bust cycles. According to the Uinta County, *A Profile of Socioeconomic Trends*, and also discussed in the 2016 WYSASP, there is an industry shift occurring where more service jobs are becoming available, with a wide variety of low and high paying occupations. The service industry will ultimately help buffer the boom and bust cycles of non-service related labor, and the employment trends are expected to increase as this transition continues.

Evanston is seeing new business developments that include a national shooting complex, an equestrian complex, and an off-track betting complex. These are all large-scale developments anticipated to attract visitors nationally and even internationally. Additionally, Terra Power is planning on constructing a modern nuclear power plant roughly 50 miles north of Evanston in Kemmerer, Wyoming. This project is expected to require roughly 2,000 workers for up to seven years, and many of these workers will likely live in Evanston during construction. These developments are expected to increase employment in the area and generate additional aviation demand at EVW as business owners and staff travel to and from the region.

4.3.3 Per Capita Income

Per capita income peaked in 2009 and had a downward trend until 2016 when it began to increase. The eight-year CAGR for PCI is 1.43%. Per capita income follows similar fluctuating trends of the top three non-service industry sectors but as the shift to more service industries has occurred, the PCI has followed this transition and been buffered from the non-service industry decline. The top service industries include retail, transportation, information, and real estate which are also indicators of a growing community and healthy economy.

4.4 Vicinity Airports

Wyoming airports are used as a vital transportation asset and must work together to create a functional network. The 2016 WYSASP states, "Aviation plays a critical role in Wyoming by providing transportation for both state residents and visitors. Expansive areas of rural and mountainous terrain limit conventional highway travel, and distances between regions in Wyoming can lead to long travel times." This is especially true during winter when severe weather conditions can result in extended travel times between major regions or cities in Wyoming. As a result, the plan includes the goal of ensuring the Wyoming airport system is accessible, cost-effective, and reliable.

One of the performance measures the plan uses to determine if the system is meeting this goal is based on the percentage of Wyoming's population that is within a 30-minute drive to an airport able to accommodate the typical aircraft used for medical transport (e.g., Super King Air or Pilatus PC-12). Access to larger medical facilities and more specialized doctors is a primary mission for Wyoming's airports. Every paved facility in the state is at times used to transport critical patients or specialists into even the most rural areas. The nearest airport with an instrument approach is Fort Bridger Airport located 29 nautical miles to the northeast of EVW. Fort Bridger is roughly a 40-minute drive, during clear conditions, from Evanston via Interstate 80. This interstate is notoriously difficult to travel during winter conditions. These factors solidify EVW's importance to the state's transportation system and to the residents of the city of Evanston.

4.4.1 Utah Tourism

As discussed in Section 4.1.3, it is important to generally assess Salt Lake City and Heber Valley Airport activity to capture the influence it has on EVW. According to the Utah Governor's Office of Economic Opportunity Report, Utah Tourism 2022 Overview,[3] Salt Lake City and Park City rank among the highest tourist destinations in Utah. Park City does not have an airport so those traveling by air use Salt Lake City or Heber Valley Airport and then use a shuttle or other transportation to get to Park City. The drive time is approximately 30–45 minutes from either airport to Park City.

The report also notes that more than 25% of out-of-state visitors rely on aviation as their mode of transportation. As noted, the capacity and cost of these Utah airports is a growing constraint, causing pilots and operators to look for more feasible options for air travel. As such, EVW is an hour's drive time from both Park City and Heber, and just over an hour to Salt Lake City, making it only slighter longer to access prime destinations. Based on conversations with the sponsor, the growing demand for hangars, and the increased number of jet operations, EVW is quickly being recognized as an ideal location for based aircraft and access to tourism and second homes within this area of Utah, specifically Park City.

[3] Utah Governor's Office of Economic Opportunity. Utah Office of Tourism. "Utah Tourism Industry Metrics." Accessed January 15, 2024. https://travel.utah.gov/research-planning/utah-tourism-industry-metrics.

4.5 Historical Aviation Activity

It is important to examine the airport's historical aviation activity and identify past trends before preparing the forecast. Understanding the historical usage patterns and demand for aviation services is useful in analyzing the accuracy of previous forecasts as well as developing and evaluating the current forecast. For EVW, this includes reviewing the *2012 Airport Master Plan*, the 2016 WYSASP, historical data reported by the FAA's Terminal Area Forecast (TAF), and Traffic Flow Management System Counts (TFMSC) database.

