

## B. Aviation Activity Forecasts

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### Introduction

The development of accurate and defensible aviation activity forecasts is a key element in the Master Plan Study process. They are used for determining future airport requirements, analyzing alternative development plans, assessing the possible environmental effects of proposed plans, and determining the economic implications of future growth and development. While forecasting, by nature, is not an exact science, it does establish general estimates for future aviation activity levels and provides a defined rationale for necessary airport facility changes as demands increase.

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

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

The aviation activity forecasts presented in this chapter use fiscal year (FY) 2019 as the base year and are developed for the 20-year planning period (2019-2040) to forecast future aviation activity at Pueblo Memorial Airport (PUB or the Airport). Reporting intervals of every five years have been utilized. Each topic is evaluated using multiple forecasting methods and is compared to the 2019 Federal Aviation Administration (FAA) prepared Terminal Area Forecast (TAF), released in January 2020.

## Existing Conditions and Assumptions

The forecast data provided in this chapter was created using existing and historical data about the Airport and its surrounding region. Information regarding socioeconomic data, airline industry trends, and PUB-specific activity were all examined to provide context for the forecasting effort.

### Regional Statistics

Several regional underlying conditions were evaluated to develop a series of assumptions that serve as a foundation for the forecasts described in this chapter. They represent a variety of operational and socioeconomic considerations which may affect aviation activity at PUB to varying degrees.

One indicator is socioeconomic data; this data will, generally, correlate with aviation activity in its respective region. Population, employment, and income are indicators that typically influence aviation activity. Population figures indicate the general number of persons served by an airport, and therefore influences the potential customer base. Employment levels are a gauge of economic activity and vitality. Income statistics meanwhile reflect the degree to which an airport's customer base has sufficient disposable income to spend on aviation activities such as airline ticket purchases, aircraft ownership, and aircraft charter or rental.

The level and type of aviation activity occurring at an airport is dependent upon many factors, but it is generally reflective of the services available to aircraft operators, the businesses located on the airport or within the community the airport serves, and the general economic conditions prevalent within the surrounding area.

Pueblo is geographically located in the south-central portion of the state of Colorado. The Airport's service area primarily includes the Pueblo Metropolitan Statistical Area (MSA) as well as smaller outlying communities to the south and east.

### Regional Socioeconomic Conditions

According to the economic and demographic forecasting firm Woods & Poole, Inc., the Pueblo MSA has seen a steady rise in socioeconomic conditions since the year 2000. **TABLE B1** details historical socioeconomic conditions over the past 10 years, projected conditions 10 years in the future, and their associated Compound Annual Growth Rates (CAGR).

**TABLE B1 Socioeconomic Data for the Pueblo MSA, 2010-2029**

YEAR	TOTAL POPULATION	GROSS REGIONAL PRODUCT (2009 dollars)	PERSONAL INCOME PER CAPITA (2009 dollars)	TOTAL EMPLOYMENT (Jobs)
<b>HISTORICAL</b>				
2010	159,521	4,073,868,000	28,849	74,559
2011	159,785	4,079,261,000	29,540	75,398
2012	160,397	4,180,834,000	29,822	75,261
2013	160,803	4,145,405,000	29,655	75,284
2014	161,350	4,293,954,000	30,942	76,326
2015	163,117	4,361,252,000	32,267	77,493
2016	165,123	4,418,965,000	32,627	79,009
2017	166,097	4,606,446,000	33,634	80,857
2018	167,195	4,702,228,000	34,216	82,094
2019	168,299	4,776,528,000	34,702	83,032
<b>CAGR</b>	<b>0.5%</b>	<b>1.6%</b>	<b>1.9%</b>	<b>1.1%</b>
<b>PROJECTED</b>				
2020	169,405	4,842,782,000	35,159	83,845
2021	170,514	4,908,169,000	35,596	84,710
2022	171,626	4,973,033,000	36,044	85,579
2023	172,739	5,040,743,000	36,495	86,390
2024	173,852	5,107,629,000	36,929	87,210
2029	179,325	5,447,029,000	38,969	91,304
<b>CAGR</b>	<b>0.6%</b>	<b>1.3%</b>	<b>1.2%</b>	<b>1.0%</b>

SOURCE: Woods & Poole, Inc.

### Community/Airport Location and Potential

South-central Colorado, with its expanding population base, economic growth, numerous recreational facilities, and affordable living, provides a strong and definable market area for all forms of aviation activity. The surrounding communities benefit from the proximity of a high-quality aviation facility and, in turn, provide an economic base serving to attract additional airport users and industrial/business development. PUB’s existing instrument approach procedures provide a more efficient aviation environment by increasing the amount of time properly trained pilots may operate during Instrument Meteorological Conditions (IMC).

PUB is located less than 10 miles east of downtown Pueblo. With ample undeveloped property and development potential remaining high, PUB is poised to attract additional aviation and non-aviation development in the future. PUB's largest tenant, Canadian Aviation Education (CAE)-Doss operates the Initial Flight Training (IFT) program for the U.S. Air Force that provides introductory flight training for all U.S. Air Force aviation candidates. At its state-of-the-art facility in the southwest corner of PUB, CAE-Doss provides flight instruction to every U.S. Air Force aviation candidate, be they pilot, combat systems officer, or remotely piloted aircraft pilot. Since 2006 their IFT program has trained more than 17,250 students for the U.S. Air Force.

### Community Support

PUB benefits from the support of the City of Pueblo, as well as local industry and the citizens of south-central Colorado. The Airport is recognized as a vital asset that contributes to the stability and future of the region's economy. The overall position of the populace is one of continued growth and development, with special focus on the incentive of a commercial service airport continuing to attract additional economic and industrial development to the area.

### Airfares

PUB has realized a net reduction in the cost of airfares in recent years. According to the DOT's Bureau of Transportation Statistics, the average airfares at PUB have decreased from \$678.93 in the third quarter of 2016 (adjusted for inflation) to \$420.20 in the third quarter of 2019, a total of 61.57 percent.

### Airline Seats

The supply of airline seats has also seen a considerable increase in recent years. According to the DOT's Bureau of Transportation Statistics, in the past five years (from 2014-2019) PUB experienced an increase from 40,854 air carrier seats to 98,014 seats. This is a total increase of 139.9 percent in available airline seats with an average annual increase of 19.1 percent.

SkyWest is the only commercial airline currently serving PUB, however Allegiant Airlines also provided commercial service from October 2010 to April 2012. SkyWest currently offers two flights a day between PUB and DEN. With existing service subsidized through the Essential Air Service (EAS) program, it is unlikely that PUB will attract additional service through a legacy air carrier during the planning period.

### Potential Challenges

There are few negative factors that have potential to significantly impact future aviation activity at PUB. However, as part of the planning process it is important to consider broad factors that could have a negative or neutralizing impact on PUB. Pueblo's proximity and relative ease of vehicle access to the Denver metropolitan area and Denver International Airport (DEN) make it challenging to retain commercial service passengers and expand air service.

It is thought that many residents will continue to choose the two-hour/130-mile drive to DEN due to a number of factors. These factors include drive time, lower fares at DEN, and the sheer number of domestic and international destinations available from DEN. Other potential challenges could include the relatively slow growth in general aviation activity nationally for the past 20 years. New general aviation aircraft deliveries and active general aviation aircraft have declined during the past 20 years. According to the General Aviation Manufacturer Association (GAMA) Annual Report 2019, worldwide shipments of all GA aircraft declined by more than 15 percent since 2000. The FAA Aerospace Forecasts 2020-2040 reports active GA aircraft in the United States declined by 2.4 percent during the past 20 years.

### Historical and Existing Airport Activity

Aviation activity forecasting commences by utilizing the present time as an initial starting point, supplemented with historical data obtained from various sources, and compared to trends and forecasts. Data from the past 10 years (2010 to 2019) is used for historical trends as it includes periods of economic expansion and contraction that help forecasts account for various economic conditions and gives a perspective on the effects of economic change on aviation activity. **TABLE B2** presents a tabulation of the historical operations data collected and reported at PUB.

