Chapter 7. Aviation Demand Forecasts

7.1. Introduction

Forecast analyses are an important component of aviation system planning because they lend insight into how future aviation demand may impact the system and its potential needs. Forecasts are prepared for aviation demand indicators such as enplanements, operations, and based aircraft for all commercial service and general aviation (GA) airports included in the 2020 CASP. Examination of how future demand will impact the aviation system is central to identification of constraints, strengths, opportunities, and recommendations for future system improvements to handle projected demand.

Developing reliable and accurate forecasts is dependent upon two elements: good baseline data from which to forecast and employing multiple methodologies to verify their authenticity. The reliability of data for some indicators is better than others. For example, enplanements are recorded by both commercial service airports and airlines as required by the FAA. Most airports maintain records on based aircraft as they relate to the revenues they collect, however, for operations at non-towered airports, there are no reliable data that are available from any consistent source. Baseline data was obtained from multiple sources to compare and select the most accurate data. For NPIAS airports, their baseline data was coordinated with the FAA to determine the preferred source by indicator. All baseline data was reviewed with CDOT Division of Aeronautics and PAC members for the 2020 CASP.

Forecasting methodologies used in the CASP provide both “top-down” and “bottom-up” approaches to determine future aviation projections. The use of multi-level metrics reveals how different demand indicators are influenced by market changes and are considered during the selection of “preferred” projections. Top-down approaches view the aviation system from a “bird’s-eye” level to understand its overall performance and direction into the future. Bottom-up approaches analyze the individual airports’ performances at the local level to gauge how demand may change based on local conditions.

The base year for the CASP is 2018 and forecasts are prepared for the next 20 years to 2038. All forecast projections in the following sections assume the aviation system will perform in an unconstrained environment throughout the duration of the planning horizon. Forecasts and aviation demand analyses in the CASP are documented in the following sections:

- Socio-Economic Trends
- Aviation Trends
- Enplanements Forecast
- Based Aircraft Forecast
- Operations Forecast
- Summary of Forecast Findings
- Alternative Forecasts

7.2. Socio-Economic Trends

There are strong relationships between demand for aviation, the size of an individual market, and prevailing economic conditions. This section examines trends in population, employment, per capita income, and gross regional product (GRP) in Colorado. The Colorado Office of Economic Development and International Trade (OEDIT) has divided the state into 14 regions to reflect the diversity of the state and its economy. Each region is shown in **Figure 7.1**. These 14 regions can be characterized roughly as follows:

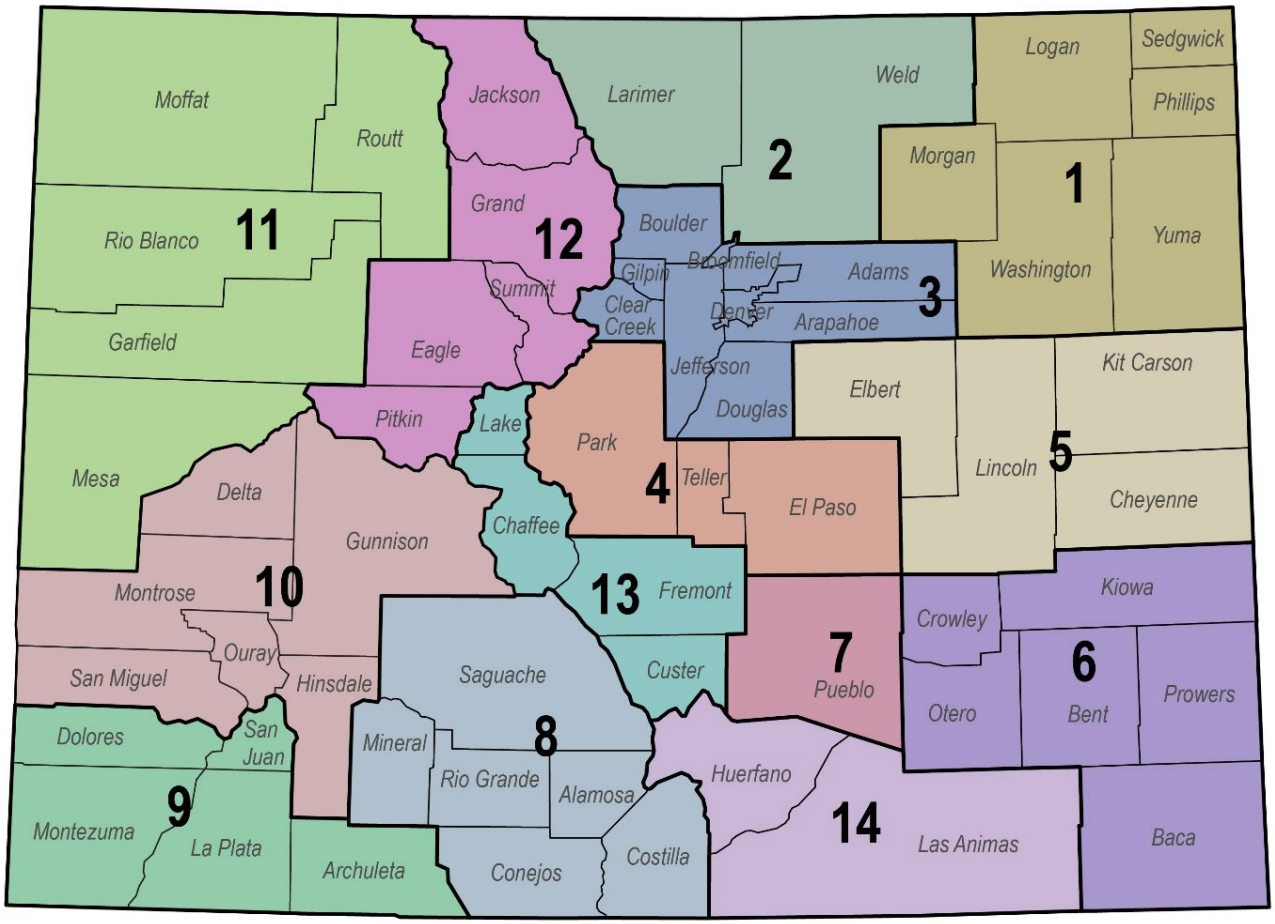
- Regions 1, 5, and 6 are located on the eastern plains of Colorado, and are noted for their strengths in agriculture, ranching, oil and gas development, wind and solar, as well as manufacturing.
- Regions 2, 3, 4, 7, and 14 make up Colorado's Front Range where most of Colorado's population lives and works. Denver, Northern Colorado, and Pikes Peak regions have the highest density of both people and jobs.
- Regions 10, 12, and 13 are notably Colorado's mountainous areas where tourism, skiing, and other outdoor activities are a key element of the local economies.
- Regions 8, 9, and 11 contain one of the most fertile valleys in Colorado (San Luis Valley), extensive natural resources, and important national recreational areas and heritage landmarks.

Because these regional clusters are diverse, the socio-economic analysis was completed for each OEDIT region and the whole state using Woods and Poole Economics county data for Colorado.[1] In addition, counties were grouped to also reflect the catchment area for Denver International Airport (DEN). Of the 64 counties in Colorado, 26 are considered direct users of airport services at DEN and include the following counties:

- Adams
- Arapahoe
- Boulder
- Cheyenne
- Clear Creek
- Denver
- Douglas
- Eagle
- El Paso
- Elbert
- Gilpin
- Grand
- Jackson
- Jefferson
- Kit Carson
- Larimar
- Lincoln
- Logan
- Morgan
- Park
- Phillips
- Sedgwick
- Summit
- Washington
- Weld
- Yuma

[1] CDOT Statewide and Regional Planning uses the Colorado Department of Local Affairs (DOLA), State Demography Office (SDO) data. The OEDIT Regions highlighted in the CASP are also the Colorado Planning and Management Regions of the State Demography Office. In most cases, demographic data from Colorado DOLA SDO is the same as Woods and Poole Economic, Inc.

Figure 7.1. OEDIT Regions



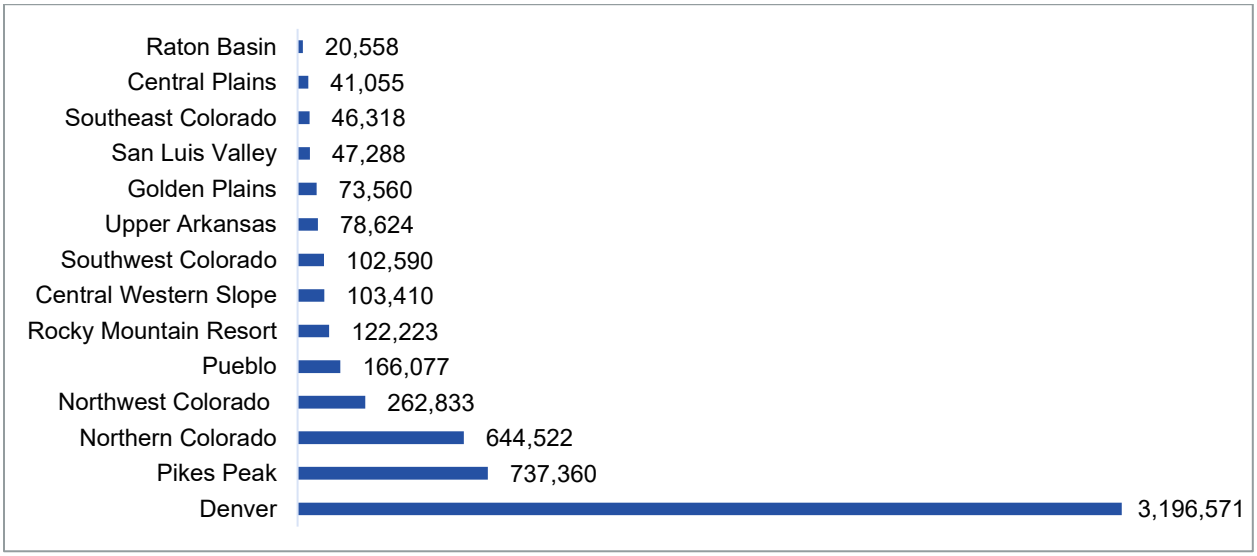
Source: OEDIT, 2018

Regions							
1	Golden Plains	4	Pikes Peak	8	San Luis Valley	12	Rocky Mountain Resort
2	Northern Colorado	5	Central Plains	9	Southwest Colorado	13	Upper Arkansas
3	Denver	6	Southeast Colorado	10	Central Western Slope	14	Raton Basin
		7	Pueblo	11	Northwest Colorado		

7.2.1. Population Trends

Population is an indicator of market size, growth trends, and market potential. The state of Colorado had an estimated 2018 population of 5.6 million people with more than half (57 percent) living in the Denver region and 82 percent living in the three northern Front Range regions (Denver, Pikes Peak, and Northern Colorado). **Figure 7.2** shows the distribution of population across OEDIT regions in 2018.

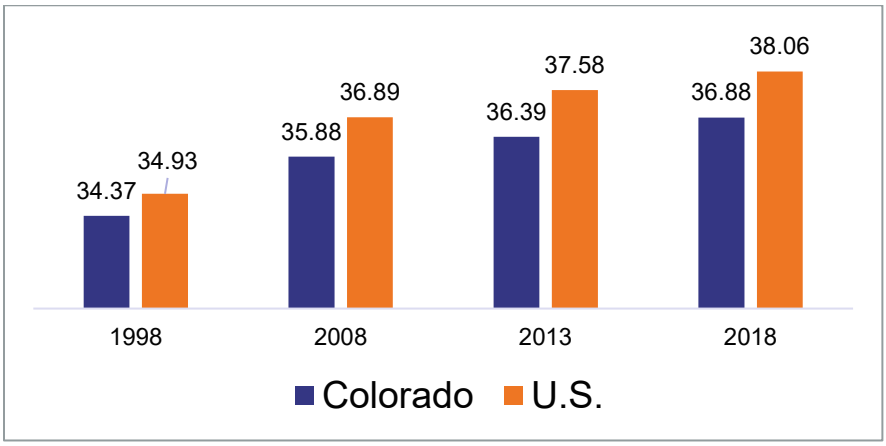
Figure 7.2. Population by OEDIT Region, 2018



Source: Woods and Poole Economics Inc., 2018

Colorado is a relatively young state when comparing median age with the rest of the U.S. **Figure 7.3** shows the median age for Colorado residents and the U.S. In both instances, median age is increasing over the last 20 years as the population is growing older.

Figure 7.3. Median Age of Coloradans and the U.S.



Source: Woods and Poole Economics Inc., 2018

Table 7.1 shows population growth in each region and in the DEN catchment area from 1998 to 2018. The state has grown by more than one-third (37 percent) since 1998 and, in the last 10 years, state population has grown at a compound annual growth rate (CAGR) of 1.4 percent. In more rural areas, growth is muted or in decline. It should be noted that CAGR calculates a constant rate of change over a given time period. It dampens the effect of volatility during periods that experience significant change and is essentially a "smoothed" annual growth rate.

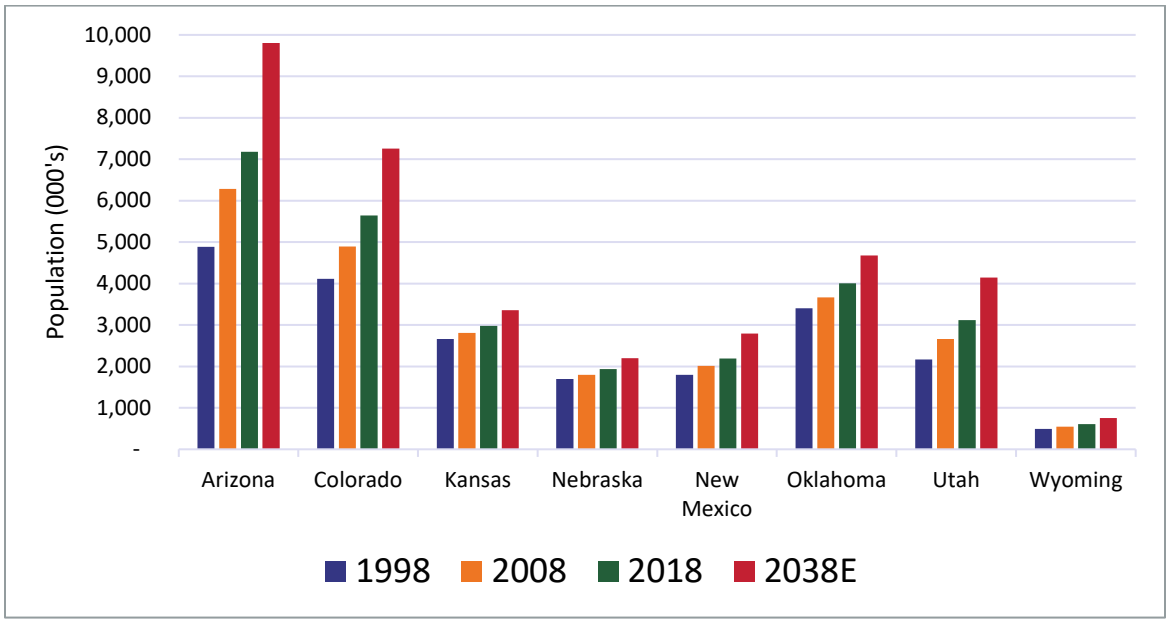
Table 7.1. Population Growth by OEDIT Region, 1998-2018

		Thousands			CAGR	
Region		1998	2008	2018	1998-2008	2008-2018
1	Golden Plains	68.18	71.23	73.56	0.4%	0.3%
2	Northern Colorado	407.31	535.13	644.52	2.8%	1.9%
3	Denver	2,307.42	2,715.76	3,196.57	1.6%	1.6%
4	Pikes Peak	530.95	637.04	737.36	1.8%	1.5%
5	Central Plains	34.30	38.14	41.06	1.1%	0.7%
6	Southeast Colorado	52.18	48.50	46.32	-0.7%	-0.5%
7	Pueblo	137.69	156.75	166.08	1.3%	0.6%
8	San Luis Valley	45.12	45.85	47.29	0.2%	0.3%
9	Southwest Colorado	76.96	90.49	102.59	1.6%	1.3%
10	Central Western Slope	83.16	99.21	103.41	1.8%	0.4%
11	Northwest Colorado	191.52	241.85	262.83	2.4%	0.8%
12	Rocky Mountain Resort	88.09	110.65	122.22	2.3%	1.0%
13	Upper Arkansas	71.24	76.30	78.62	0.7%	0.3%
14	Raton Basin	22.51	22.84	20.56	0.1%	-1.0%
	Total Colorado	**4,116.64**	**4,889.73**	**5,642.99**	**1.7%**	**1.4%**
	DEN Catchment Area	**3,401.63**	**4,068.77**	**4,772.17**	**1.8%**	**1.6%**
	% DEN Catchment	**83%**	**83%**	**85%**		

Source: Woods and Poole Economics, Inc., 2018

When comparing population growth in Colorado with adjacent states, Colorado is the second largest state behind Arizona. **Figure 7.4** shows population growth for the eight states in the region and includes forecasted population in 2038. In 20 years, population in Colorado is expected to reach 7.3 million people.