4.5.1 Aviation Activity

Every landing, takeoff, or touch-and-go procedure conducted at an airport is counted as one operation. Operations are then classified into categories, local or itinerant. Generally, local operations are flights that originate and terminate at the same airport while itinerant operations are flights that originate and terminate at different airports. Operations are further divided into subcategories and include air carrier, air taxi, military, and general aviation. There are no air carrier operations at EVW, so the forecast will only include air taxi, military, and general aviation operations.

Air taxi operations, which are often referred to as charter flights, are typically unscheduled, for-hire flights conducted using aircraft with 60 or fewer seats. General aviation operations include all other operations that are not considered military.

4.5.2 2012 Airport Master Plan

The *2012 Airport Master Plan* forecast used 2011 as a baseline year, in which there were a total of 6,080 operations and 20 based aircraft. The forecast used several methodologies, with the preferred forecast being a combination of a trend analysis for based aircraft, operations per based aircraft for local operations, and a ratio analysis for transient operations. The 2012 approved forecast is presented in **Table 4-2** and should have been used to update the FAA TAF.

Table 4-2 2012 Forecast

Year	Based Aircraft	Total Operations
2011	20	6,080
2015	23	6,946
2020	26	7,936
2025	30	9,067
2030	34	10,359
CAGR	2.7%	2.7%

Source: 2012 Airport Master Plan

4.5.3 WYSASP

The 2016 WYSASP provides a forecast with the selected methodology being each county's population growth rate (0.18% CAGR for EVW at the time of the forecast). This was applied to operations and based aircraft and was applied for every airport in the system for consistency. The 2016 WYSASP forecast is presented in **Table 4-3**, which also projects growth, though not as quickly as the 2012 airport master plan.

Table 4-3 2016 WYSASP Forecast

	Historical						Forecast			
	2010	2011	2012	2013	2014	2015	2020	2025	2030	2035
Operations										
Air Taxi	135	135	135	135	135	150	151	153	154	155
Itinerant GA	4,300	4,300	4,300	4,300	4,300	4,700	4,742	4,784	4,826	4,869
Military	25	25	25	20	20	30	30	31	31	31
Local GA	1,100	1,100	1,100	1,100	1,100	1,200	1,211	1,221	1,232	1,243
Total Operations	**5,560**	**5,560**	**5,560**	**5,555**	**5,555**	**6,080**	**6,134**	**6,189**	**6,243**	**6,298**
Based Aircraft										
Total Based	**17**	**17**	**18**	**19**	**19**	**16**	**16**	**16**	**16**	**17**

Source: 20176 WYSASP

4.5.4 FAA Historical TAF

Another source of historical data is the Terminal Area Forecast (TAF) which is published by the FAA on an annual basis. Development of the TAF begins with an update of the latest historical operations and based aircraft statistics using information derived from several sources. It is important to note that for airports like EVW without an airport traffic control tower (ATCT), the FAA uses data from the airport master record (FAA Form 5010-1) to update the TAF. The 5010 report includes aviation activity data as estimated by FAA inspectors or information provided by airport managers, state aviation activity surveys, or other available sources. These airports have a harder time accurately tracking and quantifying annual operations. Therefore, the operations are a rough estimation at best. It is important to update the 5010-1 once a forecast has been approved for the TAF to reflect operations more accurately. Over time, this will lead to a more accurate record of historical data.

Table 4-4 presents the historical data provided by the TAF which does not reflect the 2012 approved forecast growth or the 2016 WYSASP forecast growth. The published TAF shows a very slight decline in air taxi and itinerant operations, a significant increase in military operations, and a slight decline in local operations and based aircraft; most of which is the opposite of the trend forecasted in other planning studies.

Table 4-4 Historical TAF

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Operations											
Air Taxi	135	135	135	135	135	135	130	130	130	130	130
Itinerant GA	4,300	4,300	4,300	4,300	4,300	4,300	4,250	4,250	4,250	4,250	4,250
Itinerant Military	20	20	20	20	20	20	120	120	120	120	120
Local GA	1,100	1,100	1,100	1,100	1,100	1,100	1,005	1,005	1,005	1,005	1,005
Total Operations	*5,555*	*5,555*	*5,555*	*5,555*	*5,555*	*5,555*	*5,505*	*5,505*	*5,505*	*5,505*	*5,505*
Based Aircraft											
Total Based	21	21	19	19	15	15	15	16	19	19	19

Source: 2022 FAA TAF

Table 4-5 presents the fuel records in gallons sold. This presents alternate information that indicates an increase in both air taxi and GA operations beginning in 2019.