**TABLE B2 Historical Aviation Activity, 2010-2019**

YEAR	OPERATIONS							BASED AIRCRAFT
	COMMERCIAL ENPLANEMENTS	COMMERCIAL	ITINERANT GA	LOCAL GA	ITINERANT MILITARY	LOCAL MILITARY	TOTAL	
2010	7,424	5,502	65,291	107,481	2,205	1,651	182,130	129
2011	<b>22,099</b>	5,871	70,514	80,013	2,666	2,380	161,444	119
2012	<b>13,461</b>	5,617	70,234	81,580	2,665	1,940	162,036	120
2013	6,482	5,334	63,782	75,252	2,753	1,603	148,724	111
2014	5,945	4,156	59,395	71,083	3,351	2,240	140,225	123
2015	5,684	3,793	61,329	90,244	3,633	5,771	164,770	128
2016	1,845	3,503	<b>60,949</b>	<b>72,117</b>	<b>11,304</b>	<b>18,110</b>	165,983	128
2017	3,564	4,943	<b>15,063</b>	<b>5,977</b>	<b>60,619</b>	<b>89,246</b>	175,848	132
2018	8,278	4,298	16,644	6,308	70,233	98,591	196,074	125
2019	11,571	4,157	15,547	5,748	75,702	116,270	<b>217,424</b>	<b>128</b>
CAGR	<b>5.1%</b>	<b>-3.1%</b>	<b>-14.7%</b>	<b>-27.8%</b>	<b>48.1%</b>	<b>60.4%</b>	<b>2.0%</b>	<b>-0.1%</b>

SOURCE: FAA TAF; Pueblo Airport.

**TABLE B2** displays several important considerations about PUB’s activities, which are displayed as the blue bold-faced numbers and warrant further explanation.

## Commercial Enplanements

There was a considerable increase in commercial enplanements in the years 2011 and 2012, which was due to the limited presence of Allegiant Airlines as a carrier at PUB. This anomaly causes some issues in forecasting future growth utilizing historical trends. Despite this spike in 2011 and 2012, the CAGR remains the same due to the same start and end value of 2010 and 2019.

## Operations

The TAF divides commercial service operations (an operation is defined as either a takeoff or a landing) into two categories: air carrier and air taxi/commuter. Air carrier operations are defined as activity by aircraft of more than 60 seats and air cargo aircraft with more than 18,000 pounds of payload capacity. Air taxi/commuter activity is defined as aircraft with 60 seats or fewer that transport regional passengers on scheduled commercial flights, non-scheduled or for-hire flights, and air cargo flights with 18,000 pounds or less payload. However, for purposes of this Master Plan, commercial aircraft operations have been categorized as air taxi and air carrier operations. The air taxi category includes all air cargo and non-airline operations that involve direct on-demand transactions rather than a regularly scheduled flight. Air carrier operations include all scheduled operations with a commercial component regardless of number of seats, such as operations through SkyWest Airlines CRJ 200, 50-seat aircraft. As shown in **TABLE B2**, commercial aircraft operations have remained relatively stable over the past 10 years with an overall marginal decrease.

Between the years 2016 to 2017, a significant shift occurs in the number of recorded general aviation (GA) and military aircraft operations. CAE-Doss operations were initially recorded by the Airport Traffic Control Tower (ATCT) as GA operations. However, beginning in 2017, the ATCT began to report CAE-Doss operations as military operations. This caused a significant drop in both the recorded itinerant and local GA operations, while the recorded itinerant and local military operations increased. GA operations encompass pleasure flying, flight training, business and corporate activity as well as those operations conducted as unscheduled air taxi operations that are not associated with commercial passenger service.

Aircraft operations are also categorized as local or itinerant operations. The *FAA Advisory Circular (AC) 5070-6B* defines a local operation as any operation performed by an aircraft operating in the local traffic pattern or within sight of the tower, aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the Airport. Itinerant operations are all other aircraft operations.

**Existing Operations by Aircraft Type**

**TABLE B3** shows the total breakdown of aircraft operations at PUB and their percentage of the total number of operations. The breakdown by type of aircraft for GA and military activity was estimated using data from the FAA Traffic Flow Management System Counts (TFMSC) for PUB during FY 2019. TFMSC data is compiled from Instrument Flights Rules (IFR) filed flight plans to or from an airport and/or when flights are detected by the National Airspace System usually via radar. However, TFMSC data has its limitations. First, it excludes Visual Flight Rules (VFR) operations and may exclude certain flights that do not enter the en route airspace and other low-altitude flights due to limited radar coverage and incomplete messaging. Because of this, it favors larger and/or more sophisticated aircraft operations and undercounts smaller, less sophisticated aircraft operations. Additionally, of the approximately 35,000 location identifiers reported over time, only a few thousand are associated with airports; the remaining are waypoints or references not associated with any airport. Therefore, TFMSC data is not a reliable source of *total* aircraft operations. The data can be used to glean a percentage of aircraft types using an airport. For this Master Plan, a representative from the Fixed Base Operator (FBO) reviewed and confirmed the estimates.

**TABLE B3 Existing Operations by Aircraft Type, 2019**

AIRCRAFT TYPE	OPERATIONS	PERCENTAGE
Commercial Service	4,157 <sup>1</sup>	1.9%
<i>Air Taxi</i>	2,291 <sup>2</sup>	55.1%
<i>Air Carrier</i>	1,866 <sup>2</sup>	44.9%
<i>Regional Jet</i>	1,830 <sup>2</sup>	98.1%
<i>Narrow body Jet</i>	36 <sup>2</sup>	1.9%
General Aviation	21,295 <sup>1</sup>	9.8%
<i>Single Engine</i>	16,945 <sup>3</sup>	79.6%
<i>Multi Engine</i>	1,500 <sup>3</sup>	7.0%
<i>Jet</i>	2,350 <sup>3</sup>	11.0%
<i>Helicopter</i>	500 <sup>3</sup>	2.4%
Military	191,972 <sup>1</sup>	88.3%
<i>Single Engine (CAE-Doss)</i>	191,339 <sup>4</sup>	99.7%
<i>Standard Military</i>	633 <sup>4</sup>	0.3%
<b>Total</b>	<b>217,424</b>	<b>-</b>

SOURCE: <sup>1</sup>FAA TAF.

<sup>2</sup>Department of Transportation (DOT) T-100 data.

<sup>3</sup>Mead & Hunt estimates using FAA TFMSC.

<sup>4</sup>FAA TFMSC.



### Based Aircraft

The 2019 TAF data indicated total based aircraft is 128. Officially reported counts from PUB, however, indicate that the true number for the year of 2019 was only 114. However, this number included aircraft owned by CAE-Doss. In 2020, the FAA indicated that CAE-Doss owned aircraft should not be included as these aircraft are technically not based on airport property but on Doss owned property and the aircraft access the airport through the fence. The most recent based aircraft count validated by the FAA and reported to the National Based Aircraft Inventory is 60 and thereby considered the most accurate.

**TABLE B4** shows a detailed breakdown of PUB’s historical and existing based aircraft.

**TABLE B4 Summary of Based Aircraft, 2010-2019**

YEAR	SINGLE ENGINE	MULTI ENGINE	JET	HELICOPTER	OTHER	TOTAL
2010 <sup>1</sup>	113	12	4	0	0	129
2011 <sup>1</sup>	101	11	7	0	0	119
2012 <sup>1</sup>	101	11	7	0	1	120
2013 <sup>1</sup>	96	7	7	0	1	111
2014 <sup>1</sup>	105	10	7	0	1	123
2015 <sup>1</sup>	110	9	8	1	0	128
2016 <sup>1</sup>	109	9	8	1	1	128
2017 <sup>1</sup>	117	6	6	2	1	132
2018 <sup>1</sup>	112	6	5	1	1	125
2019 <sup>2</sup>	51	4	4	1	---	60

SOURCE: <sup>1</sup>FAA TAF.

<sup>2</sup>National Based Aircraft Inventory validated by FAA,2020. Does not include CAE-Doss owned aircraft.

### Forecasts of Aviation Activity

The role and importance of PUB will continue to support a wide range of activities including commercial service, CAE-Doss training operations, and GA activity. While there is no guarantee that the Essential Air Service (EAS) program will continue through the planning period, the program has become very important to politicians in Congress who represent small communities who need access to the air transportation system. For this reason, it is assumed that EAS will continue through the planning period. The planning period forecasts aviation activity into the future, from baseline data collected in 2019 to the end of the period in 2040. It is expected that the Airport will see steady growth over the next 20 years, however near-term airport activities have been adversely affected and will likely continue to be adversely affected by the onset of COVID-19.



Forecast projections are developed to provide a range of low to high demand scenarios, each supported by qualitative and quantitative factors that reflect current socioeconomic and aviation activities and trends and provide realistic projections. The forecast scenarios generated for this Master Plan assume, for the most part, straight-line growth. While it is recognized that straight-line (linear) growth never occurs year after year for many years, average annual growth methodologies often serve to illustrate intermediate and long-range planning.

## Forecast Documentation Review and Data Sources

To provide context for the development of future activity levels, it is important to not only consider historical aviation activity data, but also existing trends and projections made by other independent organizations. Additionally, a documentation review was also conducted to ascertain and assess available forecast-related data pertinent to the PUB forecasts, including FAA guidance documents, published industry analysis and statistical studies, and other approved state, local, and Airport studies.