Figure 7.4. Population Growth in Mountain States, 1998-2038



Source: Woods and Poole Economics, Inc., 2018

Table 7.2 shows population forecasts for Colorado by OEDIT region, both in number and the CAGR.

Table 7.2. Population Forecasts for OEDIT Regions, 2018-2038

		Thousands			CAGR	
	Region	2018	2028	2038	2018-2028	2028-2038
1	Golden Plains	73.56	75.92	77.10	0.3%	0.2%
2	Northern Colorado	644.52	762.24	886.91	1.7%	1.5%
3	Denver	3,196.57	3,668.01	4,169.70	1.4%	1.3%
4	Pikes Peak	737.36	829.98	923.68	1.2%	1.1%
5	Central Plains	41.06	44.76	48.17	0.9%	0.7%
6	Southeast Colorado	46.32	45.72	44.64	-0.1%	-0.2%
7	Pueblo	166.08	176.96	186.28	0.6%	0.5%
8	San Luis Valley	47.29	49.14	50.26	0.4%	0.2%
9	Southwest Colorado	102.59	125.18	150.79	2.0%	1.9%
10	Central Western Slope	103.41	112.91	121.37	0.9%	0.7%
11	Northwest Colorado	262.83	299.34	335.65	1.3%	1.2%
12	Rocky Mountain Resort	122.22	139.18	156.02	1.3%	1.1%
13	Upper Arkansas	78.62	83.92	88.51	0.7%	0.5%
14	Raton Basin	20.56	20.66	20.51	0.0%	-0.1%
	Total Colorado	**5,642.99**	**6,433.91**	**7,259.59**	**1.3%**	**1.2%**
	DEN Catchment Area	**4,772.17**	**5,471.27**	**6,207.07**	**1.4%**	**1.3%**
	% DEN Catchment	**85%**	**85%**	**86%**		

Source: Woods and Poole Economics, Inc., 2018

7.2.2. Economic Trends

Aviation demand is closely tied to economic conditions. For system planning purposes, employment, per capita income, and GRP were used to discern changes in the Colorado economy that might impact aviation demand. Several trends were apparent and are detailed in the following subsections.

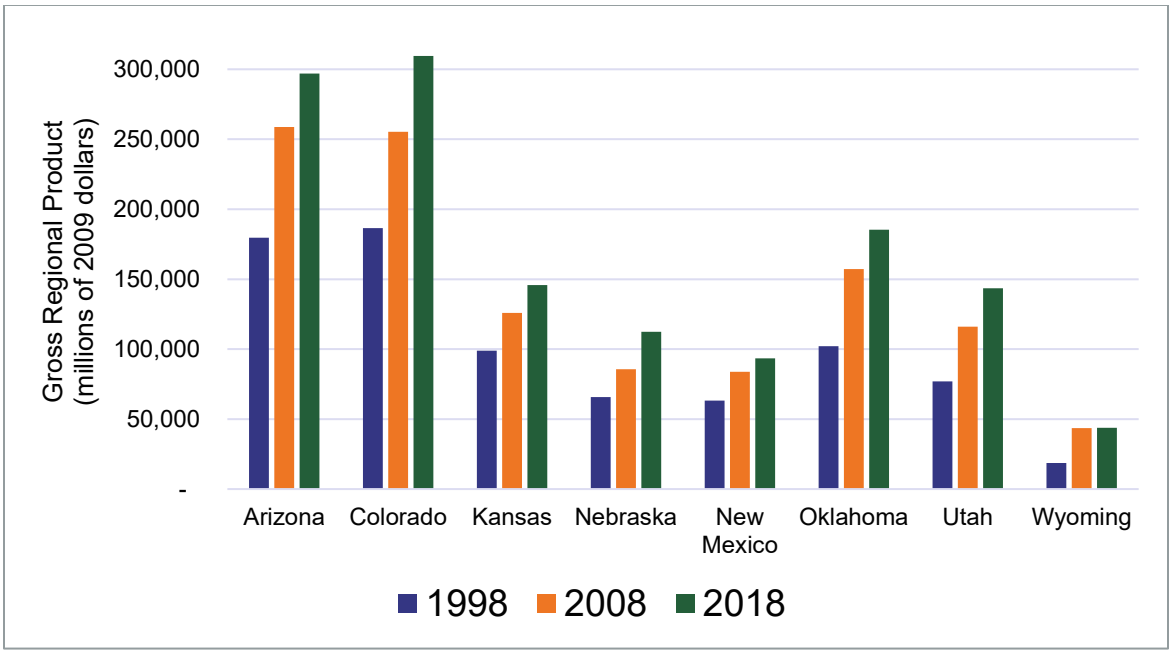
7.2.2.1. Colorado is an Economic Leader in the Region

Advanced industries are redefining Colorado's economy as private investment grows in aerospace, advanced manufacturing, bioscience, electronics, information technology, craft beer, and cannabis. These specialty industries are providing additional growth paths and employment opportunities to the mainstays of Colorado's economy that include:

- Agriculture & Food
- Defense & Homeland Security
- Energy and Natural Resources
- Tourism

In 2018, the State led its neighbors in total Gross Regional Product (GRP) as **Figure 7.5** shows.

Figure 7.5. GRP Growth in Mountain States, 1998-2018

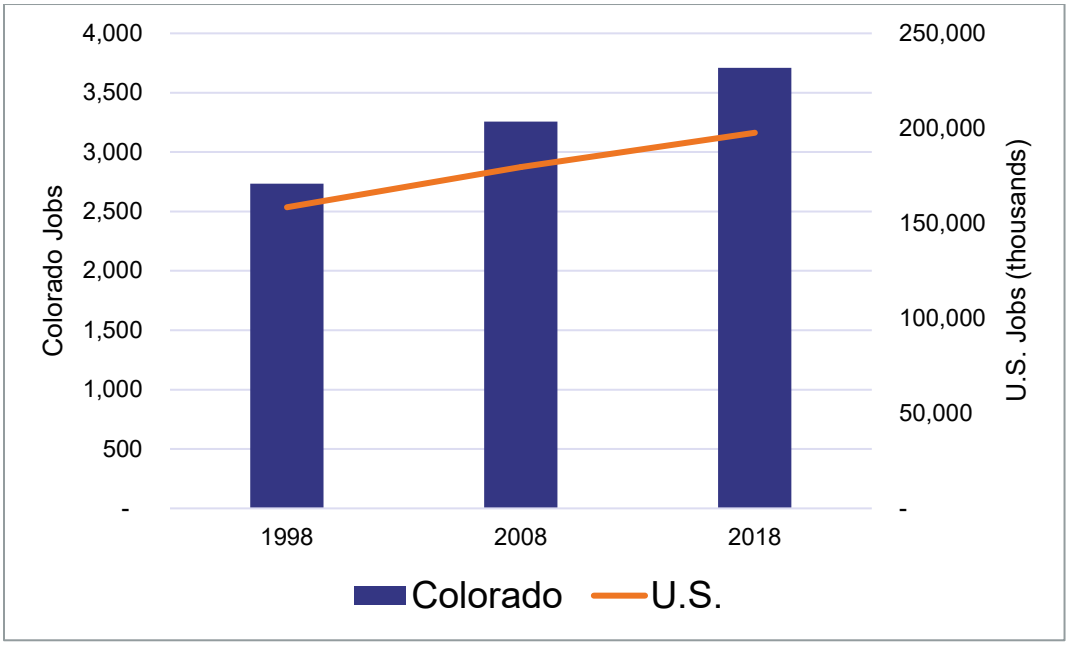


Source: Woods and Poole Economics, Inc., 2018

7.2.2.2. Employment is Growing at a Faster Rate in Colorado than in the U.S. Average

Jobs in Colorado grew by 36 percent in the last 20 years (or 1.5 percent per year); in the U.S. jobs grew by 25 percent (or 1.1 percent per year) as shown in **Figure 7.6.**

Figure 7.6. Growth in Employment, Colorado and the U.S., 1998-2018

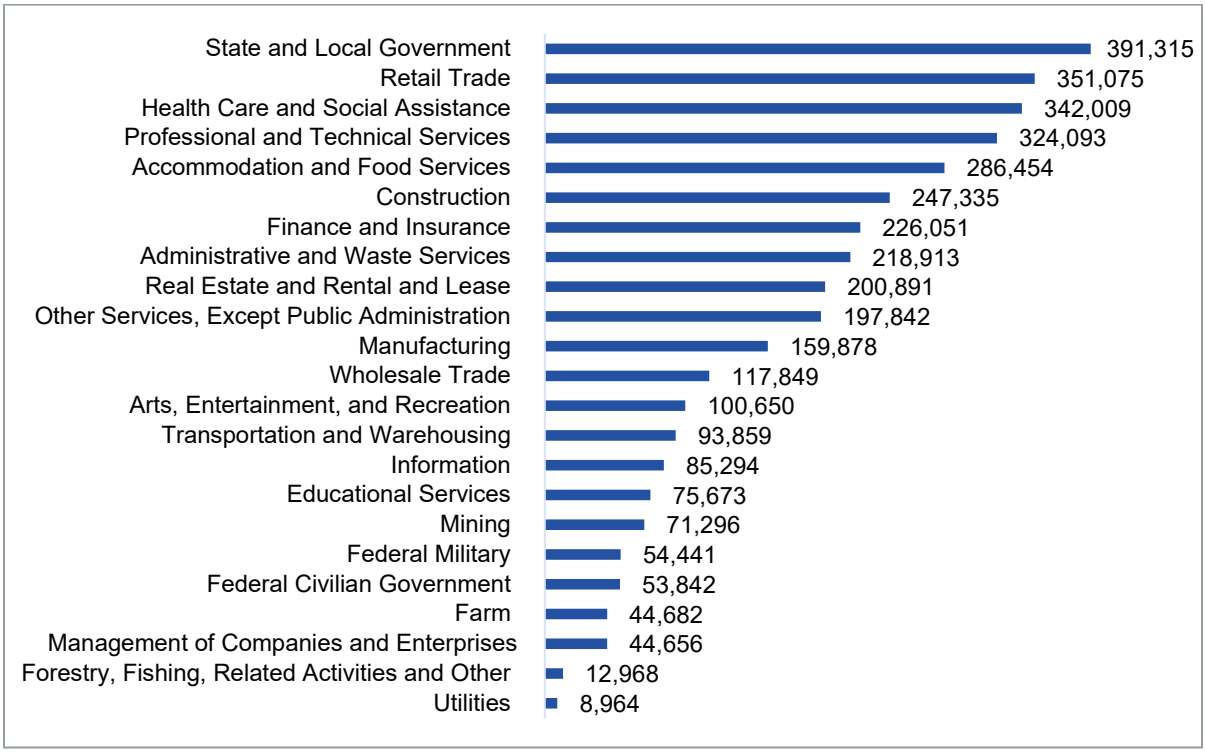


Source: Woods and Poole Economics, Inc., 2018

7.2.2.3. Employment by Industry is Changing

Supporting a diverse economy, Colorado has a high participation rate in the labor force. In 2018, 68 percent of the population was employed, compared with a 60 percent participation rate in the rest of the U.S. **Figure 7.7** shows employment by industry. Top employers include state and local government, retail trade, health care and social assistance, followed by professional and technical services then accommodation and food services. As expected in a growing economy, construction ranks sixth in the state as a top employer. Aviation employment exists under the industry category "Transportation and Warehousing". The industry as a whole reported almost 94,000 employees in 2018.

Figure 7.7. Colorado Employment by Industry, 2018



Source: Woods and Poole Economics, Inc., 2018

Employment by industry has changed in the last 20 years as **Table 7.3** shows. In 1998, retail was the largest employer, followed by state and local government, accommodations and food services, and manufacturing. Over the 20-year period, five sectors remained steady or declined: farm (1 percent), federal civilian government (0 percent), utilities (-2 percent), information (-13 percent), and manufacturing (-20 percent). The industries that experienced the largest growth in employment were mining (209 percent), management of companies and enterprises (164 percent), and educational services (147 percent). The transportation and warehousing industry which houses aviation industry's statistics saw a one percent increase between 1998 and 2008. Between 2008 and 2018, the entire industry experienced a 0.8 percent growth in employment. **Table 7.4** ranks forecast employment by industry in 2038. Overall, employment in Colorado is expected to grow in the next 20 years by 1.3 million jobs or 34 percent, with health care and social assistance becoming the State's largest industry. In the next 10 years, construction, real estate, finance and insurance, as well as educational services are anticipated to grow substantially.

Table 7.3. Colorado Employment by Industry, 1998-2018

Industry	Thousands			CAGR	
	1998	2008	2018	1998-2008	2008-2018
Retail Trade	301.63	318.70	351.08	0.6%	1.0%
State and Local Government	272.82	339.02	391.32	2.2%	1.4%
Health Care and Social Assistance	202.12	268.57	342.01	2.9%	2.4%

Industry	Thousands			CAGR	
	1998	2008	2018	1998-2008	2008-2018
Accommodation and Food Services	201.76	243.18	286.45	1.9%	1.7%
Manufacturing	200.54	156.34	159.88	-2.5%	0.2%
Professional and Technical Services	198.34	281.63	324.09	3.6%	1.4%
Construction	196.35	241.47	247.34	2.1%	0.2%
Administrative and Waste Services	163.75	196.98	218.91	1.9%	1.1%
Finance and Insurance	153.37	186.69	226.05	2.0%	1.9%
Other Services, Except Public Administration	141.18	174.29	197.84	2.1%	1.3%
Real Estate and Rental and Lease	128.96	176.12	200.89	3.2%	1.3%
Wholesale Trade	102.99	111.18	117.85	0.8%	0.6%
Information	98.34	89.38	85.29	-1.0%	-0.5%
Transportation and Warehousing	78.44	86.81	93.86	1.0%	0.8%
Arts, Entertainment, and Recreation	64.20	86.18	100.65	3.0%	1.6%
Federal Civilian Government	53.89	52.50	53.84	-0.3%	0.3%
Farm	44.23	45.18	44.68	0.2%	-0.1%
Federal Military	42.53	45.86	54.44	0.8%	1.7%
Educational Services	30.69	55.26	75.67	6.1%	3.2%
Mining	23.11	48.22	71.30	7.6%	4.0%
Management of Companies and Enterprises	16.91	32.53	44.66	6.8%	3.2%
Forestry, Fishing, Related Activities and Other	9.54	10.93	12.97	1.4%	1.7%
Utilities	9.13	8.86	8.96	-0.3%	0.1%
Total Colorado	**2,734.80**	**3,255.88**	**3,710.03**	**1.8%**	**1.3%**

Source: Woods and Poole Economics, Inc.