Table 4-5 Historical Fuel Sales in Gallons Sold

Year	Avgas	Jet A	Total
2019	20,628	44,738	65,366
2020	33,827	64,633	98,460
2021	27,396	71,261	98,657
2022	23,443	65,800	89,243
2023	25,812	73,962	99,774
CAGR	5%	11%	9%

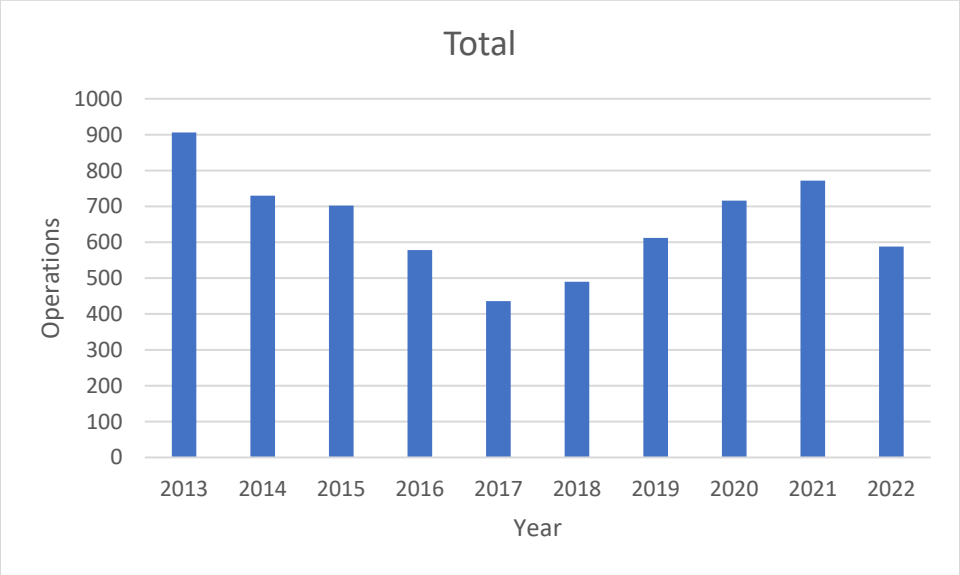
Source: Airport Staff

4.5.5 FAA TFMSC

The FAA's Traffic Flow Management System Counts (TFMSC) database is another source of historical data. TFMSC data is generated when pilots file a flight plan. As a result, it includes operations data for aircraft that operate under instrument flight rules (IFR) and are required to file a flight plan. However, it typically only includes a portion of GA activity because they often operate under visual flight rules (VFR) and are not required to file a flight plan. Despite this limitation, TFMSC data helps identify general trends in airport activity and in establishing the airport's historical operations data.

Figure 4-2 summarizes the historical levels of aircraft operations for 2013–2022 as reported in the TFMSC. This data reveals trends similar to the socioeconomic data with a decline through 2017, followed by a steep increase through 2021, and then a slight decline for an overall negative trend. 2022 data is presented because the full year of 2023 is unavailable at this time.

Figure 4-2 Historical TFMSC



Source: FAA TFMSC

4.6 Forecast Methodologies

There are several acceptable methods for forecasting aviation activity. Quite often, the most reliable approach for generating a reasonable estimate involves using multiple methods. As stated in FAA AC 150/5070-6B, *Airport Master Plans*, the most common techniques are regression analysis, trend analysis, market share analysis, and smoothing.

- **Regression Analysis**

Regression analysis is a statistical technique used to identify trends in data by measuring the relationship between dependent (e.g., aviation demand) and independent variables (e.g., population and income). This method is most effective when using relatively simple sets of data, a strong statistical correlation is evident, and reliable data is available for the independent variables.

- **Trend Analysis**

Trend analysis uses historical patterns to project future activity. This approach is most useful when local conditions are unusual enough to differentiate the study airport from other airports in the region.

- **Market Share Analysis**

This technique assumes a top-down relationship between national, regional, and local forecasts. It involves conducting a historical review of the airport activity and identifying its percentage, or share, of a larger regional, state, or national aviation market. The historical market share is then used to project the future market share based on forecasts developed for the larger geographical area. This type of forecast is useful when the activity has a constant share of a larger market.