The following reports, studies, publications, and associated projections were referenced to provide support and guidance in the development of the aviation activity forecasts presented in this chapter.

### 2019 State Aviation System Plan

PUB activity projections published in the Colorado Department of Transportation (CDOT) Division of Aeronautics *2019 Colorado Aviation System Plan (CASP)* were referenced for comparison. The forecasts in the CASP use similar methodologies to represent future activity growth. The base year data and projected years do not coincide with the years presented in this Master Plan, and as a result they were not included alongside the forecasting data. While not serving as a direct one to one comparison, the numbers are nevertheless useful in comparing forecasting methodologies within each of the categories.

### 2007 ALP Update Report

Prior to CAE-Doss operating at PUB, and prior to the design/construction of Runway 8L/26R (often referred to as the trainer runway), PUB completed an ALP Update Report that included a narrative and a chapter with aviation activity forecasts. The report forecast total annual operations to increase from 130,353 in 2006 to over 400,000 by 2026 primarily due to expected operations conducted by CAE-Doss aircraft. This report also forecast annual operations to reach 377,257 by calendar year 2019. Actual operations in 2019 were only 217,414, well short of this projection. According to interviews with CAE-Doss personnel, the reason that operations did not meet projections is due to airfield constraints and a lack of airfield capacity.

## FAA Published Data and Guidance

### FAA's TAF 2019-2045

The TAF is an FAA developed forecasting tool that is updated annually and used by the FAA to determine budget and staffing needs. Due to limited staff resources, the FAA cannot forecast in as great of detail at smaller regional airports as they can at large airports. However, the TAF provides a guideline for developing forecasts, and is utilized by FAA to compare scenario-driven forecasts with the forecasts developed by the FAA. Aviation activity forecasts are one of the three master plan components that require FAA approval. It is important to note that if a preferred forecast varies more than 10 percent from the TAF in the first five years or 15 percent within the first ten years, it must be supported by an acceptable forecast methodology and analysis.

### FAA's Aerospace Forecasts Fiscal Years 2020-2040

The FAA prepares annual updates of this document, which examines the current economic and aviation outlook, as well as macro level forecasts of aviation activity and the aircraft fleet throughout the U.S. The most recent document was published in February 2020 just as the COVID-19 pandemic was spreading from Asia to Europe, but had not yet appeared in the U.S. Only the earliest economic impacts of the virus were being felt on the world's economies and the global aviation industry. It was impossible to foreknow the full outcome of the pandemic and accurately reflect in the forecast. It is now known that the COVID-19 pandemic has had a detrimental impact on both the worldwide and U.S. economies, as well as the commercial aviation industry. Nevertheless, it is important to include the long-term aviation trends contained in the forecasts.

The 2020 FAA forecast called for U.S. carrier passenger growth over the next 20 years to average 2.0 percent annually. It was expected that U.S. carrier profitability would remain steady as solid demand fed by a stable economy offsets rising labor costs. System capacity as measured by available seat miles (ASMs) were forecast to grow in line with the increases in demand. In the long term, it was predicted that the aviation industry would be competitive and profitable, characterized by increasing demand for air travel and airfares growing more slowly than inflation, reflecting over the long term a growing U.S. and global economy.

The long-term outlook for GA was stable to optimistic, as growth of the high-end aircraft fleet offsetting continued retirement of the traditional low-end segment of the fleet. Overall, the forecast projected active GA aircraft to decrease slightly by 0.9 percent between 2020 and 2040 (rounding to an CAGR of 0 percent over the next 20 years). GA hours flown were expected to increase by 16 percent (an CAGR of 0.7 percent) during the same period. Both private and commercial pilot certificates were projected to decrease at an average annual rate of 0.6 and 0.1 percent, respectively.

### FAA Advisory Circular 150/5070-6B (Change 2), Airport Master Plans

This AC describes the methodology for preparing airport master plans, including the development of FAA compliant forecasts. For the forecasting component of master planning, it provides key guidance on preparing aviation activity forecasts and it identifies what elements should be forecasted.

### Forecasting Aviation Activity by Airport (Prepared for FAA by GRA, Inc.)

GRA, Inc. developed this document for FAA in 2001, which provides guidance for those preparing and reviewing airport activity forecasts. The FAA follows this guidance when developing the TAF.

## Industry Reports

### Aircraft Manufacturer Marketing Outlooks

Demand for aviation services is generally driven by changes in economic activity. The aviation industry declined with the economy during the 2008 recession and has been slowly recovering ever since. Aircraft manufacturers have increased production to supply commercial airline fleet renewal programs, and general aviation operators have sought more fuel efficient and technologically capable aircraft. Based on figures released by GAMA, recent worldwide shipments of GA aircraft have shown an overall increase. Shipments in 2019 totaled 2,658 aircraft, 8.9 percent more than 2018. Overall piston deliveries increased by 16.4 percent with single-engine deliveries up 16.7 percent and the much smaller multi-engine category up 15.1 percent. In the turbine categories, turbojet deliveries were up 15.1 percent. Turboprop deliveries were down 12.6 percent. Overall, forecasts show the long-term outlook for the aviation industry is one of growth.

## Enplanements

PUB enplanements have already begun to see a downturn because of the COVID-19 pandemic. Aviation industry expectations vary wildly on the time frame for recovery, both globally and domestically, but historical events of similar magnitude on the aviation industry (i.e. the terrorist actions of September 11, 2001 and the Great Recession of 2007-2008) typically indicate a two to three-year recovery for passenger enplanements, which would place a recovery in 2022 to re-realize the activity levels of 2019. This trend is portrayed in the forecasting data with reductions in 2020's activity levels by 50 percent from 2019, and 2021 at 25 percent. By the year 2022 a return to the 2019 levels are realized. Each of the enplanement forecast scenarios begin their compound annual growth rates beginning in 2022.

The enplanement forecast scenarios presented in **TABLE B5** And **FIGURE B1** include:

- **2019 TAF.** This projection generated by the FAA's TAF is presented for comparison purposes.
- **Scenario One.** This scenario projects enplanements to increase at a CAGR of 0.5 percent. This is equal to the 2019-2029 projected annual population growth rate of the Pueblo Metropolitan Statistical Area (MSA) provided by Woods & Poole, Inc.
- **Scenario Two.** This scenario projects enplanements to increase at a CAGR of 1.2 percent which is equal to the projected trendline of PUB's historical enplanements with the 2011 and 2012 years of Allegiant Service not included. Without the approximate nine-month anomaly, a more consistent and realistic trend can be established.
- **Scenario Three.** This scenario represents the total market share of PUB's enplanements as they compare to the state of Colorado enplanements during the planning period. Scenario Three projects enplanements to increase at a CAGR of 1.8 percent.
- **Scenario Four.** This scenario is a trend line forecast that applies PUB's historical 10-year enplanements rate of growth (5.1 percent). Enplanements with this scenario increase at a CAGR rate of 4.3 percent.

Scenario Two is the selected scenario for passenger enplanements. Its measured growth rate represents a conservative approach for future enplanements while simultaneously coinciding with expectations within the TAF. Scenario Two is also consistent with the passenger demand analysis report prepared separately (**Appendix C**) which defined the enplanement capture area and determined that PUB only captures approximately nine percent of passengers within the catchment area. For reasons specified previously and expanded on in the passenger demand report in **Appendix C**, significant amounts of commercial passengers chose to drive to either DEN or Colorado Springs Airport (COS) rather than initiating their trip at PUB. It is highly likely that this passenger leakage to other airports will continue throughout the planning period.

**TABLE B5 Passenger Enplanement Forecast, 2019-2040**

YEAR	2019 TAF	SCENARIO 1 <sup>3</sup>	SCENARIO 2 <sup>4</sup>	SCENARIO 3 <sup>5</sup>	SCENARIO 4 <sup>6</sup>
2019 <sup>1</sup>	11,571	11,571	11,571	11,571	11,571
2020	11,698	5,790	5,790	5,790	5,790
2021	11,843	8,680	8,680	8,680	8,680
2022 <sup>2</sup>	11,988	11,571	11,571	11,571	11,571
2023	12,133	11,639	11,733	12,547	12,155
2024	12,278	11,709	11,899	12,821	12,769
2025	12,440	11,780	12,067	13,051	13,415
2030	13,259	12,137	12,942	14,151	17,165
2035	14,114	12,506	13,881	15,371	21,965
2040	14,989	12,885	14,888	16,868	28,106
<b>CAGR</b>	<b>1.2%</b>	<b>0.5%</b>	<b>1.2%</b>	<b>1.8%</b>	<b>4.3%</b>

**SOURCES:** FAA TAF; Woods & Poole, Inc.; Pueblo Airport; Mead & Hunt.

**NOTES:** <sup>1</sup> Base forecasting year, sourced from the FAA TAF.

<sup>2</sup> Predicted COVID recovery year.