Table 7.4. Forecast of Colorado Employment by Industry, 2018-2038

Industry	Thousands			CAGR	
	2018	2028	2038	2018-2028	2028-2038
Health Care and Social Assistance	342.01	444.13	538.91	2.6%	2.0%
State and Local Government	391.32	457.73	500.91	1.6%	0.9%
Retail Trade	351.08	417.45	477.62	1.7%	1.4%
Professional and Technical Services	324.09	378.26	429.95	1.6%	1.3%
Accommodation and Food Services	286.45	339.01	373.68	1.7%	1.0%
Construction	247.34	312.36	352.29	2.4%	1.2%

Industry	Thousands			CAGR	
	2018	2028	2038	2018-2028	2028-2038
Finance and Insurance	226.05	276.11	304.52	2.0%	1.0%
Real Estate and Rental and Lease	200.89	252.77	301.73	2.3%	1.8%
Administrative and Waste Services	218.91	260.50	292.14	1.8%	1.2%
Other Services, Except Public Administration	197.84	237.49	274.43	1.8%	1.5%
Manufacturing	159.88	162.71	160.82	0.2%	-0.1%
Arts, Entertainment, and Recreation	100.65	123.79	143.26	2.1%	1.5%
Wholesale Trade	117.85	128.12	134.31	0.8%	0.5%
Educational Services	75.67	100.65	123.22	2.9%	2.0%
Transportation and Warehousing	93.86	105.83	115.54	1.2%	0.9%
Information	85.29	91.27	95.94	0.7%	0.5%
Mining	71.30	78.73	85.32	1.0%	0.8%
Management of Companies and Enterprises	44.66	61.16	77.34	3.2%	2.4%
Federal Civilian Government	53.84	56.87	59.39	0.5%	0.4%
Federal Military	54.44	54.79	55.09	0.1%	0.1%
Farm	44.68	47.25	48.57	0.6%	0.3%
Forestry, Fishing, Related Activities and Other	12.97	14.73	16.18	1.3%	0.9%
Utilities	8.96	9.68	10.13	0.8%	0.5%
Total Colorado	**3,710.03**	**4,411.38**	**4,971.30**	**1.7%**	**1.2%**

Source: Woods and Poole Economics, Inc., 2018

7.2.2.4. Employment is Concentrated in the Urban Areas

Table 7.5 shows employment by OEDIT region. The three northern Front Range regions comprise 82 percent of the jobs in Colorado in 2018.

Table 7.5. Employment by OEDIT Region, 2018

Region	Employment	Share
Denver	2,233,432	58%
Northern Colorado	498,389	13%
Pikes Peak	424,585	11%
Northwest Colorado	170,469	4%
Rocky Mountain Resort	116,574	3%
Pueblo	80,244	2%
Southwest Colorado	70,025	2%
Central Western Slope	66,173	2%
Golden Plains	47,225	1%
Upper Arkansas	38,311	1%
San Luis Valley	27,792	1%
Southeast Colorado	25,445	1%
Central Plains	21,065	1%
Raton Basin	11,632	0%
Total Employment	**3,831,361**	**100%**

Source: Woods and Poole Economics, Inc., 2018

7.2.2.5. The Great Recession of 2007-2009 Impacted Rural Areas and Resorts Disproportionately

Regions where tourism, farming, and retail trade dominate were hardest hit by the recession as shown by loss of jobs and GRP during the 2008-2013 period in **Table 7.6** and **Table 7.7**. Fortunately, most regions with the exceptions of Northwest Colorado and Raton Basin have recovered to above 2007-2009 levels.

Table 7.6. Employment by OEDIT Region, 1998-2018

		Thousands of Jobs				Percent Change			
	Region	1998	2008	2013	2018	1998-2008	2008-2018	2008-2013	2013-2018
1	Golden Plains	40.18	42.85	44.11	47.23	7%	10%	3%	7%
2	Northern Colorado	330.20	412.39	446.48	498.39	25%	21%	8%	12%
3	Denver	1,625.40	1,909.52	2,010.68	2,233.43	17%	17%	5%	11%
4	Pikes Peak	331.47	384.15	390.27	424.59	16%	11%	2%	9%
5	Central Plains	16.05	19.20	19.64	21.07	20%	10%	2%	7%
6	Southeast Colorado	26.87	24.97	24.83	25.45	-7%	2%	-1%	2%
7	Pueblo	69.46	76.52	75.23	80.24	10%	5%	-2%	7%
8	San Luis Valley	23.65	26.02	26.20	27.79	10%	7%	1%	6%
9	Southwest Colorado	49.62	64.17	62.42	70.03	29%	9%	-3%	12%
10	Central Western Slope	52.10	66.05	61.22	66.17	27%	0%	-7%	8%
11	Northwest Colorado	121.33	169.86	156.20	170.47	40%	0%	-8%	9%
12	Rocky Mountain Resort	91.16	109.51	104.31	116.57	20%	6%	-5%	12%
13	Upper Arkansas	31.84	37.05	35.66	38.31	16%	3%	-4%	7%
14	Raton Basin	11.13	12.89	11.21	11.63	16%	-10%	-13%	4%
	Total Colorado	**2,820.46**	**3,355.13**	**3,468.46**	**3,831.36**	**19%**	**14%**	**3%**	**11%**
	DEN Catchment Area	**2,403.52**	**2,842.39**	**2,982.12**	**3,304.35**	**18%**	**16%**	**5%**	**11%**
	% DEN Catchment	**85%**	**85%**	**86%**	**86%**				

Source: Woods and Poole Economics, Inc., 2018

Table 7.7. Gross Region Product (in Millions of 2009 Dollars)

	Gross Regional Product (millions of 2009 $$)			Percent Share	Growth Rate		
Region	2008	2013	2018		2008-2013	2013-2018	2008-2018
Golden Plains	$2,575	$2,709	$2,994	1%	5%	11%	16%
Northern Colorado	$20,725	$22,793	$27,185	9%	10%	19%	31%
Denver	$166,233	$177,379	$207,203	67%	7%	17%	25%
Pikes Peak	$26,996	$28,330	$32,120	10%	5%	13%	19%
Central Plains	$949	$997	$1,085	0%	5%	9%	14%
Southeast Colorado	$1,301	$1,337	$1,414	0%	3%	6%	9%
Pueblo	$4,584	$4,707	$5,203	2%	3%	11%	14%
San Luis Valley	$1,336	$1,389	$1,564	1%	4%	13%	17%
Southwest Colorado	$3,784	$3,889	$4,418	1%	3%	14%	17%
Central Western Slope	$3,711	$3,347	$3,834	1%	-10%	15%	3%
Northwest Colorado	$13,206	$10,867	$12,206	4%	-18%	12%	-8%
Rocky Mountain Resort	$7,171	$6,366	$7,622	2%	-11%	20%	6%
Upper Arkansas	$1,928	$1,900	$2,125	1%	-1%	12%	10%
Raton Basin	$776	$647	$688	0%	-17%	6%	-11%
State of Colorado	**$255,229**	**$266,623**	**$309,626**	**100%**	**4%**	**16%**	**21%**
DEN Catchment Area	**$222,188**	**$236,363**	**$275,596**	**89%**	**6%**	**17%**	**24%**

Source: Woods and Poole Economics, Inc., 2018

7.2.2.6. Per Capita Income is not Evenly Distributed

Using inflation-adjusted dollars, average per capita income in the state is $47,542, however, there is variability across the state. **Table 7.8** shows personal income per capita for each OEDIT region and compares each region with the State (i.e. Colorado is indexed at 100). Denver and the Rocky Mountain Resort regions have the highest per capita income; the Upper Arkansas region has the lowest.

Table 7.8. Total Personal Income per Capita (in 2009 dollars)

	Region	2018	Index
1	Golden Plains	$39,824	84%
2	Northern Colorado	$40,358	85%
3	Denver	$53,020	112%
4	Pikes Peak	$40,685	86%
5	Central Plains	$43,542	92%
6	Southeast Colorado	$33,248	70%
7	Pueblo	$32,700	69%
8	San Luis Valley	$32,997	69%
9	Southwest Colorado	$41,464	87%
10	Central Western Slope	$36,380	77%
11	Northwest Colorado	$41,657	88%
12	Rocky Mountain Resort	$60,631	128%
13	Upper Arkansas	$30,824	65%
14	Raton Basin	$35,800	75%
	State of Colorado	**$47,542**	**100%**
	DEN Catchment Area	**$49,152**	**103%**

Source: Woods and Poole Economics, Inc., 2018

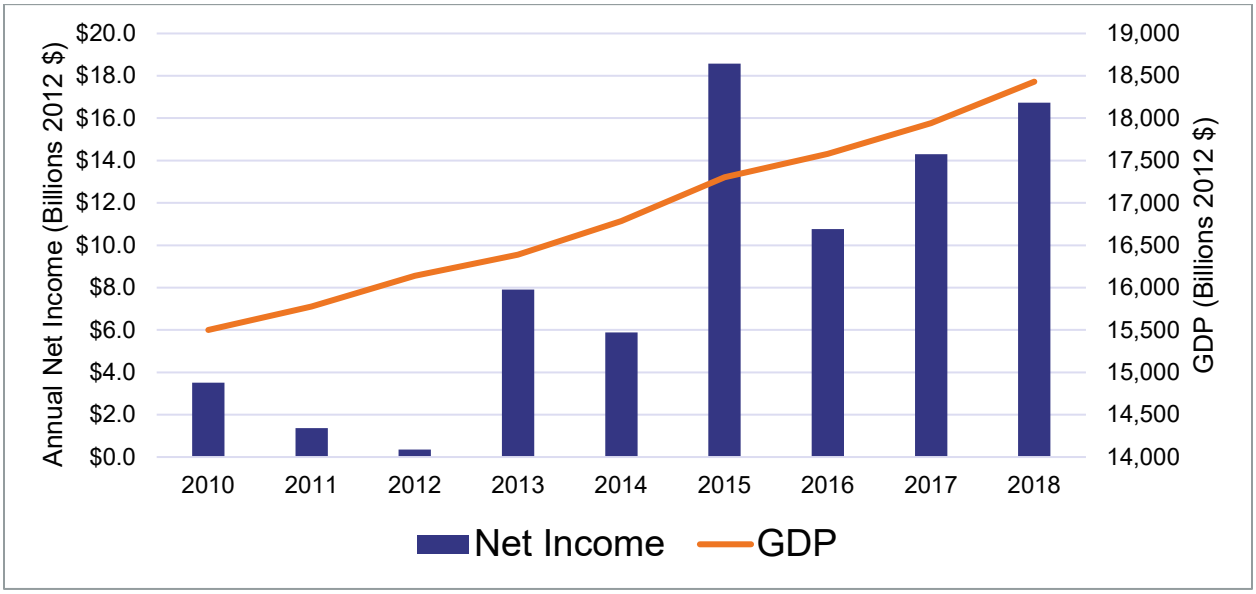
7.3. Aviation Trends

As noted, population and economic factors influence current and future aviation activity. In addition, the cost of labor, equipment, and fuel also impact the availability of commercial air service, aircraft in use, and the cost of flying. These macro factors will influence all segments of aviation activity at Colorado's airports and are examined below, beginning with commercial aviation, followed by a discussion of air cargo, then GA trends.

7.3.1. Commercial Aviation

U.S. airlines performed well in 2018, lengthening an undisrupted stretch of positive profits to eight years. **Figure 7.8** shows real net income for domestic U.S. scheduled service passenger airlines and gross domestic product (GDP) and underscores the strong connections between economic activity and airline performance. That said, today's domestic airline industry, despite consistently profitable results, looks very different than it did a decade ago. Recovery following the recession of 2007-2009 was cautious. Airlines lowered operating costs by eliminating unprofitable routes, grounded less fuel-efficient aircraft, and experimented with new pricing strategies. The number of domestic airlines operating also declined through mergers and bankruptcies.

Figure 7.8. Domestic U.S. Scheduled Service Passenger Airlines Annual Net Income and GDP (Billions of 2012$)



Sources: IHS Markit and Bureau of Transportation Statistics, 2018

7.3.1.1. Categories of U.S. Airlines

For purposes of forecasting commercial aviation, the FAA groups commercial airlines into mainline and regional carriers. Mainline carriers provide air service typically with aircraft that have 90 or more seats. Regional carriers use aircraft with 89 or less seats and their routes primarily serve as feeders to the mainline carriers. Regionals are either owned by the mainline carriers or operate under contract to the mainline carriers. In 2019, the U.S. airline industry represents a greatly consolidated number of airlines. Mainline carriers divide into three categories: network, value, and ultra low-cost carriers (ULCCs), representing different business models and operational characteristics. **Figure 7.9** shows the U.S. mainline airlines in their respective categories.

Figure 7.9. U.S. Mainline Airline Categories

Network Carriers	Value Carriers	Ultra Low-Cost Carriers
•American •Delta •United	•Alaska •Hawaiian •JetBlue •Southwest	•Allegiant •Frontier •Spirit

Source: Oliver Wyman, Airline Economic Analysis, 2018-2019

On an operational basis, network carriers have extensive domestic and international service and rely on hub and spoke route systems that integrate into worldwide multi-carrier networks. They have the highest unit revenue and highest revenue structure. Value carriers and ultra-low-cost carriers (ULCCs) at one time were a single group, however, cost structures, reliance on ancillary revenues, and capacity expansion patterns logically separate these carriers into two distinct categories.

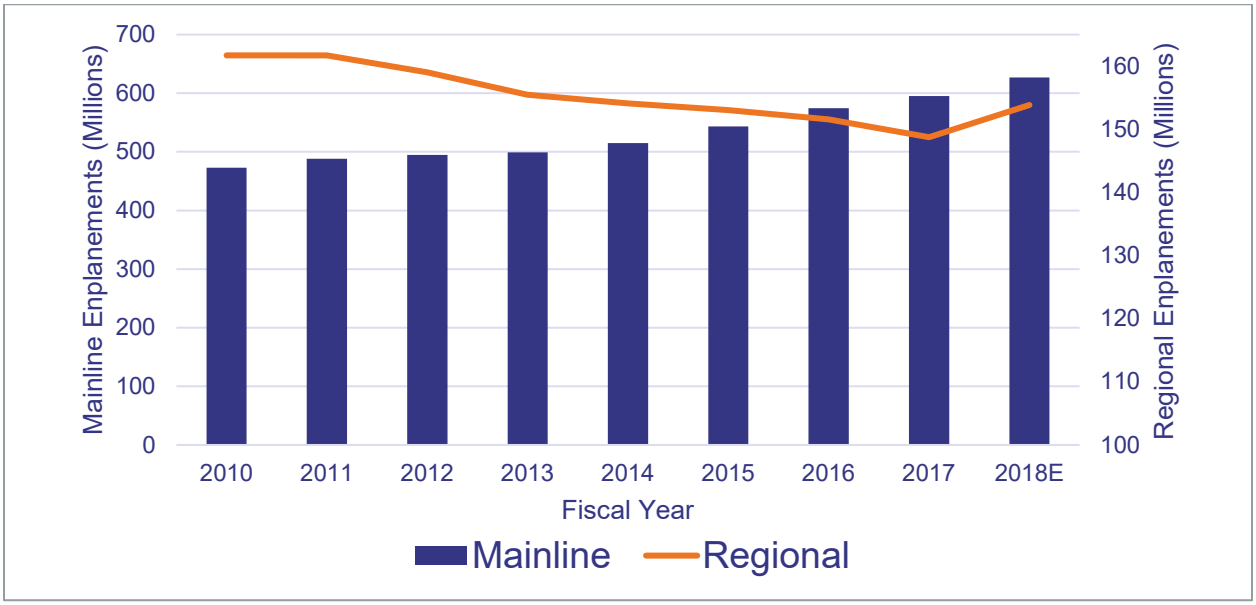
From a system planning perspective, the carriers and their regional partners that survived the recession represent a contracted field of air service development prospects.