- **Smoothing**

Smoothing is a statistical technique used to make predictions based on applying recent trends and conditions to historical data. It is most effective for generating short-term forecasts.

4.6.1 Forecast Methodology and Approach Used

Preparing a forecast of aviation demand can be complex because each type of aviation activity is typically influenced by different local and national trends. For airports like EVW that support a wide variety of aviation needs, it is often best to divide the forecast into separate elements in order to use the forecasting method that will best reflect the specific factors expected to affect each element of the forecast. The assumptions and methodologies used to develop each element of the forecast are discussed in the relevant section.

4.6.2 Sources of Data

The following sources of operations and aircraft data were used in developing the forecast for this airport master plan.

- **Terminal Area Forecast**

As previously discussed in Section 4.3.2, the TAF is the FAA's official forecast of aviation activity. It is used as a source for historical data and is used by the FAA to evaluate the reasonableness of the airport master plan forecasts.

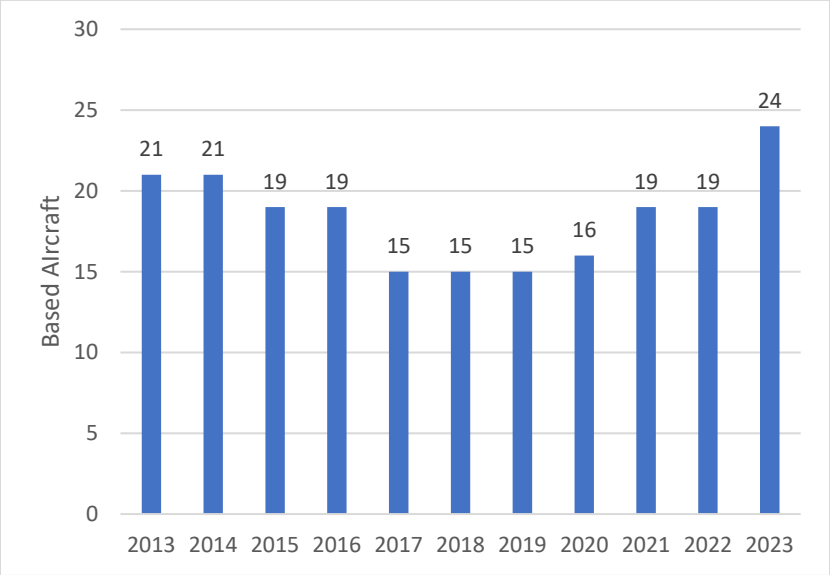
- Traffic Flow Management System Counts

The FAA's Traffic Flow Management System Counts (TFMSC) database includes data generated when pilots file flight plans as well as other flights detected, usually via RADAR, within the National Airspace System (NAS). This database includes the specific types and models of aircraft that operate under instrument flight rules (IFR) and are therefore required to file a flight plan. In general, this includes all air taxi operations along with the majority of GA operations conducted by jet aircraft as well as most medium and large propeller aircraft. However, it generally only captures a small portion of GA activity conducted by small piston aircraft because they typically operate under visual flight rules (VFR) and are therefore not required to file a flight plan. Despite this limitation, TFMSC data is helpful in identifying general trends in airport activity and provides a good estimation of the more demanding aircraft types using the airport. Additionally, larger aircraft are more likely to fly under a flight plan and are often required to by their operators. This is important because generally, it is the larger and faster aircraft types that determine the airport's surface and safety requirements.

4.7 Based Aircraft

A based aircraft is one that is operational and airworthy, located at the airport for the majority of the year (typically more than six months), and generally has an agreement with the airport or hangar owner for storage. The number of aircraft based at EVW from 2013 to 2022, as reported by the TAF, and 2023 data that provided and validated by the sponsor through basedaircraft.com is presented in **Figure 4-3**.