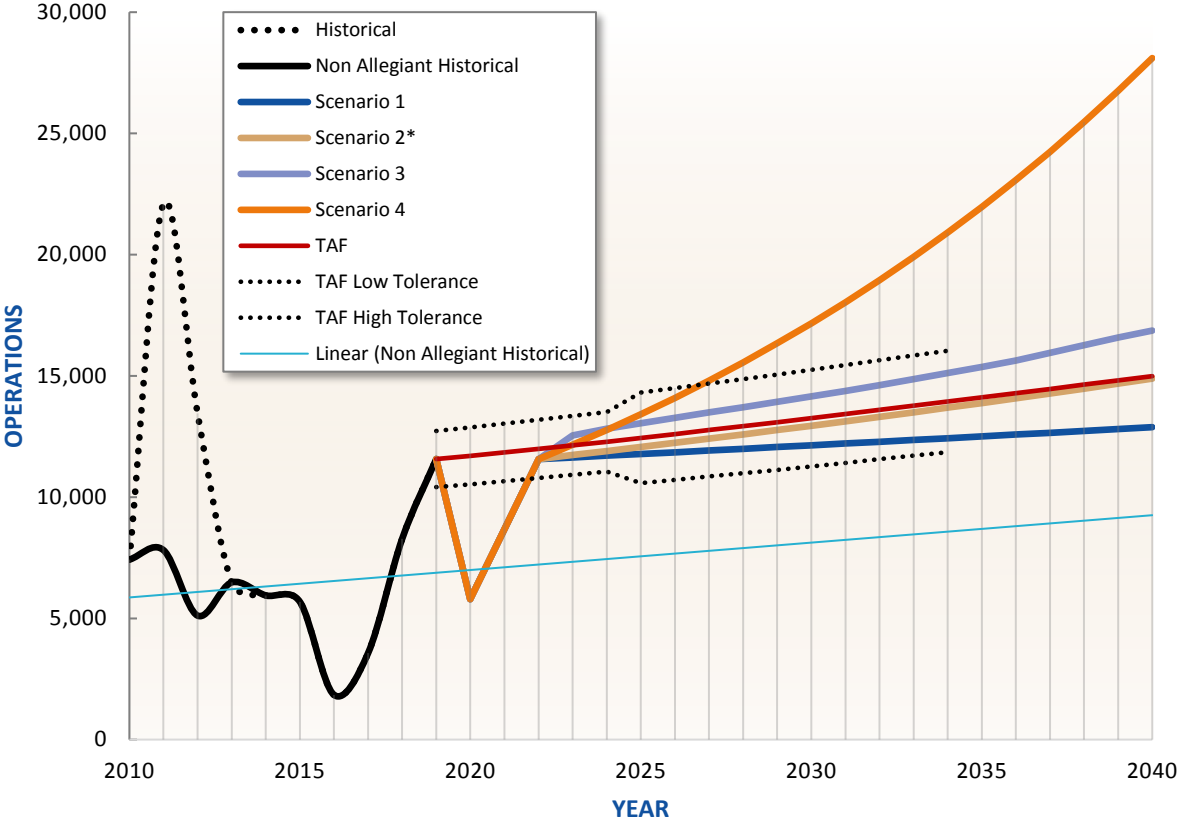
<sup>3</sup> Woods & Poole 2019-2029 predicted MSA growth.

<sup>4</sup> 2010-2019 historical trend in enplanements (excluding Allegiant Airlines); Preferred forecast.

<sup>5</sup> 2019-2040 Market share of PUB to CO enplanements.

<sup>6</sup> 2010-2019 total enplanement growth.

**FIGURE B1 Passenger Enplanement Forecast, 2019-2040**



**SOURCE:** Mead & Hunt.  
**NOTES:** \* Preferred forecast.

Enplanement forecasts contained in the CASP utilized the growth rate by service type as the preferred forecast specific to PUB. A base CAGR of 1.6 percent was applied to represent the expected enplanement growth for regional airports. The baseline number was taken from the FAA Air Carrier Activity Information System (ACAIS), which is ATCT reported data. The ACAIS was used over the TAF for all airports where ACAIS data was available, as was the case for PUB. PUB’s enplanement numbers forecasted by the CASP were:

- **2018 Baseline:** 10,450.
- **2023 Projection:** 11,310.
- **2028 Projection:** 12,250.
- **2033 Projection:** 13,260.
- **2038 Projection:** 14,360.
- **CAGR:** 1.6 percent.

## Aircraft Operations

Operations at PUB represent a varied mix of aircraft activity, with commercial service, GA, and military operations being the largest contributors. Each category of operations entails its own assumptions and forecasting methodologies.

### Commercial Service

As previously stated in **Historical Aviation Activity**, SkyWest is the only commercial service operator at PUB and is likely to remain so throughout the planning period. SkyWest currently operates two flights per day between PUB and DEN. These numbers will change due to the COVID-19 pandemic, as the airline will be allowed to reduce its total number of operations by 50 percent. This directly translates to a reduction of one SkyWest flight per day.

The establishment of projected passenger enplanements is required to properly project commercial service operations, as there is usually a direct relationship between passenger enplanements and commercial service operations. If enplanements increase, operations will generally increase to accommodate the demand. However, the relationship can vary significantly, in that enplanements can increase without increasing operations, or even increase following a decrease in operations. Often, this is a result of airlines using larger aircraft with greater seating capacity, or more efficient scheduling with increased passenger Boarding Load Factor (BLF). The BLF is a ratio of the number of actual annual enplanements compared to the total number of annual departure seats (for example, if an aircraft has fifty seats and 25 passengers board, the BLF is 50 percent).

As presented in **TABLE B6**, it is believed that commercial service operations will remain at their 2019 levels even after the expected recovery from the COVID-19 pandemic. This is due to the average BLF at PUB having a maximum of 23.6 percent in 2019. This indicates that less than a quarter of all available departure seats were occupied by passengers in 2019. Using the preferred Scenario Two enplanements forecast, the BLF is projected to reach only 28.3 percent by 2035. Because of age and higher operating expenses, it is expected that the 50-seat regional jets (like the CRJ 200 currently providing service to PUB), will be phased out of airline fleets by the end of the planning period. At PUB, it is anticipated they will be replaced by 76-seat Embraer Regional Jet (ERJ) E-175 aircraft as the currently air carrier is adding this aircraft to its fleet mix and retiring its smaller regional jets. This decreases the BLF to 20.5 percent by 2040, which indicates that future enplanements will be easily accommodated by the current number of commercial service operations.



**TABLE B6 Commercial Service Operations Forecast, 2019-2040**

YEAR	ENPLANEMENTS	DEPARTURE SEATS	BLF	AIR CARRIER OPERATIONS	AIR TAXI OPERATIONS	TOTAL OPERATIONS
2019 <sup>1</sup>	11,571	49,107	23.6%	1,866	2,291	4,157
2025	12,067	49,107	24.6%	1,866	2,291	4,157
2030	12,942	49,107	26.4%	1,866	2,291	4,157
2035	13,881	49,107	28.3%	1,866	2,291	4,157
2040	14,888	72,605	20.5%	1,866	2,291	4,157
CAGR	1.2%	1.9%	-0.7%	-	-	-

SOURCE: Pueblo Airport; Mead & Hunt.

NOTES: <sup>1</sup> Base forecasting year, sourced from the FAA TAF and US DOT T-100 data.

The methodology used by the CASP supports the projections in **TABLE B6**. It predicted that commercial airports with “very small regional carriers utilizing aircraft with lower seating capacities” would not see any significant change in their operations over the 20-year planning period; this included PUB. While statewide commercial enplanements were projected to grow by a 2.0 percent CAGR by 2038, smaller commercial service airports such as PUB would see very little change in commercial activity.

### General Aviation Operations

GA activity at PUB have seen a sporadic change in recent years. Also as discussed in **Historical Aviation Activity**, GA operations prior to 2016 were significantly higher when CAE-Doss operations were categorized as GA activity. This created a discrepancy in the analysis of historical activity, as the significant drop recorded from 2010 to 2019 does not provide an accurate understanding of the actual activity. Providing the best possible comparison for predicting future GA operations requires an examination of only the most recent three years of historical data (2017-2019).

The impact of the COVID-19 pandemic on GA operations is expected to be less severe than its impact on enplanements. The forecasting model still predicts 2020 will see a 50 percent reduction from 2019 levels, but it is expected that the pre-pandemic numbers will return by 2021. This impact is assumed based upon the willingness of GA owners to use their private or low-passenger aircraft with minimal fear of infection compared to larger commercial service aircraft with greater numbers of passengers.