7.3.1.2. Regional Market Continues to Shrink

In post-recession years, the mainline carriers (network, value, and ULCCs) recovered and continued to increase capacity and the number of passengers carried. In 2018, this group provided 14.8 percent more available seat miles (ASMs) than 2007 and carried 17.8 percent more passengers. Mainline carrier seats per aircraft mile grew from 152 seats on domestic routes in 2010 to 164.2 seats in 2018. Domestic departures on the other hand, remain approximately 17 percent below 2007 levels. Domestic load factors reached historic highs of 84.7 percent in 2018.[2] Load factors indicate the number of passengers in relation to the number of available seats on a flight. Higher load factors demonstrate a higher percentage of seats filled with passengers. Airlines are flying larger aircraft while conducting fewer operations, having implications on terminal and airfield operational capacities.

The regional carrier market has not enjoyed a similar recovery. Regional carrier capacity has grown 0.5 percent over the same period and passengers are down 1.5 percent.[3] With fewer mainline carriers, regional carriers are competing for even fewer contracts to provide shorter haul service for the mainline carriers. **Figure 7.10** compares growth in domestic revenue passenger enplanements for mainline carriers and regional carriers. The decline in regional carrier enplanements is evident against the backdrop of increasing mainline enplanements.

Figure 7.10. Scheduled Domestic U.S. Revenue Passenger Enplanements (Millions)



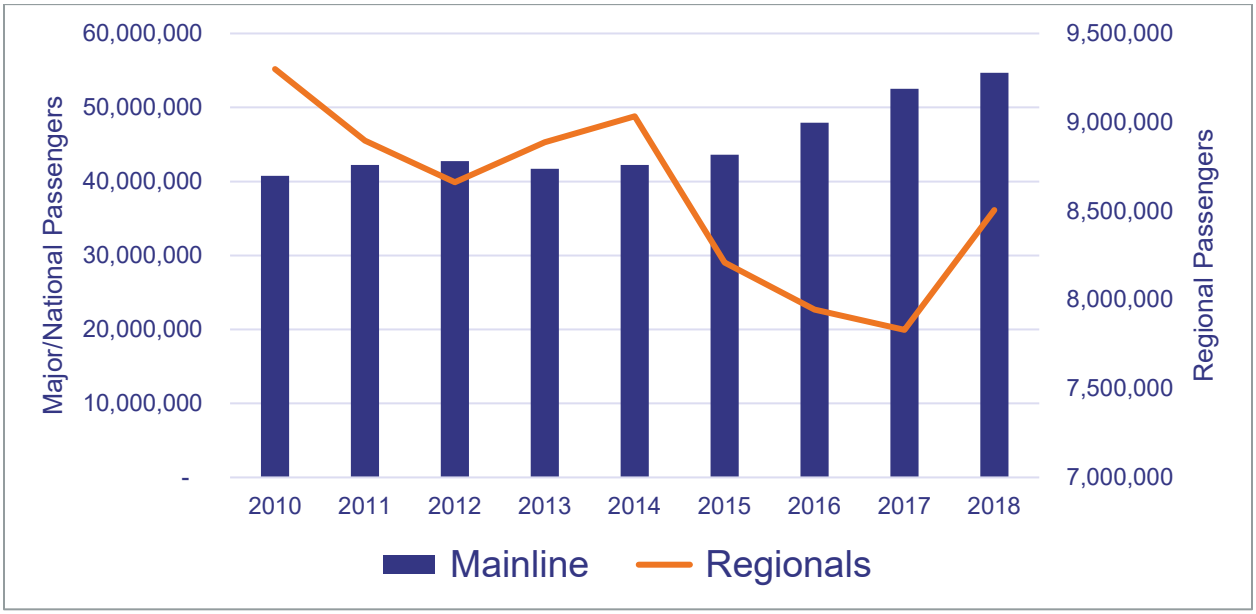
Sources: Form 41 and 298C, U.S. Department of Transportation, 2018

DEN serves as a feeder hub for regional operations within the state. United Express carriers serving DEN include Air Wisconsin Airlines Corporation, Trans States Airlines and its subsidiary GoJet Airlines,

[2] FAA Aerospace Forecasts, Fiscal Years 2019-2039
[3] Ibid

Republic, and SkyWest Airlines. Delta Air Lines operates its own fleet of regional aircraft. Compass Airlines and SkyWest Airlines also operate under contract as Delta Connection carriers. American Eagle also uses Compass Airlines at DEN. In 2018, regional airlines carried 8.5 million passengers in and out of DEN, representing 13.2 percent of total passengers.[4] That said, the national trends that show mainline passenger increases and regional carrier passenger declines persist at DEN as well and are shown in **Figure 7.11**.

Figure 7.11. Major/National and Regional Passengers at Denver International Airport[5]



Source: Denver International Airport, Passenger Traffic Reports, 2010-2018

7.3.1.3. Start-up Air Service Options Remain Active in Colorado

Colorado remains an active area for air service solutions in smaller markets. Boutique Airlines, flying a fleet of 9-seat Pilatus PC-12 aircraft, replaced Great Lakes Airlines when it ceased operations in March 2018. Boutique provides service as an Essential Air Service (EAS) carrier between DEN and Cortez Municipal (CEZ), between DEN and San Luis Valley Regional (ALS), and as a regularly scheduled carrier (non-EAS) between DEN and Telluride Regional Airport (TEX). Another scheduled charter operator, Denver Air Connection, is flying to and from TEX to DEN and Grand Junction Regional (GJT) to Centennial Airport (APA).

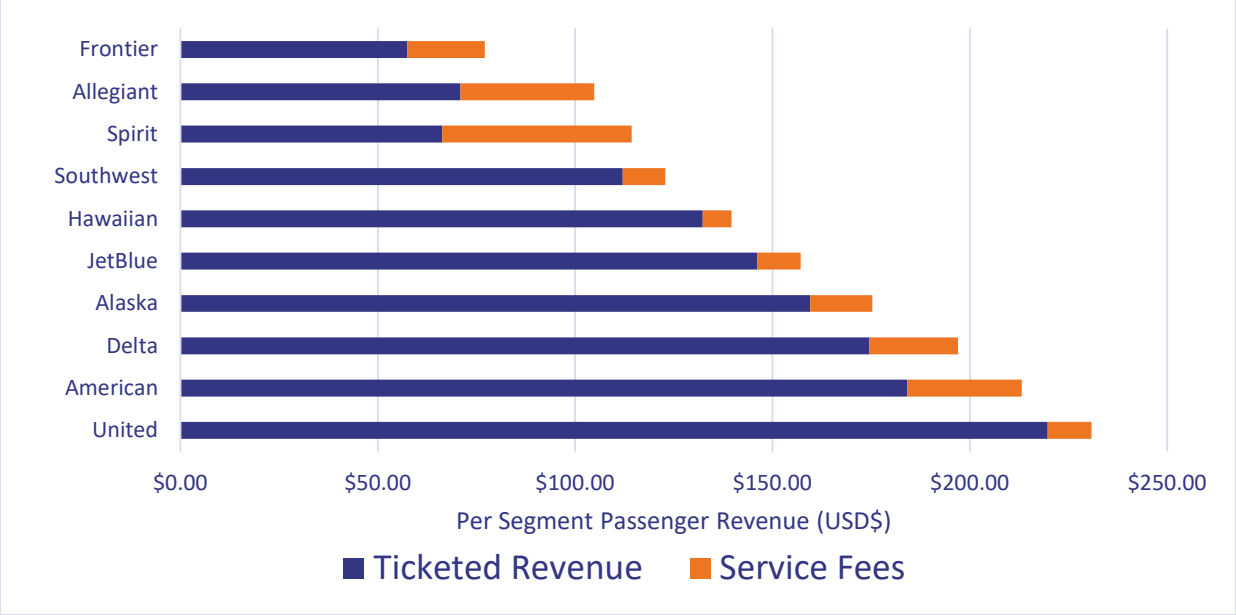
7.3.1.4. Add-on Fees Have Contributed to Net Revenues and Carrier Financial Performance

Profitability of mainline carriers has not been without competitive pressures from increased capacity primarily from the ULCCs, flat yields, and rising labor and equipment costs. Each of these factors plus volatile fuel prices have made it challenging for airlines to stabilize their financial performance. However, the use of add-on or ancillary service fees has contributed substantially to airline revenues. These include baggage fees, reservation change fees, priority boarding, fare locks, reserved seats, on-

[4] Denver International Airport, Passenger Traffic Report, December 2018
[5] Major/National carriers are DEN's designation for mainline carriers

board food, Wi-Fi, and other miscellaneous fees that generate revenues for the airlines. The ULCCs make greater use of the fees than other carriers, but as **Figure 7.12** shows, fees are a noticeable component of all airline passenger revenue.

Figure 7.12. The Importance of System Service Fees, Q3 2018



Source: Oliver Wyman, Airline Economic Analysis, 2018-2019

7.3.1.5. Outlook for Commercial Aviation

Each year the FAA prepares 20-year commercial aviation forecasts regarding domestic and international passenger enplanements, estimated load factors, aircraft sizes, and average trip lengths. The growth rates that drive these forecasts are important to the CASP forecasts and for that reason are presented in **Table 7.9** through **Table 7.12** as key background data for preparation of Colorado airport forecasts discussed later in this chapter.

Table 7.9. FAA Total U.S. Domestic and International Enplanement Forecasts

Enplanements (millions)	2018	2023	2028	2033	2038	CAGR 2018-2038
Domestic						
Mainline	627	690	736	806	884	1.7%
Regional	154	168	179	196	215	1.7%
Total Domestic	**781**	**858**	**915**	**1,002**	**1,099**	**1.7%**
International						
Mainline	96	106	125	147	174	3.0%
Regional	3	4	4	4	5	2.6%
Total International	**99**	**110**	**129**	**151**	**179**	**3.0%**
Total Enplanements	**880**	**968**	**1,044**	**1,153**	**1,278**	**1.9%**

Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

Table 7.10. FAA Seats per Aircraft Mile Forecasts

Seats/Aircraft Mile	2018	2023	2028	2033	2038	CAGR 2018-2038
Domestic						
Mainline	164.2	167.2	169.8	172	174.1	5.1%
Regional	63.8	67	69.6	72.2	74.9	0.8%
International						
Mainline	223.3	227.2	228.4	229.4	230.5	0.2%
Regional	64	72.3	73.8	75.3	76.8	0.9%

Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

Table 7.11. FAA Average Trip Length Forecasts

Average Trip Length	2018	2023	2028	2033	2038	CAGR 2018-2038
Domestic						
Mainline	922	935	948	961	974	3.5%
Regional	487	497	507	517	528	0.4%
International						
Mainline	2,817	2,934	2,913	2,877	2,826	0.0%
Regional	680	694	708	723	737	0.4%

Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

Table 7.12. FAA Load Factor Forecasts

Load Factors	2018	2023	2028	2033	2038	CAGR 2018-2038
Domestic						
Mainline	85.3%	86.2%	86.7%	87.0%	87.2%	0.5%
Regional	79.7%	80.6%	81.0%	81.2%	81.3%	0.1%
International						
Mainline	81.5%	81.5%	81.6%	81.3%	81.6%	0.0%
Regional	75.9%	76.7%	77.1%	77.3%	77.4%	0.1%

Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

7.3.2. Air Cargo

Shipment of mail, small packages, and heavy freight, all referred to as cargo, is intrinsically multi-modal. Cargo can be carried by truck, aircraft, rail, or ship or a combination of modes, depending on the origin and destination, cost preferences and schedule requirements set by the shipper. Because the shipping of cargo is highly price sensitive and competitive, there is some fluidity amongst modes as transportation companies build out their networks of service and respond to changes. These changes include economic activity, fluctuations in the price of fuel and other operational costs, competition, and for international cargo, security requirements, trade policies, and tariffs.

The movement of air cargo occurs using one of three types of carriers: all-cargo, integrated express carriers, or in the belly compartment of passenger airlines. All-cargo carriers are cargo specialists and typically operate airport-to-airport, on dedicated aircraft that are turboprops, regional jets, narrow-body or wide body jets. In Colorado, Alpine Air Express, Inc. carries both mail and cargo on small aircraft as does Bemidji Aviation Services. These airlines typically operate scheduled feeder cargo service from smaller airports into DEN on a contract basis and then at DEN, cargo may be transferred to a larger all-cargo carrier such Atlas Air, Inc. and its wholly owned subsidiary, Southern Air and shipped on these aircraft for longer haul routes. Integrated express operators rely on a hub and spoke system and move heavy cargo and small packages door-to-door, utilizing a combination of air and ground services to pick-up, transit, and deliver. FedEx and UPS are the largest integrated express carriers in Colorado, carrying 40 percent and 27 percent respectively, of all mail, freight, and express packages in 2018[6]. "Belly-cargo" services provided by passenger airlines can vary widely depending on size of aircraft in the fleet and the carrier's commitment to cargo lift. At DEN, United Airlines hauls most of the air mail and cargo handled by passenger airlines. A large amount of cargo is also carried by Southwest Airlines and several international carriers such as Lufthansa and British Airways.

Air cargo often consists of high-value shipments that are relatively lightweight and whose delivery is time sensitive. Common examples of air cargo are flowers and fish, electronic components, repair parts for the automotive and aerospace industries, medical devices, organs and tissue delivery. The amount of air cargo handled by an airport is closely related to market catchment size, local market industries, and airport facilities.

In Colorado, DEN serves as the principal gateway for air cargo and is in the top 25 U.S. airports for air cargo tonnage. Air freight and express packages account for 90 percent of the cargo that moves through DEN; air mail is the remaining 10 percent of air cargo. Most air mail is carried by passenger aircraft and primarily by United Airlines in Colorado. FedEx and UPS dominate as the all-cargo carriers. **Table 7.13** and **Figure 7.13** display the total pounds of cargo at DEN by type in recent years. Over the last 5 years, total air cargo weight has grown 18 percent with passenger airlines shouldering a greater proportion of air mail. Both passenger airlines and all cargo carriers have carried more freight and express, especially in 2017 and 2018.