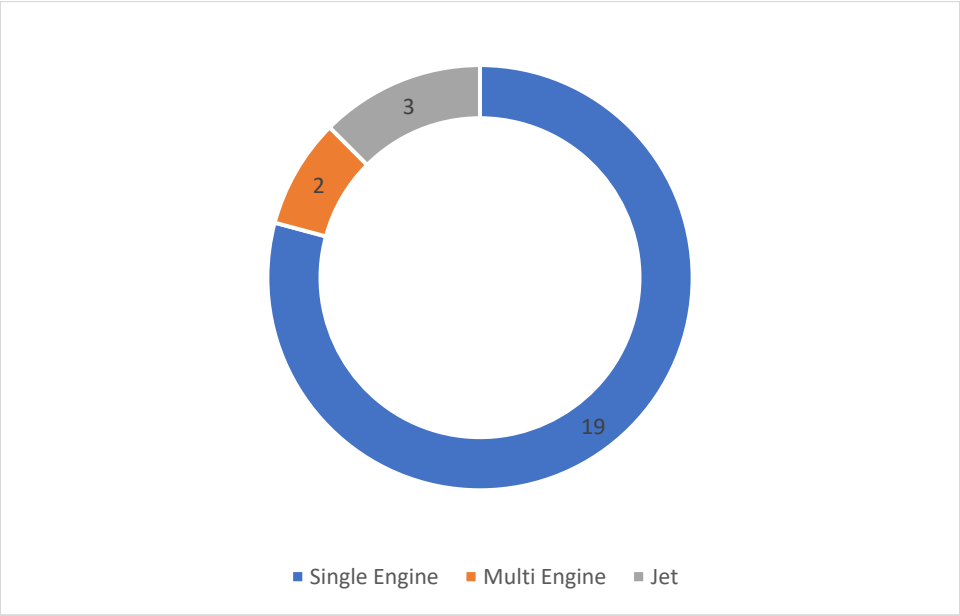
Figure 4-3 Based Aircraft 2013 to 2022



Source: FAA TAF, basedaircfaft.com

According to basedaircraft.com, the 24 based aircraft consists of 19 single engine aircraft, two multi engine aircraft, and three jet aircraft. This information is used as the baseline for the forecast and depicted in **Figure 4-4**.

Figure 4-4 Based Aircraft Inventory, 2023



Source: basedaircraft.com

4.7.1 Based Aircraft Forecast

Different methods were evaluated to determine the most suitable forecast for based aircraft. These included a regression analysis and several trend analyses using historical data. The method selected for the based aircraft forecast was the 10-year historical trend for PCI which applies a reasonable compound annual growth rate (CAGR) of 1.43% for based aircraft. As shown in **Table 4-6**, this forecast shows based aircraft increasing from 24 in 2023 to 32 by 2043.

This serves as the baseline forecast for based aircraft. However, through meetings with airport management and stakeholders, it was determined that demand for hangar storage has surged. If there were hangars available, upwards of 30 aircraft owners would potentially base their aircraft at EVW today. The building of new hangars is based on investors obtaining a return on their investment with rates that are attractive to the market. Thus, actual hangar construction and associated basing of new aircraft is complex and sometimes slow to materialize. That said, today there are two hangars planed for construction, and demand in the region illustrates the necessity for this master plan to plan for growth above the baseline forecast. It is anticipated that within the planning period, there is potential for EVW to accommodate approximately 60 based aircraft.

Overall, the forecast based on PCI growth serves as the baseline forecast for based aircraft growth at EVW. However, the facility requirements and alternatives for EVW considers how best to accommodate the ultimate potential of additional demand through the planning period to ensure the airport is ready if additional demand materializes.

Table 4-6 Based Aircraft Forecast

Year	Master Plan Forecast	TAF
2023	24	19
2028	26	19
2033	28	19
2038	30	19

Year	Master Plan Forecast	TAF
2043	32	19
CAGR	1.43%	0.0%

Source: Ardurra

4.7.2 Based Aircraft Forecast by Aircraft Type

The initial fleet forecast was determined by applying the current percentages for each type of aircraft currently based at the airport to the forecast for based aircraft. However, there is a site recently leased for a hangar that will house a jet and another lease is anticipated to house a jet. Therefore, this forecast assumes a slightly higher growth rate for jets and a slightly lower growth rate for single engine based aircraft growth which is also supported by the current national aviation trends. **Table 4-7** represents the baseline forecast for based aircraft by fleet mix.