### Itinerant GA Operations

The forecasts of itinerant GA Operations shown in **TABLE B7** and **FIGURE B2** include the following scenarios:

- **2019 TAF.** This projection is presented for comparison purposes.
- **Scenario One.** This scenario applies the CAGR of 0.6 percent utilized by Woods & Poole, Inc. to project the Pueblo MSA population through 2040. Applying the rate to the adjusted itinerant GA operations starting in 2021 results in a CAGR of 0.6 percent through the forecast time period.
- **Scenario Two.** This scenario uses the three-year historical growth trend in PUB's itinerant GA operations from 2017-2019, which is 1.3 percent. The trend CAGR is then applied to the adjusted 2021 itinerant GA operations throughout the forecast time period resulting in a CAGR of 1.2 percent.
- **Scenario Three.** This scenario projects itinerant GA operations to increase at the same CAGR experienced at PUB during the last three years (i.e., 1.6 percent), but applies it to the adjusted 2021 operations and projects it throughout the forecast time period. The result is an overall CAGR of 1.4 percent.

Scenario Two is the preferred forecast for itinerant GA operations due to its moderate growth rate and consistency with the TAF.

**TABLE B7 Itinerant GA Operations Forecast, 2019-2040**

YEAR	2019 TAF	SCENARIO 1 <sup>3</sup>	SCENARIO 2 <sup>4</sup>	SCENARIO 3 <sup>5</sup>
2019 <sup>1</sup>	15,547	15,547	15,547	15,547
2020	15,629	7,770	7,770	7,770
2021 <sup>2</sup>	15,784	15,547	15,547	15,547
2022	15,941	15,650	15,751	15,795
2023	16,099	15,753	15,958	16,047
2024	16,259	15,857	16,168	16,302
2025	16,421	15,962	16,380	16,562
2030	17,256	16,496	17,484	17,925
2035	18,135	17,048	18,662	19,400
2040	19,055	17,619	19,920	20,996
<b>CAGR</b>	<b>1.0%</b>	<b>0.6%</b>	<b>1.2%</b>	<b>1.4%</b>

**SOURCES:** FAA TAF; Woods & Poole, Inc.; Pueblo Airport; Mead & Hunt.

**NOTES:** <sup>1</sup> Base forecasting year, sourced from the FAA TAF.

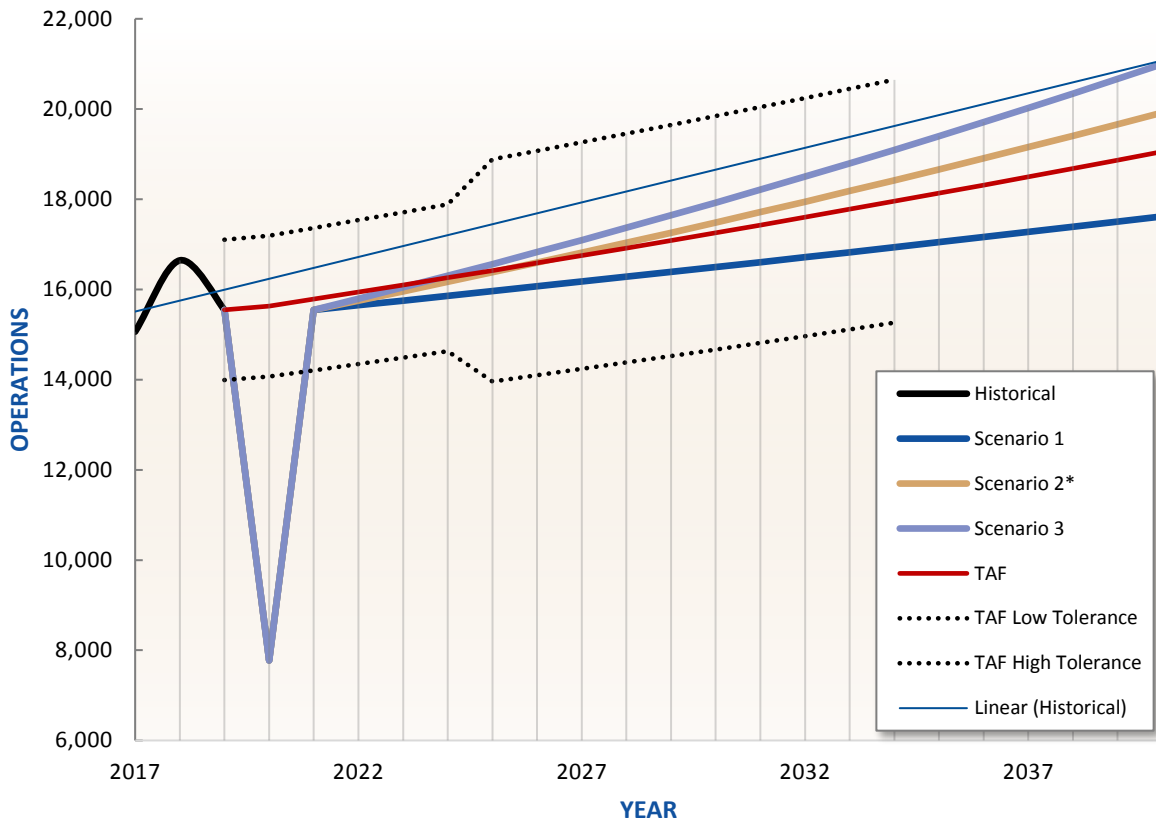
<sup>2</sup> Predicted COVID recovery year.

<sup>3</sup> Woods & Poole 2019-2029 predicted MSA growth.

<sup>4</sup> 2017-2019 historical trend in Itn GA growth; Preferred forecast.

<sup>5</sup> 2017-2019 historical Itn GA growth.

**FIGURE B2 Itinerant GA Operations Forecast, 2019-2040**



**SOURCES:** FAA TAF; Woods & Poole, Inc.; Pueblo Airport; Mead & Hunt.  
**NOTES:** \* Preferred forecast.

A comparison between the itinerant GA operations cannot be established between the CASP and the forecasts listed in **TABLE B7** and **FIGURE B2**. The forecasts presented in the CASP do not separate GA operations into categories, but instead projects only the total GA operations for each airport. Therefore, no direct comparison between the CASP and the forecast Itinerant GA operations can be made.

## Local GA Operations

Local GA operations are forecasted in **TABLE B8** and **FIGURE B3** and represent the scenarios below:

- **2019 TAF.** The TAF projections are presented for comparison purposes.
- **Scenario One.** This scenario once again uses the Woods & Poole, Inc. supplied Pueblo MSA population growth rate through 2040. The resulting CAGR for this forecast is 0.6 percent.
- **Scenario Two.** This scenario again uses market share of PUB GA operations verses the share of the State's; this equals 0.7 percent CAGR.
- **Scenario Three.** This scenario projects local GA operations to increase at a CAGR of 1.1 percent, which is based on the 2017-2019 growth rate of regional GA operations according to the TAF. The 'region' was defined as the states of AZ, CO, KS, NE, NM, OK, TX, UT, and WY; this scenario utilized the combined data of these states.
- **Scenario Four.** This scenario utilizes the negative growth rate forecasted in the *FAA Aerospace Forecasts Fiscal Years 2020-2040* for the expected nationwide single engine, piston-powered fleet. The three-year historical analysis of the nationwide single engine, piston-powered fleet corresponded well the local GA operations occurring at PUB. The scenario results in a CAGR of -0.9 percent.

Scenario One appears to be the most appropriate scenario for local GA operations. It represents a steady growth rate and coincides with the median projections of the TAF.

**TABLE B8 Local GA Operations Forecast, 2019-2040**

YEAR	2019 TAF	SCENARIO 1 <sup>3</sup>	SCENARIO 2 <sup>4</sup>	SCENARIO 3 <sup>5</sup>	SCENARIO 4 <sup>6</sup>
2019 <sup>1</sup>	5,748	5,748	5,748	5,748	5,748
2020	6,009	2,870	2,870	2,870	2,870
2021 <sup>2</sup>	6,039	5,748	5,748	5,748	5,748
2022	6,069	5,786	5,792	5,817	5,689
2023	6,099	5,824	5,836	5,886	5,631
2024	6,129	5,863	5,881	5,957	5,573
2025	6,160	5,901	5,926	6,028	5,516
2030	6,315	6,099	6,157	6,397	5,239
2035	6,473	6,303	6,397	6,788	4,975
2040	6,633	6,514	6,646	7,203	4,725
<b>CAGR</b>	<b>0.7%</b>	<b>0.6%</b>	<b>0.7%</b>	<b>1.1%</b>	<b>-0.9%</b>

SOURCES: FAA TAF; Woods & Poole, Inc.; Pueblo Airport; Mead & Hunt.