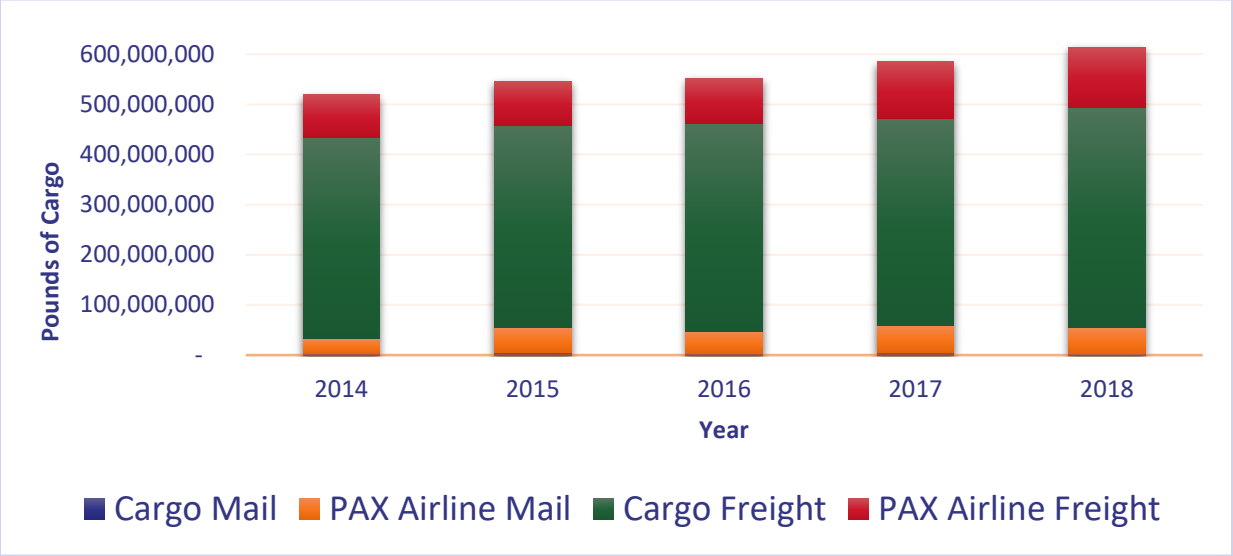
Table 7.13. Air Cargo - Denver International Airport by Type (Pounds)

Type of Cargo	2014	2015	2016	2017	2018
Cargo Mail	3,362,654	4,984,915	3,795,949	4,346,700	2,246,874
PAX Airline Mail	29,492,710	50,011,128	43,703,915	55,359,800	52,039,414
Cargo Freight & Express	400,639,141	403,852,252	414,580,754	411,440,250	439,344,417
PAX Airline Freight & Express	85,939,735	86,936,136	89,560,461	113,707,055	119,964,869

Source: Denver International Airport, Passenger and Cargo Traffic Reports, 2010-2018

[6] Denver International Airport Operations and Traffic Report, December 2018

Figure 7.13. Air Cargo - Denver International Airport (Pounds)



Source: Denver International Airport, Passenger and Cargo Traffic Reports, 2010-2018

While demand for air cargo is continuous and growing, expansion of Amazon Air (previously Prime Air) is introducing another significant participant in the time-sensitive, door-to-door market. Amazon is developing its own branded delivery service using aircraft, trucks, and drones. In April 2017, Amazon Air began operations at Cincinnati/Northern Kentucky International Airport (CVG) as its principal hub and plans to build out a property at the airport as a sorting facility and parking area for 100 aircraft. As of 2018, Amazon Air listed service from CVG to 24 airports, including DEN, using aircraft operated by Air Transport International, ABX Air, Atlas Air, and Southern Air.

Since online retailers have undoubtedly stimulated the desire for and expectations about time-definite package delivery, the entry of Amazon Air may result in shifts of market share amongst different integrated carriers in the future. For carriers such as FedEx, packages shipped for Amazon were priced at a discount. The long-term outlook for Amazon's program of self-delivery is unknown.

The FAA prepares air cargo forecasts that track positively with forecasted GDP. International air cargo is also influenced by security restrictions and trade policies, including tariffs. Other important factors that go into the air cargo forecasts include assumptions about the price of fuel and the distribution of air cargo between passenger aircraft and all-cargo aircraft.

In 2018, the domestic and international market for air cargo was 42.8 billion revenue ton miles (RTMs). By 2038, the FAA estimates that the air cargo market will grow to 83.9 billion RTMs or grow by an average annual rate of 3.4 percent. Domestic air cargo is expected to grow 1.8 percent annually and international RTMs are expected to grow at 4.2 percent per year. International air cargo RTMs represented 63 percent of the market in 2018 and are anticipated grow to 73 percent of RTMs by 2038. In 2018, the dominant carriers are the all-cargo (and integrated) carriers, hauling 90 percent of domestic air cargo revenue ton miles (RTMs) and 72 percent of international air cargo. Over the forecast period, all cargo carrier RTMs should increase market share in both the domestic and international markets as **Table 7.14** shows.

Table 7.14. FAA Air Cargo RTM Forecasts (Millions of RTMs)

Revenue Ton Miles (millions)	2018	2023	2028	2033	2038	CAGR 2018-2038
Domestic						
All-Cargo	14,182	15,571	16,791	18,573	20,467	1.9%
Passenger Carrier	1,580	1,662	1,716	1,814	1,925	1.0%
Total Domestic	**15,762**	**17,233**	**18,507**	**20,387**	**22,392**	**1.8%**
International						
All-Cargo	19,465	25,179	31,572	39,200	47,999	4.6%
Passenger Carrier	7,532	9,032	10,468	11,975	13,460	2.9%
Total International	**26,997**	**34,211**	**42,040**	**51,175**	**61,459**	**4.2%**
Total RTMs	**42,759**	**51,444**	**60,547**	**71,562**	**83,851**	**3.4%**

Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

7.3.3. General Aviation

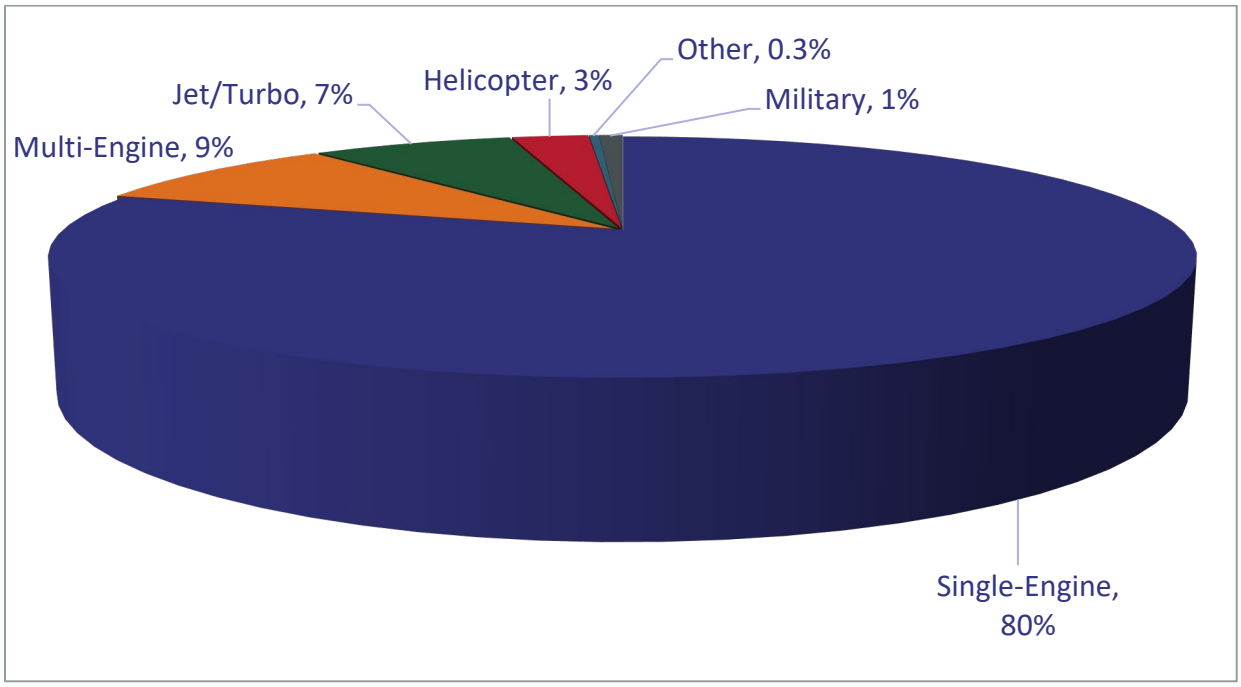
According to FAA and airport-reported sources, the GA community in Colorado is a major user of the Colorado airport system, performing an estimated 1.5 million total operations in 2018 or more than 59 percent of total Colorado airport operations.

GA in Colorado serves a diverse community that uses aircraft for:

- Aerial agricultural applications
- Aerial observation
- Air medical
- Business flying
- Aerial wildland firefighting
- Aerial search and rescue
- Fixed-wing external loads
- Instructional activities
- On-demand charters, air taxis, and air ambulance
- Personal flying
- Sightseeing

The 2018 GA fleet is between 4,613 and 5,208 based aircraft at Colorado airports depending on the informational source the data is gathered from. For the 2020 CASP, a baseline of 4,633 based aircraft was determined for 2018. The process for establishing the based aircraft baseline can be found in section **7.5 Based Aircraft Forecast**. Of the 2018 CASP based aircraft, most of these aircraft (80 percent) are single-engine aircraft as shown in **Figure 7.14**. Nine percent of the fleet are multi-engine and seven percent are jet aircraft. Single-engine aircraft make up a higher proportion of the Colorado fleet than the national average of active aircraft (61 percent). Less than one percent of 2018 CASP based aircraft are categorized as “other” which include ultra-lights, gliders, and experimental aircraft. Active aircraft are tracked by the FAA in an annual survey as an indicator of based aircraft in the U.S. as opposed to based aircraft which are typically tracked by airports.

Figure 7.14. Colorado's Airport-Reported GA Fleet by Type, 2018



Sources: 2018 Inventory & Data Form; FAA Master Record, 2019

Colorado airports with the largest number of based aircraft are shown in **Table 7.15**. These airports have 80 percent of based aircraft in the state. Front Range and resort airports are well represented in the list.

Table 7.15. Airports with the Largest Number of Airport-Reported Based Aircraft, 2018

Associated City	Airport Name	FAA ID	Based Aircraft
Denver	Centennial	APA	880
Colorado Springs	Meadow Lake	FLY	450
Denver	Colorado Air and Space Port	CFO	434
Denver	Rocky Mountain Metropolitan	BJC	425
Longmont	Vance Brand	LMO	294
Fort Collins/Loveland	Northern Colorado Regional	FNL	255
Colorado Springs	Colorado Springs Municipal	COS	231
Erie	Erie Municipal	EIK	207
Greeley	Greeley-Weld County	GXY	201
Grand Junction	Grand Junction Regional	GJT	129
Pueblo	Pueblo Memorial	PUB	129
Boulder	Boulder Municipal	BDU	116
Aspen	Aspen-Pitkin County	ASE	89
Steamboat Springs	Steamboat Springs	SBS	86
Montrose	Montrose Regional	MTJ	81

Associated City	Airport Name	FAA ID	Based Aircraft
Canon City	Fremont County	1V6	81
Eagle	Eagle County Regional	EGE	78
		Subtotal	**4,166**
		All Colorado Based Aircraft	**5,208**

Sources: 2018 Inventory & Data Form, FAA 5010 Master Record, 2019

7.3.3.1. Importance of Industry Trends to GA

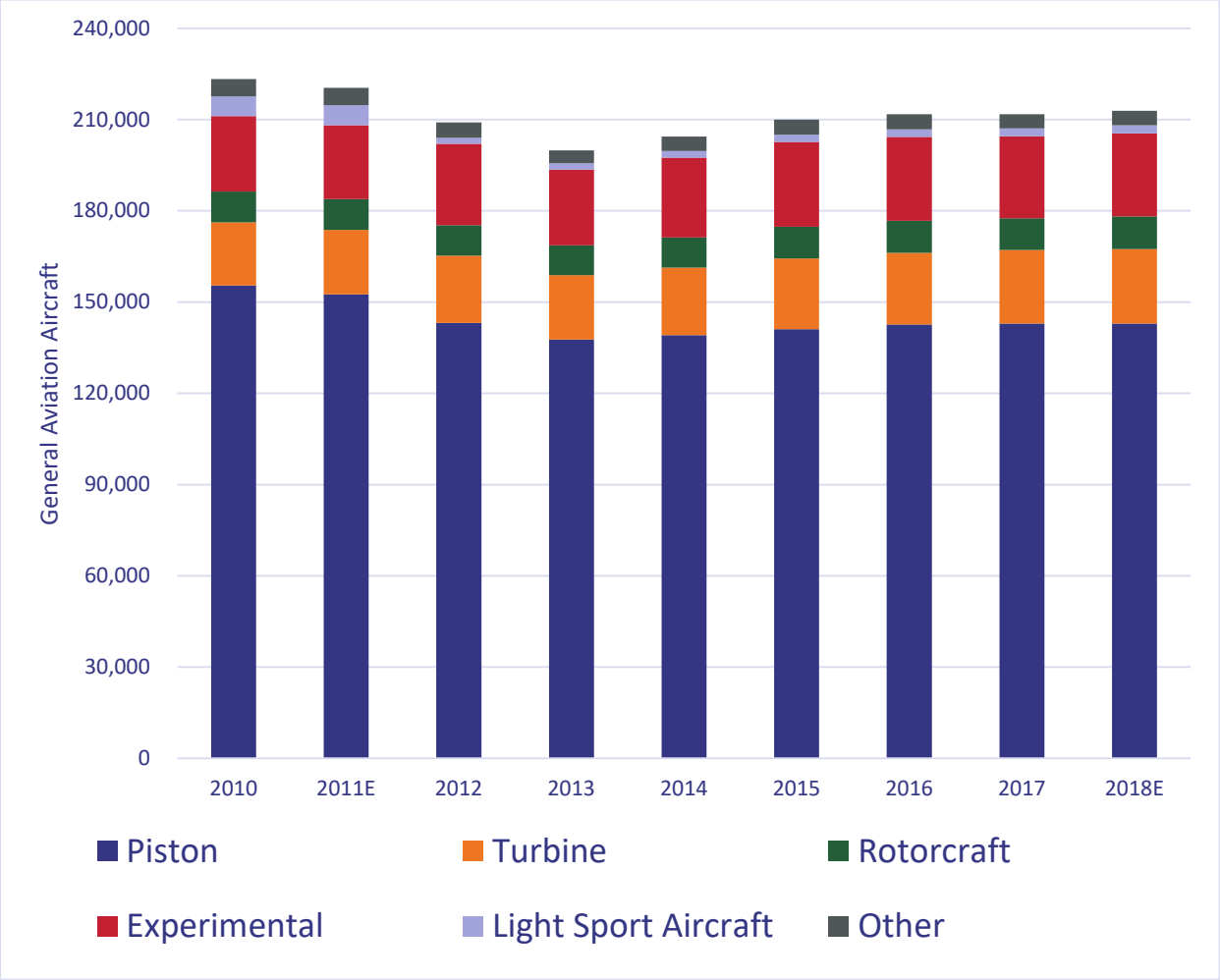
Because GA activity often occurs at statistically small and very small airports, forecasts of the future fleet and level of operations necessarily rely heavily on information about local economic activity and national analyses that examine how the economy, fuel prices, aircraft retirements and acquisitions, regulations, pilot demographics, and the cost of aircraft ownership influence GA activity. This section discusses how these trends are likely to influence GA activity in Colorado.

7.3.3.2. FAA Forecasts for GA Aircraft

Each year, the FAA updates its forecast of GA aircraft and operations based on economic trends and a survey of GA and Part 135 (on-demand charter) operators. These forecasts contain historical data and form a good foundation for statewide forecasts as the national perspective and datapoints make trends more discernable. **Figure 7.15** shows the composition of the active GA fleet in the U.S. from 2010 to 2018 and **Table 7.16** shows the average annual growth rate of the fleet for the same years.

In terms of active aircraft, the number of piston aircraft, both single-engine and multi-engine, continued to decline between 2010 and 2018. Jets, turbines, helicopters, and experimental aircraft are the standout growth segments in the fleet, however, from a pure number of aircraft perspective, the high number of piston aircraft continue to far outweigh all other categories of the GA fleet.

Figure 7.15. Historical Changes in the Active U.S. GA Fleet, 2010-2018



Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

Table 7.16. Average Annual Growth Rate by Active Aircraft Type, 2010-2018

Active Aircraft	Avg. Annual Growth, 2010-18
Single Engine	-0.9%
Multi-Engine	-2.4%
Turboprop	0.7%
Turbojet	3.0%
Piston Rotorcraft	-0.9%
Turbine Rotorcraft	1.6%
Experimental	1.2%
Light Sport Aircraft	-10.6%
Other	-2.3%
All Active GA Aircraft	**-0.6%**

Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

These historical trends carry across to the FAA forecasts where active and older piston aircraft are expected to retire at a faster rate than they are replaced. For this dominant segment of the Colorado GA fleet, the forecasts suggest continued decline of these aircraft, lower AvGas sales, and fewer hours flown. At the airport level, growth in this segment will be achieved through increased market share rather than actual expansion/growth of the piston aircraft submarket. Airports that serve business jets and helicopters, the main growth segments of the industry, are more likely to experience increased activity and fuel sales. **Table 7.17** shows the FAA forecasts for active aircraft, hours flown, and fuel consumed for total piston and turbine aircraft.