Table 4-7 Based Aircraft Forecast by Aircraft Type

Year	Single Engine	Multi Engine	Jet	Total
2023	19	2	3	24
2028	19	2	5	26
2033	21	2	5	28
2038	21	3	6	30
2043	23	3	6	32

Source: Ardurra

4.8 Aircraft Operations Forecast

Different forecast methods were evaluated to determine the most suitable forecast for annual operations, including regression analysis, several trend analyses using historical data, and an operations per based aircraft (OPBA) assumption. The method selected for the operations forecast is the operations per based aircraft (OPBA) method. This method is outlined in FAA Order 5090.5, *Formulation of the NPIAS*. The ten-year historic median OPBA was calculated to be 291 (excluding military operations).

4.8.1 Aircraft Operations Forecast

The FAA TAF estimates a total of 5,385 operations (excluding military operations) for 2023 and is used as the baseline for the forecast. As shown in **Table 4-8,** the OPBA forecast of operations results in a CAGR of 2.76%. This is an increase from an estimated 5,385 operations in 2023 to 9,278 operations by 2043 (excluding military operations). Although this growth rate was derived through different methods, it is consistent with the previous master plan's forecasted growth rate of 2.7% CAGR.

Table 4-8 Aircraft Operations Forecast

Year	OPBA Forecast	TAF Excluding Military
2023	5,385	5,385
2028	7,498	5,255
2033	8,049	5,255
2038	8,642	5,255
2043	9,278	5,255
CAGR	2.76%	-0.12%

Source: Ardurra

4.8.2 Forecast Breakdown by Operation Type

According to the TAF, and validated through the TFMSC data, approximately 2% of non-military operations were air taxi operations, 78% itinerant GA, and 20% local GA. Because the Department of Defense provides limited details regarding future activity levels the TAF is used to project military operations. The forecast by operation type is presented in **Table 4-9**.

Table 4-9 Forecast Operations by Type

Year	Military	Air Taxi	Itinerant GA	Local GA	Total
2023	120	108	4,200	1,077	5,505
2028	120	150	5,848	1,500	7,618
2033	120	161	6,279	1,610	8,169
2038	120	173	6,741	1,728	8,762
2043	120	186	7,236	1,856	9,398

Source: Ardurra

4.9 Critical Aircraft

A key element of the forecast is the identification of the critical aircraft. The critical aircraft is the most demanding aircraft in terms of speed and size, that regularly use the airport. Regular use is defined as a minimum of 500 annual operations; excluding touch-and-go operations. The critical aircraft is often referred to as the design aircraft because it is used to help determine the design standards for many areas of the airport.

4.9.1 FAA Coding System

The FAA has developed a coding system that allows airport planners and engineers to identify airport design criteria based on the operational and physical characteristics of the types of aircraft that typically operate at the airport; therefore, the design criteria for a facility is appropriate for the types of operations an airport receives. The two primary design code include the aircraft approach category (AAC), and airplane design group (ADG). The AAC is designated by a letter (A through E) and associated with the approach speed of the critical aircraft. The ADG is designated by a Roman numeral (I through VI) and represents the dimensional characteristics of tail height and wingspan of the critical aircraft. Chapter 5 will go into the coding system and design standards in more detail. However, this concept is important for understanding the critical aircraft.

Table 4-10 Aircraft Approach Category

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

Table 4-11 Airplane Design Group

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

4.9.2 Forecast Breakdown

To determine the most demanding type of aircraft or group of aircraft with similar characteristics that regularly use the airport, operations were broken out by AAC and ADG. The percentages were derived from a comparison of the TAF and TFMSC and then applied to the operations forecast. This is expected to remain relatively consistent throughout the planning period, however, it is expected that EVW continue to see increased jet traffic based on its proximity to Utah and the airport constraints occurring there. **Table 4-12** provides a breakdown of the forecast by fleet mix.

Table 4-12 Forecast by Fleet Mix

AAC & ADG	Percent of Total	Baseline	Forecast Years			
		2023	2028	2033	2038	2043
A-I	49.0%	2,692	3,690	3,960	4,253	4,566
A-II	9.0%	503	700	752	807	867
B-I	11.0%	592	825	885	951	1,021
B-II	28.0%	1,510	2,102	2,257	2,423	2,602
C-I	0.4%	20	28	30	32	34
C-II	1.1%	60	84	90	96	103
C-III	0.9%	50	70	75	80	86

Note: The breakdown of information is provided for generalized data analysis and planning purposes. Due to rounding the totals may not precisely align with the forecast of operations.