NOTES: <sup>1</sup> Base forecasting year, sourced from the FAA TAF.

<sup>2</sup> Predicted COVID recovery year.

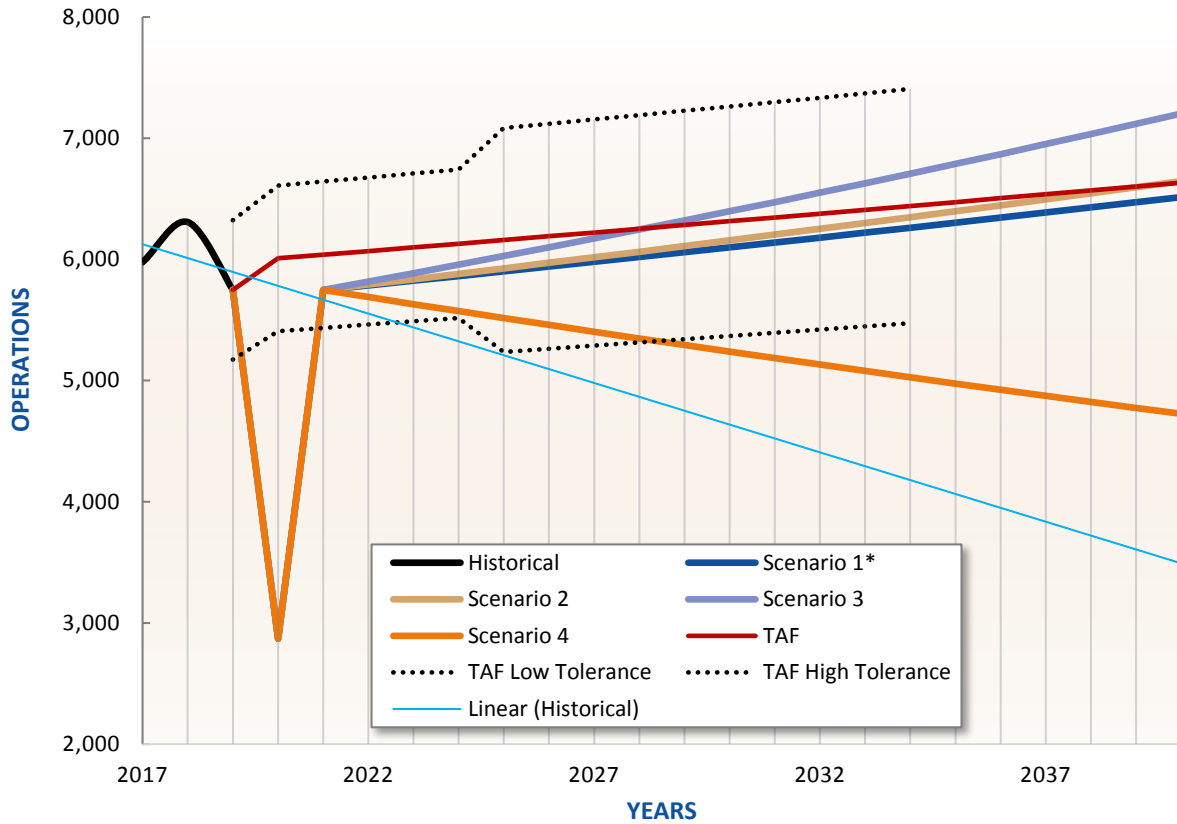
<sup>3</sup> Woods & Poole 2019-2029 predicted MSA growth; Preferred forecast.

<sup>4</sup> 2019-2040 Market share of PUB to CO operations.

<sup>5</sup> 2017-2019 Market regional growth rate.

<sup>6</sup> FAA Aerospace Forecasts Fiscal Years 2020-2040 growth rate.

**FIGURE B3 Local GA Operations Forecast, 2019-2040**



**SOURCE:** Mead & Hunt.  
**NOTES:** \* Preferred forecast.

As previously stated in **Itinerant GA Operations**, the CASP projects only total GA operations and therefore cannot be compared to the forecasts shown in **TABLE B8** and **FIGURE B3**.



## Military Operations

Military operations at PUB have historically represented a large section of its operations. No factors have been identified that would alter the number of non-CAE-Doss military (standard military) operations in the future. Standard military operations at PUB vary widely and range from small F-16 Fighting Falcon type jets to very large Lockheed C-5 Galaxy transport type aircraft.

CAE-Doss represents a separate share of military operations, and as a result have been provided their own projections for anticipated aircraft operations. These projections utilized an unconstrained demand as projected by CAE-Doss (**Appendix B**) that would represent CAE-Doss's total level of operations if they were able to operate at the peak efficiency outlined in their contract with the Department of Defense (DOD). Therefore, the numbers do not account for recent aviation trends such as the COVID-19 pandemic. A summary of the military operations forecasts is shown in **TABLE B9**.

**TABLE B9 Military Operations Forecast, 2019-2040**

YEAR	2019 TAF (ITN MIL)	2019 TAF (LOCAL MIL)	CAE-DOSS (ITN) <sup>4</sup>	CAE-DOSS (LOC) <sup>4</sup>	STANDARD MILITARY <sup>5</sup>	TOTAL <sup>6</sup>
2019 <sup>1</sup>	75,702	116,270	75,069	116,270	633	191,972
2020	75,702	116,270	132,981	204,245	633	337,859
2021 <sup>2</sup>	75,702	116,270	142,480	218,834	633	361,947
2025	75,702	116,270	155,145	238,285	633	394,063
2027 <sup>3</sup>	75,702	116,270	161,477	248,012	633	410,122
2030	75,702	116,270	161,477	248,012	633	410,122
2035	75,702	116,270	161,477	248,012	633	410,122
2040	75,702	116,270	161,477	248,012	633	410,122
CAGR	-	-	3.7%	3.7%	-	3.7%

SOURCE: FAA TAF, TFMSC; CAE-Doss; Pueblo Airport; Mead & Hunt.

NOTES: <sup>1</sup> Base forecasting year, sourced from the FAA TAF.

<sup>2</sup> Predicted COVID recovery year.

<sup>3</sup> CAE-Doss peak year of unconstrained growth.

<sup>4</sup> Data sourced from CAE-Doss projections.

<sup>5</sup> Data sourced from TFMSC.

<sup>6</sup> Total of CAE-Doss ITN, LOC, and Standard Military.

The CASP projections for military aircraft operations at PUB also predicted flatline growth. However, like GA operations, the CASP does not separate military operations between itinerant and local categories and cannot be used for comparison.

## Operations Forecast by Aircraft Type

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

**TABLE B10** depicts the approximate level of use by aircraft types that are projected to use PUB. This table reflects a growing percentage of turbine-powered multi-engine aircraft anticipated to operate at the Airport, and a decreasing percentage of both single and multi-engine piston-powered aircraft. This is a national trend in general aviation where smaller piston driven aircraft are being flown less due to several factors including the cost of owning and flying personal aircraft, and the use of turbine-powered aircraft for business purposes increasing as a percentage of total operations. As mentioned previously, there is no expected growth in standard military operations from the base year (2019). The projections for the CAE-Doss operations are expected to be a continuation of the existing piston-powered single engine Diamond DA22 aircraft.

Currently, the FAA ATCT at the Airport estimates that approximately 80 percent of all GA operations are conducted by single engine aircraft, while 7 percent are multi-engine, 11 percent are business jet operations and 2 percent are helicopter. At the end of the forecast period (2040), approximately 74 percent of all general aviation operations are forecast to be single engine, 9 percent multi-engine 5.14 percent business jet, and 4 percent helicopter.

**TABLE B10 Summary of Operations Forecast by Aircraft Type, 2019-2040**

AIRCRAFT TYPE	2019	2025 <sup>2</sup>	2030 <sup>2</sup>	2035 <sup>2</sup>	2040 <sup>2</sup>
Commercial Service	4,157 <sup>1</sup>	4,157	4,157	4,157	4,157
<i>Air Taxi</i>	2,291 <sup>2</sup>	2,291	2,291	2,291	2,291
<i>Air Carrier</i>	1,866 <sup>2</sup>	1,866	1,866	1,866	1,866
<i>Regional Jet</i>	1,830 <sup>2</sup>	1,830	1,830	1,830	1,830
<i>Narrow body Jet</i>	36 <sup>2</sup>	36	36	36	36
General Aviation	21,295 <sup>1</sup>	22,281	23,583	24,965	26,434
<i>Single Engine</i>	16,945 <sup>3</sup>	17,580	18,277	18,849	19,561
<i>Multi Engine</i>	1,500 <sup>3</sup>	1,604	1,839	2,122	2,247
<i>Jet</i>	2,350 <sup>3</sup>	2,562	2,830	3,246	3,701
<i>Helicopter</i>	500 <sup>3</sup>	535	637	749	925
Military	191,972 <sup>1</sup>	394,063	410,122	410,122	410,122
<i>Single Engine (CAE-Doss)</i>	191,339 <sup>4</sup>	393,430	409,489	409,489	409,489
<i>Standard Military</i>	633 <sup>4</sup>	633	633	633	633
<b>Total</b>	<b>217,424</b>	<b>420,501</b>	<b>437,862</b>	<b>439,244</b>	<b>440,713</b>

SOURCE: <sup>1</sup> FAA TAF.