Table 7.17. Forecasts of Active Aircraft, Hours Flown, and Fuel Consumed, 2018-2039

	Active Aircraft		Hours Flown (000's)		Gallons of Fuel Consumed (000's)		Hours Flown and AvGas Consumed Per Piston Aircraft		Hours Flown and Jet A Consumed Per Turbine Aircraft	
Year	Piston	Turbine	Piston	Turbine	AvGas	Jet Fuel	Hours	AvGas	Hours	Jet A
2018	146,260	31,880	14,404	9,578	208,000	1,613,000	98	1,422	300	50,596
2019	145,700	32,385	14,305	9,929	207,045	1,674,626	98	1,421	307	51,710
2029	133,085	38,580	12,792	12,802	191,000	2,089,000	96	1,435	332	54,147
2039	122,230	46,085	12,265	15,543	184,000	2,335,000	100	1,505	337	50,667
Average Annual Growth - 2019-2039										
	-0.9%	**1.8%**	**-.08%**	**2.3%**	**-0.6%**	**1.7%**	**0.1%**	**0.3%**	**0.6%**	**0.01%**

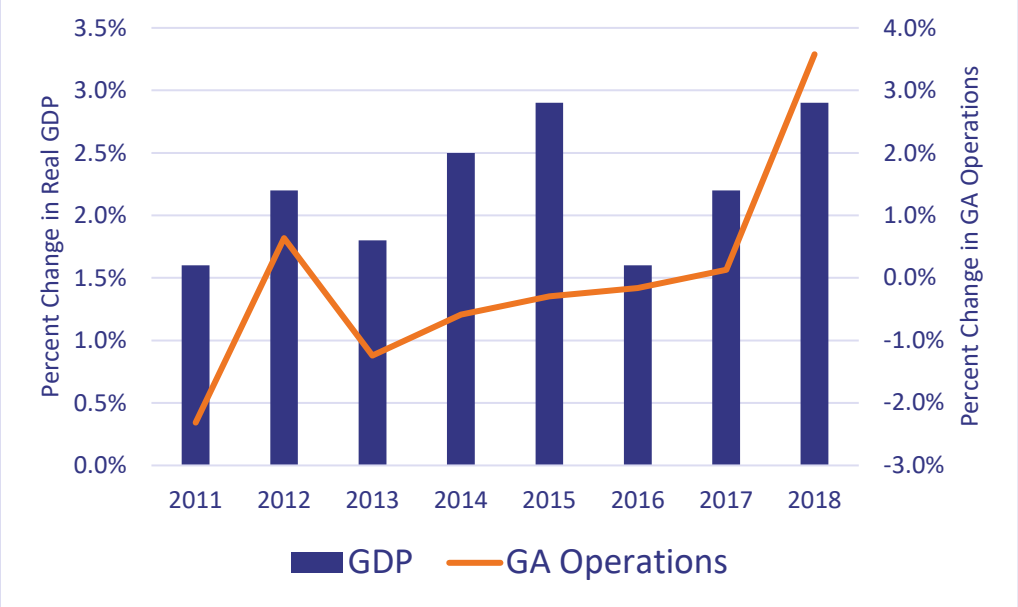
Source: FAA Aerospace Forecasts, Fiscal Years 2019-2039

7.3.3.3. A Vibrant Economy Has Even Lifted GA

The long-term and sustained declines of active piston aircraft have dampened expectations for this segment of the GA industry. However, a robust economy in the U.S. does have an impact on GA activity. GA experienced modest increases in aircraft sales and activity. Shipments of piston aircraft increased by 54 total aircraft over 2017 piston shipments; turbine shipments increased by 64 aircraft

over the previous year. The number of GA operations were an even more positive indicator of growth, as GA operations increased by an estimated 915,000 or by 3.6 percent in 2018 over 2017 numbers at FAA and contract air traffic control towered airports. **Figure 7.16** tracks the percent annual change in real U.S. GDP and in GA aircraft operations at airports with FAA and contract air traffic control towers.

Figure 7.16. Annual Percent Change in Real GDP and GA Operations at Airports with FAA and Contract Air Traffic Control Towers



Sources: U.S. Bureau of Economic Analysis and FAA Aerospace Forecasts, Fiscal Years 2019-2039

It is anticipated that GA will continue to wax and wane with economic and climate conditions. Many rotorcraft and fixed wing aircraft support the oil and gas industry, air medical, forest management, search and rescue, and aerial wildland firefighting. Unfavorable pilot demographics, increasing costs of training and aircraft ownership, and competing recreational alternatives may dampen the recreational flying segment, but business aviation and fractional use of aircraft has a more positive outlook.

7.4. Enplanements Forecast

Enplanements are defined as boarded passengers on a commercial service flight. Future enplanement activity projected to take place at Colorado's commercial service airports is a significant indicator in assessing system-wide and commercial service airport-specific improvements. Enplanement activity affects how well commercial service airports are positioned to handle projected passenger demand in terms of their facilities such as terminal buildings, apron size, airfield designs, etc.

To gather the most consistent data on enplanement activity currently taking place across Colorado's commercial airports, information for annual enplanements was obtained from the FAA Air Carrier Activity Information System (ACAIS) and the FAA Terminal Area Forecast (TAF). FAA ACAIS data were used for all airports where data was available when Calendar Year 2018 data were published by FAA in July 2019. FAA ACAIS data were available for all but two airports, FNL and TEX. TAF data pulled in March 2019 were used for TEX enplanement data. TAF data pulled in January 2019 were used for FNL

enplanement data. For ease of reference, enplanements in the following analyses are rounded to the nearest ten.

Table 7.18 displays enplanements for each airport by the reported source. There are 14 commercial service airports that handle enplanements for Colorado's aviation system. These airports served over 33.3 million enplanements in 2018 alone. The bulk of this activity occurred at DEN which facilitated 93.9 percent of enplanement activity system-wide. This amounts to over 31.3 million enplaned passengers occurring at DEN in 2018. Colorado Springs Municipal (COS) handled the next largest portion with over 846,000 enplanements, followed by Aspen-Pitkin County (ASE) which saw almost 288,000 enplaned passengers in 2018.

Table 7.18. 2018 Commercial Service Airports Enplanements by Source

Associated City	Airport Name	FAA ID	FAA TAF 2018 Enplanements	FAA ACAIS	Preferred Source	CASP 2018 Baseline
Alamosa	San Luis Valley Regional	ALS	6,800	7,030	FAA ACAIS	7,030
Aspen	Aspen-Pitkin County	ASE	272,540	287,900	FAA ACAIS	287,900
Colorado Springs	Colorado Springs Municipal	COS	873,630	846,080	FAA ACAIS	846,080
Cortez	Cortez Municipal	CEZ	7,400	7,720	FAA ACAIS	7,720
Denver	Denver International	DEN	30,849,920	31,363,570	FAA ACAIS	31,363,570
Durango	Durango-La Plata County	DRO	188,620	189,230	FAA ACAIS	189,230
Eagle	Eagle County Regional	EGE	170,910	175,950	FAA ACAIS	175,950
***Fort Collins/ Loveland**	Northern Colorado Regional	FNL	3,390	N/A	FAA TAF	3,390
Grand Junction	Grand Junction Regional	GJT	219,570	222,230	FAA ACAIS	222,230
Gunnison	Gunnison-Crested Butte Regional	GUC	36,830	36,480	FAA ACAIS	36,480
Hayden	Yampa Valley	HDN	100,260	100,550	FAA ACAIS	100,550
Montrose	Montrose Regional	MTJ	132,080	134,240	FAA ACAIS	134,240
Pueblo	Pueblo Memorial	PUB	8,970	10,450	FAA ACAIS	10,450
Telluride	Telluride Regional	TEX	1,060	N/A	FAA TAF	1,060
Commercial Service Airports Total			**32,871,980**	**33,381,430**		**33,385,880**

**Note: 2018 TAF enplanements were obtained from FNL's FAA-approved forecasts from the airport's master plan project.*
Sources: FAA TAF, pulled January and March 2019; FAA ACAIS, July 2019;
"Northern Colorado Regional Airport Master Plan," 2018

7.4.1. Enplanements Forecast Methodologies

Four different forecasting methodologies were utilized to determine the most reliable forecast estimates for the 14 commercial service airports. For the enplanement forecasts, a single preferred methodology was selected for each airport as there are varying conditions that impact the anticipated growth in activity. This is needed for airports such as FNL and TEX where air service has been inconsistent, however, for planning purposes it is assumed that the level of airline service will likely grow in the future. At FNL, Allegiant Airlines announced in September 2019 that they will return service to the airport in November, however that resumption of service has been postponed until at least January 2020 due to lack of air traffic control services at the airport before that time. TEX was impacted by the discontinuation of service by Great Lakes Airlines and has been served by Denver Air Connection since May 2019. It is anticipated that both airports will return to more normal levels of service than have been experienced in the past.

The forecast methodologies employed for enplanements in this section are described below.

7.4.1.1. Population Growth Rate by County

This method examines the direct relationship between enplanement activity and the population of the county in which the airport is located. Population growth rates were developed using data from Woods and Poole Economics county data and applied to the airport's CASP baseline for 2018 enplanements. This method assumes that the enplanement activity will reflect the county's population growth rate through the planning period.

7.4.1.2. Historical Terminal Area Forecast

Historical TAF data for enplanements was gathered for each airport spanning the past 5 years. Annual growth rates were determined from historic TAF data and then applied to the airport's CASP baseline for 2018 enplanements. Due to discontinued or infrequent enplanement activity occurring at some airports, the most recent 5-year period with consistent commercial service was used for the following airports:

- San Luis Valley Regional (ALS) – 2009 to 2013
- Northern Colorado Regional (FNL) – 2008 to 2012
- Telluride Regional (TEX) – 2009 to 2013

7.4.1.3. Airport Master Plans Growth Rate

This methodology utilizes the growth rates from the preferred enplanement forecasts from the most recent master plan for each airport. Extracted growth rates are applied to the airport's baseline 2018 enplanements used in the CASP to develop the enplanement estimates for the next 20 years.

7.4.1.4. Growth Rate by Service Type

Growth rates from the *FAA Aerospace Forecasts 2019-2039* for mainline and regional carriers were applied to the airport based on the type of service the airport currently has and what kind of service is likely over the near term based on current airline trends. Airports were assigned the following growth rates by type of service currently facilitated or expected to be operating at the airport during the 20-year planning period:

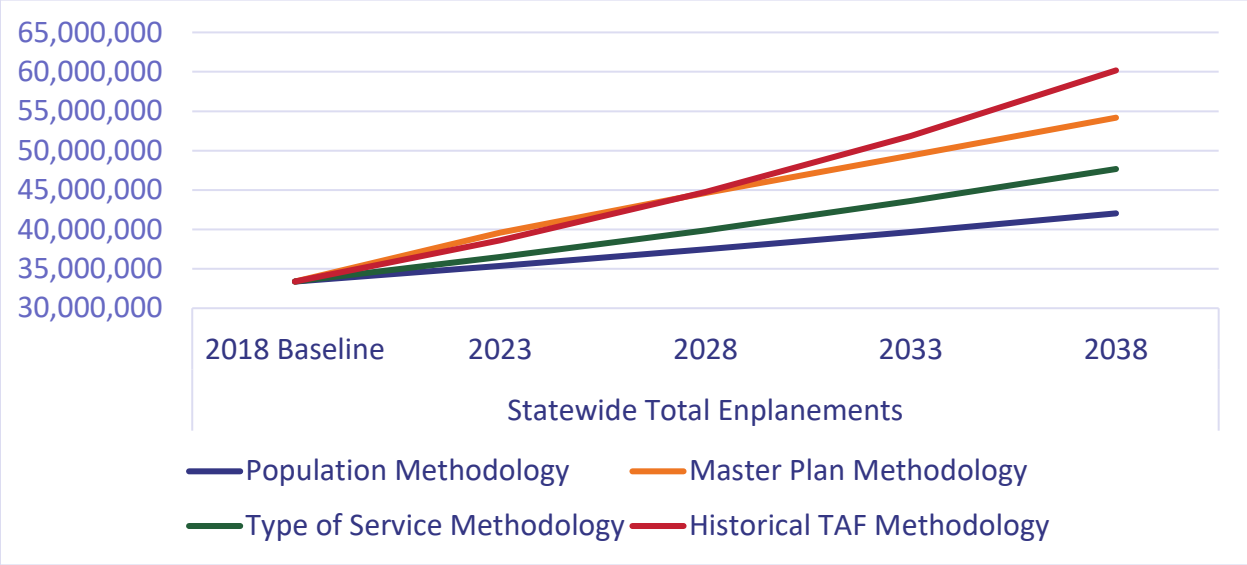
- Predominantly Mainline Service: 1.8% CAGR was applied
- Mix of Mainline and Regional Service: 1.7% CAGR was applied

- Only Regional Service: 1.6% CAGR was applied

7.4.2. Enplanements Forecast Results

Figure 7.17 demonstrates the enplanement projections for all four methodologies through 2038 utilizing the baseline enplanement data for 2018.

Figure 7.17. Enplanements Forecast by Methodology, 2018-2038



Sources: FAA TAF, pulled March 2019; FAA ACAIS, pulled July 2019; Kimley-Horn, 2019; "Northern Colorado Regional Airport Master Plan," 2018

System-wide, all four methodologies project growth throughout the planning horizon. The historical TAF methodology predicts enplanements to exceed 60 million in 2038. Remaining methodologies anticipate a more modest growth in the next 20 years. The master plan and service type methodology anticipate enplanements to approach 48 million and 55 million by 2038, respectively. The population methodology project enplanements to surpass 42 million over the next 20 years.

Table 7.19 demonstrates the results of the population and historical TAF methodologies applied to the CASP baseline for 2018. System-wide, the historical TAF methodology predicts the fastest rates of growth through the planning horizon with an anticipated 2.99 percent increase annually. The population growth rate by county methodology anticipates a slower rate of growth 1.16 percent CAGR for system-wide enplanements.

Airports estimated to experience the largest growth rate using the historical TAF methodologies are FNL at 7.30 percent and ASE at 3.87 percent annually. These two airports are anticipated to gain over 10,400 and 327,000 enplanements, respectively, over the 20-year planning period. The airport that is projected to gain the highest number of enplanements over the 20-year planning period is DEN with more than 25.6 million additional enplanements. Several airports are estimated to experience a decline in enplanements using the historical TAF methodology: Durango La-Plata County (DRO) at a 0.99 percent decline, Eagle County Regional (EGE) at a 1.56 percent decline, Pueblo Memorial (PUB) at 11.28 percent annual decline, and Telluride Regional (TEX) at a 1.87 percent decline.

Airports are expected to realize slower growth rates utilizing the population methodology over the next 20 years. TEX and Yampa Valley (HDN) are anticipated to experience the fastest growth at 2.17 and 1.80 percent CAGR, respectively. DEN is projected to add over 8 million more enplanements in 2038 at an annual rate of 1.15 percent. It is likely DEN's updated 2020 forecasts for the period 2033 and 2038 may increase substantially based on results from 2019 airline passenger traffic. Given the anticipated population growth in all of the counties in which commercial service airports operate in, there are no airports that are projected to experience a decline in enplanements in this methodology.