Source: Ardurra, FAA TFMSC, FAA TAF

4.9.3 Identification of Critical Aircraft

The 2012 Airport Master Plan identified the critical aircraft to be a C-II and the future critical aircraft to be a C-III. This was based on the fleet of aircraft used by the oil and gas companies, and the need to support larger aircraft as these industries grew. In 2017, the FAA published AC 150/5000-17, *Critical Aircraft and Regular Use Determination,* which provides specific guidance on the definition of regular use for determining the critical aircraft.

The AC recognizes there is not always a single aircraft with more than 500 operations and allows a method of grouping aircraft with similar design characteristics to determine the design standards. Following this guidance, the existing and future critical aircraft are determined to be B-II which is a change from the previous master plan.

For EVW there is not a single B-II aircraft with at least 500 operations. Therefore, the Cessna Citation V is selected as the representative critical aircraft because it is one of the more frequent B-II aircraft operating at

the airport. The Cessna Citation V is depicted in **Figure 4-5** and its specifications are presented in **Table 4-13.**

Figure 4-5 Representative Existing and Future Critical Aircraft Cessna Citation

Source: West Palm Jet Charter

Table 4-13 Existing and Future Critical Aircraft Specifications

Characteristics	Specification
Aircraft Approach Category (AAC)	B
Airport Design Group (ADG)	II
Taxiway Design Group (TDG)	2A

Source: FAA Aircraft Characteristics

4.9.4 Ultimate Critical Aircraft

As outlined throughout this chapter, the historical socioeconomic information is not considered an accurate expectation of future trends, which are projected to grow and strengthen both organically and through migration. Additionally, with the known limitations of the historical and existing activity as reported in the TAF, coupled with the capacity limitations of neighboring airports, it is expected that the ultimate outlook of EVW is as a C-II airport.

This is supported by the fact that the neighboring Heber Valley Airport recently upgraded from a B-II to a C-II airport, with nearly 2,000 operations by category C or greater aircraft in 2023, far exceeding the 2023 master plan expectations for the entire planning period (through 2041). HCR has limited capacity for hangar storage and limited instrument approach visibility minimums. With EVW being only an hour's drive time from both Heber and Park City, it is expected that EVW will continue to supplement HCR, as well as SLC, for these types of operations. If, at a minimum, 20% of HCR C-II aircraft operations were to begin using EVW, an equivalent of one additional operation a day, this would immediately push EVW beyond the threshold of a C-II airport. Therefore, the ultimate airport is planned to be C-II, with the representative aircraft being the Bombardier Challenger 350, (CL35), which is the same critical aircraft identified at HCR currently.

As stated, it is expected the Airport will continue to see an increase in these types of aircraft. It is encouraged that operations be tracked and documented, and the forecast be updated with subsequent planning projects to accurately capture the growth, and plan accordingly for airport development projects.

Table 4-14 Ultimate Critical Aircraft Specifications

Characteristics	Specification
Aircraft Approach Category (AAC)	C
Airport Design Group (ADG)	II

Source: FAA Aircraft Characteristics
Note critical aircraft TDG will be based on the more demanding 2A category of the Citation V

4.10 TAF Comparison

Per FAA AC 150/5070-6B, *Airport Master Plans*, a general requirement for FAA approval is that a master plan forecast must be consistent with the TAF. For general aviation airports, the master plan forecast is considered to be consistent with the TAF if it is within 10% of the TAF for the five-year forecast and within 15% for the ten-year forecast. Additionally, for GA airports, the forecast is consistent if it does not affect the timing or scale on an airport project and does not affect the role of the airport as defined in the NPIAS.

As shown in **Table 4-15** both the operations and based aircraft are forecasted significantly beyond the TAF. As stated throughout this chapter, it is assumed the TAF forecast of zero growth is not an appropriate assumption for EVW. Additionally, as documented and verified through basedaircraft.com, the baseline for based aircraft exceeds what is published as existing in the TAF.

Table 4-15 TAF Comparison

Characteristics	Baseline	Forecast Years			
	2023	2028	2033	2038	2043
Aircraft Operations					
Master Plan Forecast	5,505	7,618	8,169	8,762	9,398
TAF	5,505	5,505	5,505	5,505	5,505
Difference	0%	38%	48%	59%	71%
Based Aircraft					
Master Plan Forecast	24	26	28	30	32
TAF	19	19	19	19	19
Difference	26%	37%	47%	58%	68%

Source: FAA TAF, basedaircraft.com, Ardurra