<sup>2</sup> Department of Transportation (DOT) T-100 data.

<sup>3</sup> Mead & Hunt estimate using FAA TFMSC.

<sup>4</sup> FAA TMSC.

<sup>5</sup> Mead & Hunt.

### Peak Period Forecast

An additional element in assessing airport use and determining various capacity and demand considerations is to ascertain peak period activities. Data from the FY 2019 TFMSC was used to reach the following assumptions for PUB:

- **October is the peak month for yearly operations**
- **9.6 percent of annual operations occur in the peak month**
- **A 31-day peak month**
- **Existing peak hour operations are 11 percent of the average day of the peak month.**

The peak period operational activities are illustrated in **TABLE B11**.

**TABLE B11 Peak Period Aircraft Operations, 2019-2040**

YEAR	ANNUAL	PEAK MONTH	AVERAGE DAY OF PEAK MONTH	PEAK HOUR/AVERAGE DAY RATIO	AVERAGE PEAK HOUR
2019	217,424 <sup>1</sup>	20,873	673	11%	74
2025	420,501 <sup>2</sup>	40,368	1,302	11%	143
2030	437,862 <sup>2</sup>	42,035	1,356	11%	149
2035	439,244 <sup>2</sup>	42,167	1,360	11%	150
2040	440,713 <sup>2</sup>	42,308	1,365	11%	150

SOURCE: <sup>1</sup> FAA TAF.  
<sup>2</sup> Mead & Hunt forecast.

### Based Aircraft

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

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

Generally, there is a relationship between aviation activity and based aircraft, stated in terms of operations per based aircraft (OPBA). Sometimes, a trend can be established from historical information of operations and based aircraft. The national trend has been changing with more aircraft being used for business purposes and less for pleasure flying. This impacts the OPBA in that business aircraft are usually flown more often than recreational or pleasure aircraft.

The COVID-19 pandemic is predicted to have minimal impact on based aircraft. Aircraft currently based at an airport are likely to remain throughout the duration of the pandemic, and it is expected that the number of operations per based aircraft will increase at PUB as more based aircraft are used for business purposes.

**TABLE B12** and **FIGURE B4** list the following based aircraft scenarios:

- **2019 TAF.** The FAA’s TAF are presented for comparison purposes.
- **Scenario One.** This scenario applies the CAGR of 0.6 percent used by Woods & Poole, Inc. to project the Pueblo MSA population through 2030.
- **Scenario Two.** This scenario shows the gradual increasing market share ratio of PUB’s based aircraft to the entire State of Colorado based aircraft fleet. The base year 2019 market share represents the current number of PUB based aircraft compared to the State, which is a ratio of approximately 1.26 percent. The forecast gradually increases the ratio to approximately 1.48 percent in anticipation of a return to the 10-year historical average market share ratio. This reflects favorable leasing rates and storage options available to aircraft owners at PUB and results in an overall CAGR of 1.6 percent.
- **Scenario Three.** This scenario forecasts based aircraft by applying the existing 2019 OPBA ratio of 354.9 to the selected total GA operations forecasts at PUB. This results in a CAGR of 1.0 percent.

Scenario Two represents the preferred based aircraft forecast. Due to the discrepancy between the starting numbers of the TAF and the base forecasting year, each of the scenarios will not coincide with the TAF’s limits. Despite this, the second scenario represents the closest capture of the TAF’s values.

**TABLE B12 Based Aircraft Forecast, 2019-2040**

YEAR	2019 TAF	SCENARIO 1 <sup>4</sup>	SCENARIO 2 <sup>5</sup>	SCENARIO 3 <sup>6</sup>
2019 <sup>1</sup>	128 <sup>2</sup>	60 <sup>3</sup>	60	60
2020	131	60	61	60
2021	136	61	62	60
2022	138	61	63	61
2023	143	61	64	61
2024	146	62	65	62
2025	150	62	66	63
2030	170	64	72	66
2035	190	66	78	70
2040	211	68	84	74
<b>CAGR</b>	<b>2.4%</b>	<b>0.6%</b>	<b>1.6%</b>	<b>1.0%</b>

SOURCES: FAA TAF; Woods & Poole, Inc.; Pueblo Airport; Mead & Hunt.

NOTES: <sup>1</sup> Base forecasting year.

<sup>2</sup> Sourced from the FAA TAF.

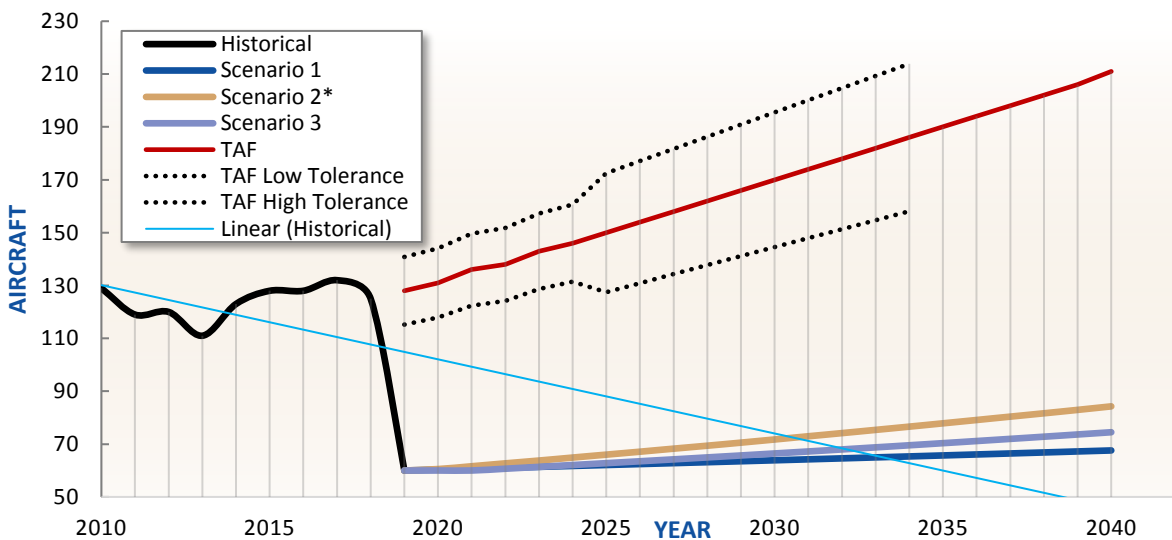
<sup>3</sup> Sourced from FAA National Based Aircraft Inventory.

<sup>4</sup> Woods & Poole 2019-2029 predicted MSA growth.

<sup>5</sup> 2019 Market share of PUB to CO based aircraft; Preferred forecast.

<sup>6</sup> 2019 OPBA ratio applied to total GA operations.

**FIGURE B4 Based Aircraft Forecast, 2019-2040**



SOURCE: Mead & Hunt.

NOTES: \* Preferred forecast.

CASP’s 2018 baseline used the National Based Aircraft Registry for non-primary commercial service airports like PUB. The CASP’s preferred forecast used the current based aircraft fleet mix of each airport to determine the future growth rate of total based aircraft. PUB’s based aircraft numbers forecasted by the CASP were:

- **2018 Baseline:** 124.
- **2028 Projection:** 137.
- **2038 Projection:** 151.
- **2023 Projection:** 130.
- **2033 Projection:** 144.
- **CAGR:** 1.0 percent.

The mix of based aircraft for incremental periods throughout the planning period is presented in **TABLE B13**. In line with historical based aircraft growth, the percentages of based aircraft type are expected to remain relatively constant.