Table 7.19. Enplanements Forecasts - Population and Historical TAF Methodologies (Rounded to nearest 10)

Associated City	Airport Name	FAA ID	CASP 2018 Baseline Enplanements	Projections									
				2023		2028		2033		2038		CAGR 2018-2038	
				Population	Historical TAF	Population	Historical TAF	Population	Historical TAF	Population	Historical TAF	Population	Historical TAF
Alamosa	San Luis Valley Regional	ALS	7,030	7,420	7,780	7,840	8,600	8,270	9,510	8,730	10,520	1.09%	2.03%
Aspen	Aspen-Pitkin County	ASE	287,900	295,220	348,160	302,720	421,030	310,410	509,150	318,300	615,720	0.50%	3.87%
Colorado Springs	Colorado Springs Municipal	COS	846,080	907,970	929,060	974,400	1,020,190	1,045,690	1,120,260	1,122,190	1,230,140	1.42%	1.89%
Cortez	Cortez Municipal	CEZ	7,720	8,350	7,920	9,040	8,120	9,780	8,330	10,580	8,550	1.59%	0.51%
Denver	Denver International	DEN	31,363,570	33,201,770	36,404,460	35,147,710	42,255,540	37,207,690	49,047,030	39,388,410	56,930,080	1.15%	3.03%
Durango	Durango-La Plata County	DRO	189,230	204,870	180,050	221,820	171,310	240,160	163,010	260,030	155,100	1.60%	-0.99%
Eagle	Eagle County Regional	EGE	175,950	190,110	162,620	205,420	150,300	221,950	138,910	239,820	128,390	1.56%	-1.56%
Fort Collins/ Loveland	Northern Colorado Regional	FNL	3,390	3,650	4,820	3,940	6,850	4,240	9,740	4,570	13,850	1.50%	7.30%
Grand Junction	Grand Junction Regional	GJT	222,230	238,780	239,670	256,550	258,480	275,640	278,760	296,160	300,640	1.45%	1.52%
Gunnison	Gunnison-Crested Butte Regional	GUC	36,480	38,010	38,600	39,610	40,830	41,280	43,200	43,010	45,710	0.83%	1.13%
Hayden	Yampa Valley	HDN	100,550	109,950	105,580	120,230	110,870	131,470	116,420	143,760	122,250	1.80%	0.98%
Montrose	Montrose Regional	MTJ	134,240	145,990	196,550	158,760	287,790	172,650	421,380	187,760	616,970	1.69%	7.92%
Pueblo	Pueblo Memorial	PUB	10,450	11,000	5,750	11,570	3,160	12,170	1,740	12,810	960	1.02%	-11.28%
Telluride	Telluride Regional	TEX	1,060	1,180	970	1,320	880	1,460	800	1,630	730	2.17%	-1.87%
Commercial Service Airports Total			**33,385,880**	**35,364,280**	**38,631,990**	**37,460,910**	**44,743,950**	**39,682,870**	**51,868,240**	**42,037,750**	**60,179,610**	**1.16%**	**2.99%**

Sources: Woods and Poole Economics, Inc., 2018; FAA TAF, pulled January and March 2019; FAA TAF, pulled July 2019; FAA ACAIS, July 2019; Kimley-Horn, 2019; "Northern Colorado Regional Airport Master Plan," 2018

Table 7.20 demonstrates the results of the airport master plan and service type methodologies applied to the CASP baseline for 2018 enplanements. System-wide enplanements are anticipated to grow under both methodologies over the next 20 years. The master plan and service type methodologies anticipate enplanements to increase at 2.45 and 1.80 percent, respectively. The number of enplanements is anticipated to exceed 54.1 million projected by the master plan methodology and 47.6 million projected by the service type methodology by 2038.

The service type methodology projects the COS, DEN, and FNL to experience the fastest growth rate in enplanements through the planning horizon. They are forecasted to grow at 1.80 percent annually and are anticipated to generate a combined total of 13.8 million additional enplanements by 2038. Through this methodology, all airports are anticipated to realize growth over the next 20 years.

The results of the master plan methodology are more tailored to each airport's projections. Under the airport master plan methodology, FNL and TEX are anticipated to experience the highest rates of growth at 17 percent and 10.25 percent annually. DEN is projected to add over 19.2 million enplanements by 2038 and is followed by COS with an additional 631,000 over the next 20 years.

Table 7.20. Enplanements Forecasts - Airport Master Plan and Service Type Methodologies (Rounded to nearest 10)

Associated City	Airport Name	FAA ID	CASP 2018 Baseline Enplanements	Projections									
				2023		2028		2033		2038		CAGR 2018-2038	
				Airport Master Plan	Service Type	Airport Master Plan	Service Type	Airport Master Plan	Service Type	Airport Master Plan	Service Type	Airport Master Plan	Service Type
Alamosa	San Luis Valley Regional	ALS	7,030	7,500	7,620	8,000	8,240	8,540	8,920	9,110	9,660	1.30%	1.60%
Aspen	Aspen-Pitkin County	ASE	287,900	314,650	313,220	343,870	340,770	375,820	370,730	410,730	403,340	1.79%	1.70%
Colorado Springs	Colorado Springs Municipal	COS	846,080	972,690	925,010	1,118,250	1,011,320	1,285,590	1,105,670	1,477,970	1,208,830	2.83%	1.80%
Cortez	Cortez Municipal	CEZ	7,720	8,540	8,360	9,450	9,050	10,450	9,800	11,560	10,610	2.04%	1.60%
***Denver**	Denver International	DEN	31,363,570	37,250,090	34,289,760	41,939,870	37,488,950	46,305,010	40,986,630	50,625,210	44,810,630	2.42%	1.80%
Durango	Durango-La Plata County	DRO	189,230	222,200	205,870	260,930	223,970	306,410	243,660	359,820	265,090	3.27%	1.70%
Eagle	Eagle County Regional	EGE	175,950	191,040	191,420	207,420	208,250	225,200	226,570	244,520	246,490	1.66%	1.70%
Fort Collins/Loveland	Northern Colorado Regional	FNL	3,390	48,430	3,700	56,830	4,050	66,680	4,430	78,250	4,840	17.00%	1.80%
Grand Junction	Grand Junction Regional	GJT	222,230	275,840	241,780	342,380	263,040	424,970	286,170	527,490	311,340	4.42%	1.70%
Gunnison	Gunnison-Crested Butte Regional	GUC	36,480	39,750	39,690	43,320	43,180	47,210	46,970	51,450	51,100	1.73%	1.70%
Hayden	Yampa Valley	HDN	100,550	115,520	109,390	132,710	119,010	152,470	129,480	175,160	140,860	2.81%	1.70%
Montrose	Montrose Regional	MTJ	134,240	144,830	146,050	156,250	158,890	168,580	172,860	181,880	188,060	1.53%	1.70%
Pueblo	Pueblo Memorial	PUB	10,450	12,000	11,310	13,775	12,250	15,815	13,260	18,157	14,360	2.80%	1.60%
Telluride	Telluride Regional	TEX	1,060	1,730	1,150	2,810	1,240	4,580	1,350	7,470	1,460	10.25%	1.60%
Commercial Service Airports Total			**33,385,880**	**39,604,810**	**36,494,330**	**44,635,870**	**39,892,210**	**49,397,310**	**43,606,500**	**54,178,770**	**47,666,670**	**2.45%**	**1.80%**

**Notes: The forecasts for DEN were based on early 2018 data and an update was underway as of March 2020.*

Sources: FAA TAF, pulled January and March 2019; FAA ACAIS, July 2019; various Airport master plans, pulled between 2018-2019; Kimley-Horn, 2019; "Northern Colorado Regional Airport Master Plan," 2018

Due to the inconsistent nature of enplanement activity at some airports, it was deemed necessary to choose an enplanement forecasting methodology for each commercial service airport that would accurately take into account these inconsistencies. **Table 7.21** presents the preferred forecasting methodology that was selected for each airport and the results of the methodology. The system-wide enplanement numbers were taken by summing the results of the preferred methodologies.

FNL is anticipated to experience the highest growth in enplanements using the preferred methodology of the master plan growth rate, with a forecast rate of 17 percent annually. At that rate, FNL is projected to realize over 74,000 additional enplanements over the next 20 years. DEN is anticipated to experience the highest number of enplanements over the planning period at a rate of 2.42 percent and may experience over 19.2 million more enplanements by 2038. The slowest growth in enplanements is anticipated to occur at ALS at 1.30 percent with only 2,080 additional enplanements by 2038. The total number of enplanements for commercial service airports are projected to surpass 53.5 million by 2038 and grow at a rate of 2.39 percent annually.

Table 7.21. Preferred Enplanement Forecast Methodologies per Airport, 2018-2038

Associated City	Airport Name	FAA ID	Preferred Forecast Methodology	CASP 2018 Baseline Enplanements	2023	2028	2033	2038	CAGR 2018-2038
Alamosa	San Luis Valley Regional	ALS	Master Plan	7,030	7,500	8,000	8,540	9,110	1.30%
Aspen	Aspen-Pitkin County	ASE	Service Type	287,900	313,220	340,770	370,730	403,340	1.70%
Colorado Springs	Colorado Springs Municipal	COS	Service Type	846,080	925,010	1,011,320	1,105,670	1,208,830	1.80%
Cortez	Cortez Municipal	CEZ	Service Type	7,720	8,360	9,050	9,800	10,610	1.60%
****Denver**	Denver International	DEN	Master Plan	31,363,570	37,250,090	41,939,870	46,305,010	50,625,210	2.42%
Durango	Durango-La Plata County	DRO	Service Type	189,230	205,870	223,970	243,660	265,090	1.70%
Eagle	Eagle County Regional	EGE	Master Plan	175,950	191,040	207,420	225,200	244,520	1.66%
Fort Collins/Loveland	Northern Colorado Regional	FNL	Master Plan	3,390	48,430	56,830	66,680	78,250	17.00%
Grand Junction	Grand Junction Regional	GJT	Service Type	222,230	241,780	263,040	286,170	311,340	1.70%
Gunnison	Gunnison-Crested Butte Regional	GUC	Master Plan	36,480	39,690	43,180	46,970	51,100	1.70%
Hayden	Yampa Valley	HDN	Service Type	100,550	115,520	132,710	152,470	175,160	2.81%
Montrose	Montrose Regional	MTJ	Service Type	134,240	146,050	158,890	172,860	188,060	1.70%
Pueblo	Pueblo Memorial	PUB	Service Type	10,450	11,310	12,250	13,260	14,360	1.60%
***Telluride**	Telluride Regional	TEX	Service Type	1,060	1,730	2,810	4,580	7,470	10.26%
Commercial Service Airports Total				**33,385,880**	**39,505,600**	**44,410,110**	**49,011,600**	**53,592,450**	**2.39%**

**Note: Due to changes in commercial service activity at TEX, 2019 enplanements from two airlines have substantially increased enplanements to approximately 4,500.*
Forecasts for TEX utilize 2018 data and may not reflect potential impacts these changes may have on future enplanement activity.
***Note: The forecasts for DEN were based on early 2018 data and an update was underway as of March 2020.*
Sources: FAA TAF, pulled January and March 2019; FAA ACAIS, pulled July 2019; various Airport master plans, pulled between 2018-2019; Kimley-Horn, 2019; "Northern Colorado Regional Airport Master Plan," 2018

7.5. Based Aircraft Forecast

The National Based Aircraft Inventory Program, most commonly known as BasedAircraft.com, is an online based aircraft system for all nonprimary airports in the National Plan of Integrated Airport Systems (NPIAS). Airport managers submit their based aircraft inventories to the website which are submitted for verification to the 5010 Inspection data. The FAA subsequently uses based aircraft inventory data from this source as an indicator to determine NPIAS eligibility, distribute federal funds, and to finalize necessary improvements system-wide. Other Primary airports and those not included in the NPIAS must rely on other sources for based aircraft data.

Due to this, based aircraft data were compiled from different sources to verify outlier data against multiple reports. Based aircraft inventory data from each airport were obtained from the following sources:

- FAA National Based Aircraft Inventory Program (BasedAircraft.com)
- FAA 5010-1 Master Record
- FAA TAF (pulled March 2019)
- 2018 Inventory & Data Form

These data were compared, however, through coordination with the FAA and CDOT Division of Aeronautics. A 2018 baseline for the CASP was selected based on the following criteria:

Primary Commercial Service and non-NPIAS GA Airports:

- 2018 Inventory & Data Form based aircraft data were used for these airports.
- If 2018 Inventory & Data Form based aircraft information was not available, the airport's FAA 5010-1 Master Record was used instead.

Nonprimary Commercial Service and GA NPIAS Airports:

- FAA National Based Aircraft Inventory data were used for these airports.

Table 7.22 displays based aircraft by source and the final 2018 baseline used as the foundation for all CASP based aircraft forecasts through the planning horizon. From the sources that are available to represent system-wide based aircraft totals, airport-reported based aircraft comprise the highest count at 5,208, while the 5010 records report the smallest number at 4,613.

Table 7.22. 2018 Based Aircraft Inventory by Source

Associated City	Airport Name	FAA ID	FAA 5010 Master Record Based Aircraft	FAA TAF Based Aircraft	2018 Inventory & Data Form	FAA National Based Aircraft Inventory	FAA National Based Aircraft - Date of Last Edit	FAA National Based Aircraft - Date Confirmed	Preferred Source	CASP 2018 Baseline
Commercial Service										
Alamosa	San Luis Valley Regional	ALS	38	39	38	38	12/28/2017	Not Provided	National Based Aircraft Registry	38
Aspen	Aspen-Pitkin County	ASE	95	105	89	No data	No data	No data	2018 Inventory & Data Form	89
Colorado Springs	Colorado Springs Municipal	COS	231	247	231	No data	No data	No data	2018 Inventory & Data Form	231
Cortez	Cortez Municipal	CEZ	36	36	31	27	2/19/2019	2/19/2019	National Based Aircraft Registry	27
Denver	Denver International	DEN	2	2	2	No data	No data	No data	2018 Inventory & Data Form	2
Durango	Durango-La Plata County	DRO	63	70	63	No data	No data	No data	2018 Inventory & Data Form	63
Eagle	Eagle County Regional	EGE	89	93	91	No data	No data	No data	2018 Inventory & Data Form	91
Fort Collins/Loveland	Northern Colorado Regional	FNL	255	255	255	241	12/19/2018	12/28/2017	National Based Aircraft Registry	241
Grand Junction	Grand Junction Regional	GJT	125	114	126	No data	No data	No data	2018 Inventory & Data Form	126
Gunnison	Gunnison-Crested Butte Regional	GUC	25	25	31	No data	No data	No data	2018 Inventory & Data Form	31
Hayden	Yampa Valley	HDN	9	7	12	No data	No data	No data	2018 Inventory & Data Form	12
Montrose	Montrose Regional	MTJ	81	78	81	No data	No data	No data	2018 Inventory & Data Form	81
Pueblo	Pueblo Memorial	PUB	132	136	129	124	12/7/2018	12/7/2018	National Based Aircraft Registry	124
Telluride	Telluride Regional	TEX	35	35	44	27	2/9/2017	2/1/2011	National Based Aircraft Registry	27
General Aviation										
Akron	Colorado Plains Regional	AKO	8	8	14	7	Not Provided	Not Provided	National Based Aircraft Registry	7
Blanca	Blanca	05V	0	No data	0	No data	No data	No data	2018 Inventory & Data Form	0
Boulder	Boulder Municipal	BDU	116	117	116	48	5/7/2010	11/8/2011	National Based Aircraft Registry	48
Brush	Brush Municipal	7V5	8	No data	5	No data	No data	No data	2018 Inventory & Data Form	5
Buena Vista	Central Colorado Regional	AEJ	12	13	4	2	4/17/2008	Not Provided	National Based Aircraft Registry	2
Burlington	Kit Carson County	ITR	19	19	23	20	1/24/2019	1/24/2019	National Based Aircraft Registry	20
Canon City	Fremont County	1V6	87	93	81	76	4/24/2018	4/24/2018	National Based Aircraft Registry	76
Center	Leach	1V8	5	No data	4	No data	No data	No data	2018 Inventory & Data Form	4
Colorado Springs	Meadow Lake	FLY	420	420	450	403	12/31/2018	12/31/2018	National Based Aircraft Registry	403
Craig	Craig-Moffat	CAG	24	24	25	20	11/29/2017	11/29/2017	National Based Aircraft Registry	20
Creede	Mineral County Memorial	C24	3	No data	10	No data	No data	No data	2018 Inventory & Data Form	10
Del Norte	Astronaut Kent Rominger	RCV	32	No data	39	No data	No data	No data	2018 Inventory & Data Form	39
Delta	Blake Field	AJZ	48	42	65	46	7/16/2018	7/16/2018	National Based Aircraft Registry	46
Denver	Centennial	APA	522	803	880	878	12/21/2018	12/21/2018	National Based Aircraft Registry	878
Denver	Colorado Air and Space Port	CFO	393	399	434	353	8/27/2018	5/22/2017	National Based Aircraft Registry	353
Denver	Rocky Mountain Metropolitan	BJC	425	432	425	449	1/6/2019	1/18/2018	National Based Aircraft Registry	449
Eads	Eads Municipal	9V7	4	No data	9	No data	No data	No data	2018 Inventory & Data Form	9
Erie	Erie Municipal	EIK	175	175	207	138	2/8/2017	2/8/2017	National Based Aircraft Registry	138
Fort Morgan	Fort Morgan Municipal	FMM	33	33	32	31	9/24/2018	9/26/2017	National Based Aircraft Registry	31