**TABLE B13 General Aviation Based Aircraft Fleet Mix, 2019-2040**

AIRCRAFT TYPE	2019	2025	2030	2035	2040
<i>Single Engine</i>	51 (85.0%)	56 (84.8%)	59 (82.2%)	63 (80.9%)	68 (80.7%)
<i>Multi Engine</i>	4 (6.7%)	5 (7.69%)	6 (8.4%)	6 (7.7%)	7 (8.3%)
<i>Jet</i>	4 (6.7%)	4 (6.1%)	5 (7.0%)	5 (6.4%)	6 (7.1%)
<i>Helicopter</i>	1 (1.7%)	1 (1.5%)	2 (2.8%)	3 (3.9%)	3 (3.6%)
<b>TOTAL</b>	<b>60</b> <b>(100%)</b>	<b>66</b> <b>(100%)</b>	<b>72</b> <b>(100%)</b>	<b>78</b> <b>(100%)</b>	<b>84</b> <b>(100%)</b>

**SOURCE:** Mead & Hunt.

**NOTE:** Percentages may be off slightly due to rounding.



## Runway Design Code (RDC)/Critical Aircraft Analysis

FAA AC 5000-17, *Critical Aircraft and Regular Use* provides guidance on defining critical aircraft for the purposes of airport planning and states that aircraft owned by private companies, but operated under contracts with the federal government or Department of Defense, are to be classified as civil aircraft, not military aircraft and should count toward the critical aircraft and regular use determinations.

The types of aircraft presently using PUB and those projected to in the future are important considerations for airport planning. Critical Aircraft is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of a runway or an airport. Similar characteristics refers to grouping of aircraft by comparable characteristics as determined by the Runway Design Code (RDC) described in AC 150/5300-13A *Airport Design*. The RDC is a coding system used to relate and compare the operational performance and physical characteristics of aircraft to airport design criteria. The RDC has two components. The first component, depicted by a letter (i.e., A, B, C, D, or E), is the Aircraft Approach Category (AAC), and relates to aircraft approach speed (operational performance characteristic). The second component, depicted by a roman numeral (i.e., I, II, III, IV, or V), is the Airplane Design Group (ADG) and relates to aircraft wingspan (physical characteristic). Generally, aircraft approach speed applies to runways and runway-related facilities, while aircraft wingspan is related to separation criteria associated with taxiways and taxilanes. **TABLE B14** details this summary of operations by RDC at PUB.

Based on an examination of the current operational information as contained in the TFMSC and data provide by CAE-Doss, most of the existing aircraft operations at PUB are within the A-I through B-II RDCs categories. Aircraft within the RDC C-I and C-II categories accounted for approximately 4,240 operations. The Bombardier CRJ 200 has an RDC of C-II and accounted for 1,830 of the existing operations. Therefore, it is the designated the existing Critical Aircraft for PUB. This aircraft is expected to be phased out of the SkyWest fleet by 2040. Consequently, the E-175 (with an RDC of C-III) is expected to be the future Critical Aircraft for PUB. Since SkyWest currently includes both Runway 8R/26L and Runway 17/35 in their operations specifications, and because SkyWest often utilizes Runway 35 for departures to Denver, the CRJ 200 and E-175 are the existing and future critical aircraft for both runways. For Runway 8L/26R, the existing critical aircraft is the Diamond DA20 Katana operated by CAE-Doss. CAE-Doss has also had discussions with the DOD about operating the single-engine turboprop Beechcraft T-6A Texan II in the future so this aircraft is considered the future critical aircraft for the trainer runway.

**TABLE B14 Summary of Operations Forecasts by RDC, 2019-2040**

RDC	2019	2025	2030	2035	2040
A-I, A-II, B-I, B-II	211,686	413,028	430,032	431,128	432,326
C-I, C-II	4,240	5,887	6,130	6,290	4,549
D-I, D-II	222	228	250	252	252
B-III, C-III, D-III	142	160	180	192	2,028
<b>TOTAL</b>	<b>216,291</b>	<b>419,333</b>	<b>436,592</b>	<b>437,862</b>	<b>439,155</b>

SOURCE: Mead & Hunt.

NOTE: Military and helicopter aircraft operations not included in total.

**Critical Aircraft Determination by Runway at PUB**

- **Runway 8R/26L.** Existing – Bombardier CRJ 200, Future – Embraer E-175
- **Runway 17/35.** Existing – Bombardier CRJ 200, Future – Embraer E-175
- **Runway 8L/26R (Trainer).** Existing – Diamond DA20 Katana, Future – Beechcraft T-6A Texan II.

**Aviation Forecasts Summary**

A summary of the aviation forecasts is presented in **TABLE B15**. This information is used as a background to develop the remaining portions of the report (analyze facility requirements, to aid development of alternatives and to guide the preparation of the plan and program of future airport facilities). In other words, the aviation activity forecasts are the foundation from which plans will be developed and implementation decisions will be made. In 2020, the FAA indicated that CAE-Doss aircraft operations should not be counted as military and instead should be included as GA since this company operates as a 14 CFR 141 flight school. **TABLE B15** reallocates the military and GA operations accordingly.

**TABLE B15 Summary of Aviation Activity Forecasts, 2019-2040**

AVIATION ACTIVITY	2019	2025*	2030*	2035*	2040*
<b>ENPLANEMENTS</b>					
<b>Total</b>	<b>11,571<sup>1</sup></b>	<b>12,067</b>	<b>12,942</b>	<b>13,881</b>	<b>14,888</b>
<b>OPERATIONS</b>					
Commercial Service	4,157 <sup>2</sup>	4,157	4,157	4,157	4,157
<i>Air Taxi</i>	2,291	2,291	2,291	2,291	2,291
<i>Air Carrier</i>	1,866	1,866	1,866	1,866	1,866
General Aviation	212,634 <sup>3</sup>	415,711	433,072	434,454	435,923
<i>Itinerant</i>	90,616	171,525	178,961	180,139	181,397
<i>Local</i>	122,018	244,186	254,111	254,315	254,526
Military	633 <sup>4</sup>	633	633	633	633
<b>Total</b>	<b>217,424</b>	<b>420,501</b>	<b>437,862</b>	<b>439,244</b>	<b>440,713</b>
Total Itinerant	<b>95,406</b>	<b>176,315</b>	<b>183,751</b>	<b>184,930</b>	<b>186,188</b>
Total Local	<b>122,018</b>	<b>244,186</b>	<b>254,111</b>	<b>254,314</b>	<b>254,525</b>
<b>BASED AIRCRAFT</b>					
<b>Total</b>	<b>60<sup>5</sup></b>	<b>66</b>	<b>72</b>	<b>78</b>	<b>84</b>
<b>Critical Aircraft</b>	<b>CRJ 200</b>	<b>CRJ 200</b>	<b>CRJ 200</b>	<b>CRJ 200</b>	<b>E 175</b>

SOURCES: <sup>1</sup> FAA TAF.

<sup>2</sup> FAA TAF.

<sup>3</sup> FAA TAF. CAE-Doss aircraft operations reallocated as GA operations

<sup>4</sup> FAA TAF. CAE-Doss aircraft operations reallocated as GA operations.

<sup>5</sup> FAA National Based Aircraft Inventory validated by FAA, 2020. Does not include CAE-Doss owned aircraft.

\* Projections provided by Mead & Hunt.

In addition, a comparison of the selected forecasts for passenger enplanements, commercial operations, and total operations with the FAA TAF is summarized in **TABLE B16**. This comparison will be used to determine the consistency of the airport forecasts with the TAF. As a rule, forecasted activities are considered consistent with the TAF if the forecasts differ by less than 10% in the 5-year forecast period (2025), and 15% in the 10 and 15-year forecast periods (2030 and 2035).

**TABLE B16 Preferred Forecasts/TAF Forecast Comparison, 2019-2035**

AVIATION ACTIVITY	PREFERRED FORECASTS	2019 TAF	AF/TAF % DIFFERENCE
<b>Enplanements</b>			
Base Year (2019)	11,571	11,571	0.0%
2025	12,440	12,067	3.1%
2030	13,259	12,942	2.4%
2035	14,114	13,881	1.7%
<b>Commercial Operations</b>			
Base Year (2019)	4,157	4,157	0.0%
2025	4,157	4,324	-3.9%
2030	4,157	4,464	-6.9%
2035	4,157	4,638	-10.4%
<b>Total Operations</b>			
Base Year (2019)	217,424	217,424	0.0%
2025	420,501	218,877	92.1%
2030	437,862	220,007	99.0%
2035	439,244	221,188	98.6%
<b>Based Aircraft</b>			
Base Year (2019)	60	128	-53.1%
2025	66	150	-56.0%
2030	72	170	-57.6%
2035	78	190	-58.9%

SOURCES: FAA TAF; Pueblo Airport; Mead & Hunt.

Passenger enplanements and commercial operations are consistent with the TAF, while total operations and based aircraft are not. The discrepancy for total operations lies in the future projections (2025-2035) using CAE-Doss’s forecast of unconstrained demand. Alternatively, the discrepancy for based aircraft is due to the use of PUB’s FAA validated aircraft count for 2019, which immediately causes inconsistencies between the forecasts and the TAF.