Associated City	Airport Name	FAA ID	FAA 5010 Master Record Based Aircraft	FAA TAF Based Aircraft	2018 Inventory & Data Form	FAA National Based Aircraft Inventory	FAA National Based Aircraft - Date of Last Edit	FAA National Based Aircraft - Date Confirmed	Preferred Source	CASP 2018 Baseline
Glenwood Springs	Glenwood Springs Municipal	GWS	69	No data	69	No data	No data	No data	2018 Inventory & Data Form	69
Granby	Granby-Grand County	GNB	21	21	24	15	7/5/2016	10/25/2017	National Based Aircraft Registry	15
Greeley	Greeley-Weld County	GXY	201	202	201	137	2/8/2019	1/22/2009	National Based Aircraft Registry	137
Haxtun	Haxtun Municipal	17V	1	No data	1	No data	No data	No data	2018 Inventory & Data Form	1
Holly	Holly	K08	5	No data	1	No data	No data	No data	2018 Inventory & Data Form	1
Holyoke	Holyoke	HEQ	9	9	15	9	6/12/2017	Not Provided	National Based Aircraft Registry	9
Julesburg	Julesburg Municipal	7V8	10	No data	5	No data	No data	No data	2018 Inventory & Data Form	5
Kremmling	Mc Elroy Airfield	20V	22	22	22	15	7/1/2008	7/1/2008	National Based Aircraft Registry	15
La Junta	La Junta Municipal	LHX	13	13	23	10	5/15/2017	4/15/2008	National Based Aircraft Registry	10
La Veta	Cuchara Valley	07V	2	No data	2	No data	No data	No data	2018 Inventory & Data Form	2
Lamar	Lamar Municipal	LAA	22	22	28	27	12/15/2018	11/28/2018	National Based Aircraft Registry	27
Las Animas	Las Animas-Bent County	7V9	9	No data	11	No data	No data	No data	2018 Inventory & Data Form	11
Leadville	Lake County	LXV	5	5	5	5	10/25/2017	12/30/2015	National Based Aircraft Registry	5
Limon	Limon Municipal	LIC	23	23	22	20	2/23/2017	1/10/2018	National Based Aircraft Registry	20
Longmont	Vance Brand	LMO	300	300	294	274	12/4/2017	12/4/2017	National Based Aircraft Registry	274
Meeker	Meeker/Coulter Field	EEO	11	11	10	10	10/30/2017	8/9/2013	National Based Aircraft Registry	10
Monte Vista	Monte Vista Municipal	MVI	15	15	15	15	6/26/2008	6/26/2008	National Based Aircraft Registry	15
Nucla	Hopkins Field	AIB	10	10	10	10	9/17/2013	9/17/2013	National Based Aircraft Registry	10
Pagosa Springs	Stevens Field	PSO	36	32	40	40	5/24/2018	5/24/2018	National Based Aircraft Registry	40
Paonia	North Fork Valley	7V2	23	No data	20	No data	No data	No data	2018 Inventory & Data Form	20
Rangely	Rangely	4V0	16	16	19	13	Not Provided	Not Provided	National Based Aircraft Registry	13
Rifle	Rifle Garfield County	RIL	48	50	48	17	9/12/2008	9/12/2008	National Based Aircraft Registry	17
Saguache	Saguache Municipal	04V	0	No data	0	No data	No data	No data	2018 Inventory & Data Form	0
Salida	Harriet Alexander Field	ANK	27	27	41	15	9/7/2016	3/23/2010	National Based Aircraft Registry	15
Springfield	Springfield Municipal	8V7	10	No data	10	No data	No data	No data	2018 Inventory & Data Form	10
Steamboat Springs	Steamboat Springs	SBS	51	53	86	59	12/29/2017	12/29/2017	National Based Aircraft Registry	59
Sterling	Sterling Municipal	STK	33	34	33	30	6/22/2017	6/22/2017	National Based Aircraft Registry	30
Trinidad	Perry Stokes	TAD	11	11	20	1	Not Provided	10/21/2015	National Based Aircraft Registry	1
Walden	Walden-Jackson County	33V	10	No data	3	No data	No data	No data	2018 Inventory & Data Form	3
Walsenburg	Spanish Peaks Airfield	4V1	10	10	19	18	1/3/2019	1/3/2019	National Based Aircraft Registry	18
Westcliffe	Silver West	C08	11	No data	24	No data	No data	No data	2018 Inventory & Data Form	24
Wray	Wray Municipal	2V5	16	16	27	14	5/17/2016	Not Provided	National Based Aircraft Registry	14
Yuma	Yuma Municipal	2V6	13	13	14	12	12/26/2012	12/26/2012	National Based Aircraft Registry	12
	Commercial Service Airports Total		**1,216**	**1,242**	**1,223**	**457**				**1,183**
	General Aviation Airports Total		**3,397**	**3,493**	**3,985**	**3,237**				**3,450**
	System-wide Total		**4,613**	**4,735**	**5,208**	**3,694**				**4,633**

Sources: 2018 Inventory & Data Form; FAA Master Record, 2019; FAA TAF, pulled March 2019; FAA National Based Aircraft Inventory, pulled February 2019

7.5.1. Based Aircraft Forecast Methodologies

Three different forecasting methodologies were utilized to determine the most reliable forecast estimates for based aircraft. Each methodology was applied to the 2018 baseline data previously established for the CASP. Explanation of methodologies used for CASP based aircraft forecasts are below.

7.5.1.1. Population Growth by County

This method examines the direct relationship between based aircraft and the population of the county in which the airport operates. Similar to the enplanements forecasts, population growth rates were developed using data from Woods and Poole Economics county data and applied to the airport's 2018 baseline for based aircraft in the CASP. This method assumes that the based aircraft changes will reflect the county's population growth rate through the planning period. To note, multiple airports may operate within the same county, these airports were given the same county growth rates.

7.5.1.2. National Active Fleet

This approach is a top down market share methodology that assumes a relationship between each airport's share or ratio of the system's total based aircraft fleet through the planning horizon. The FAA's projection for growth in the national GA active fleet was applied to Colorado's statewide based aircraft for 2018 to develop the system-wide totals for the 5, 10, 15, and 20-year intervals. Each airport's share of the statewide total for 2018 was then applied to the system-wide forecast of future based aircraft for each interval. The airport's proportional share of the system's total based aircraft fleet is assumed to remain constant over the 20-year period.

7.5.1.3. Airport Fleet Mix Growth Rate

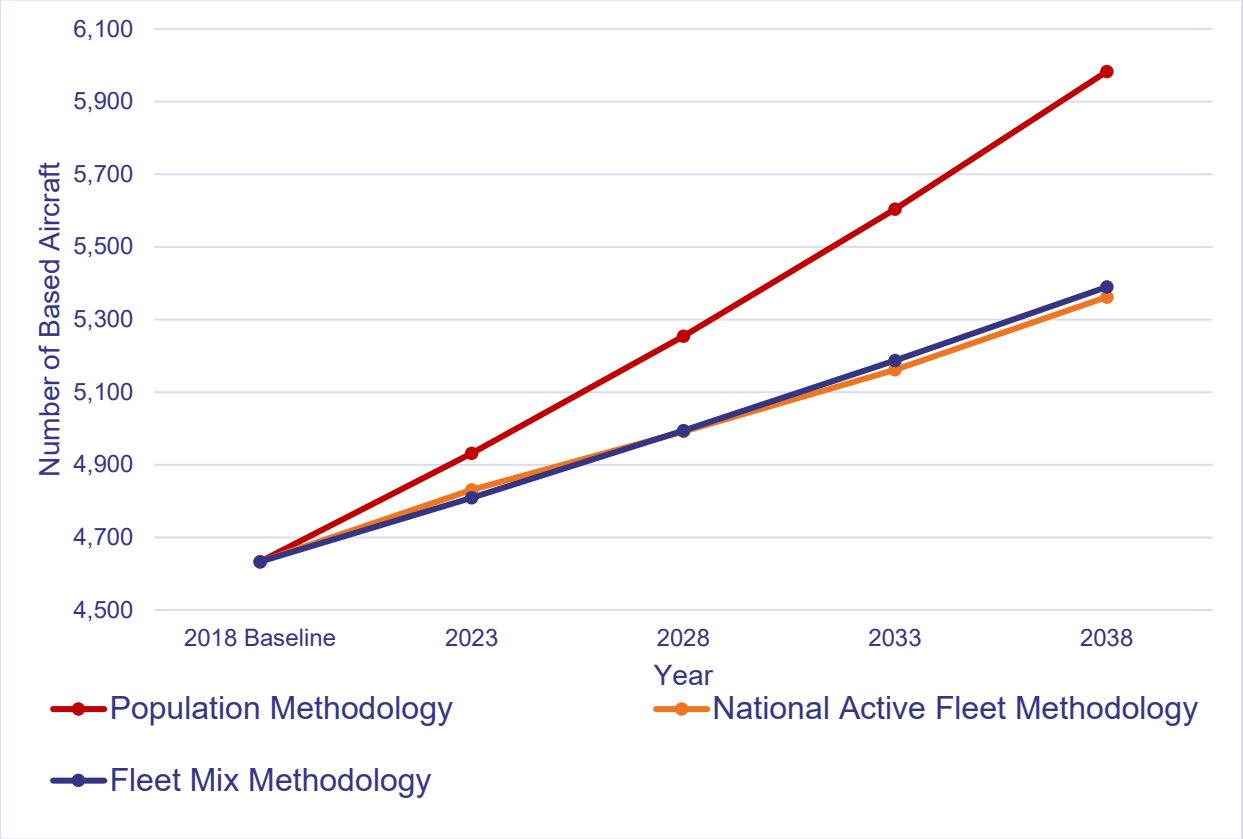
This methodology focuses on each airport's current based aircraft fleet mix to determine future growth rates of total based aircraft. Growth rates derived from the *FAA Aerospace Forecasts 2019-2039* by aircraft type were evaluated and considered to develop a blended growth rate based on each airport's 2018 airport-reported based aircraft fleet mix. The blended growth rates that were developed and applied to airports to develop future based aircraft forecasts are as follows:

- If the airport's percent of single-engine based aircraft is 90 percent or higher, then a 0.2 percent CAGR was applied.
- If the airport's percent of single-engine based aircraft is between 85 and 90 percent, and the airport has any multi-engine based aircraft, then a 0.5 percent CAGR was applied.
- If the airport's percent of single-engine based aircraft is less than 85 percent and if they have any helicopter and/or jet/turboprop based aircraft, then a 1.0 percent CAGR was applied.

7.5.2. Based Aircraft Forecasts Results

Figure 7.18 illustrates the results of the three methodologies and statewide based aircraft through 2038. The population growth rate methodology predicts the fastest growth rate, compared to the very similar results for both the national active fleet and fleet mix growth rate approaches.

Figure 7.18. Based Aircraft Forecast Comparison, 2018-2038



Sources: Woods and Poole Economics, Inc., 2018; FAA Aerospace Forecasts, 2019-2039; 2018 Inventory & Data Form; Kimley-Horn, 2019

Results from the three different forecasting methodologies were compared to select the preferred methodology that best represents future estimates of based aircraft system-wide. The airport fleet mix growth rate was determined as the preferred methodology for based aircraft projections. This approach is more closely tailored to each airport's fleet mix makeup and provides a more accurate representation of how individual airports may likely grow based on national growth projections of individual types of based aircraft. This preferred methodology results in a 0.76 percent annual rate using the FAA 2018 based aircraft data. The largest growth rates (1.0 percent) in this methodology are anticipated to occur at commercial service airports, estimating an additional 260 based aircraft in 2038. Under the preferred airport fleet mix methodology, GA airports are estimated to realize an additional 496 based aircraft over the 20-year planning horizon.

Table 7.23 shows the application of the three forecast methodologies to the FAA 2018 based aircraft data, the results of the preferred methodology is highlighted in light blue. All three based aircraft forecast methodologies show system-wide growth in based aircraft through the 20-year planning horizon, ranging from 0.73 percent from the National Active Fleet methodology to 1.29 percent from the population growth by county methodology. Depending on the methodology, between 729 and 1,350 additional based aircraft are anticipated in Colorado over the next 20 years.

Table 7.23. Based Aircraft Forecasts, 2018-2038

Associated City	Airport Name	FAA ID	CASP 2018 Based Aircraft	Projections														
				2023			2028			2033			2038			CAGR 2018-2038		
				Population (Pop.)	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix
Commercial Service																		
Alamosa	San Luis Valley Regional	ALS	38	40	40	40	42	41	42	45	42	44	47	44	46	1.09%	0.73%	1.00%
Aspen	Aspen-Pitkin County	ASE	89	91	93	94	94	96	98	96	99	103	98	103	109	0.50%	0.73%	1.00%
Colorado Springs	Colorado Springs Municipal	COS	231	248	241	243	267	249	255	286	257	268	308	267	282	1.44%	0.73%	1.00%
Cortez	Cortez Municipal	CEZ	27	29	28	28	32	29	30	34	30	31	37	31	33	1.59%	0.73%	1.00%
Denver	Denver International	DEN	2	2	2	2	2	2	2	2	2	2	2	2	2	1.03%	0.73%	0.00%
Durango	Durango-La Plata County	DRO	63	68	66	66	74	68	70	80	70	73	87	73	77	1.60%	0.73%	1.00%
Eagle	Eagle County Regional	EGE	91	98	95	96	106	98	101	115	101	106	124	105	111	1.56%	0.73%	1.00%
Fort Collins/ Loveland	Northern Colorado Regional	FNL	241	260	251	253	280	260	266	302	268	280	325	279	294	1.51%	0.73%	1.00%
Grand Junction	Grand Junction Regional	GJT	126	135	131	132	145	136	139	156	140	146	168	146	154	1.45%	0.73%	1.00%
Gunnison	Gunnison-Crested Butte Regional	GUC	31	32	32	33	34	33	34	35	35	36	37	36	38	0.83%	0.73%	1.00%
Hayden	Yampa Valley	HDN	12	13	13	13	14	13	13	16	13	14	17	14	15	1.80%	0.73%	1.00%
Montrose	Montrose Regional	MTJ	81	88	84	85	96	87	89	104	90	94	113	94	99	1.69%	0.73%	1.00%
Pueblo	Pueblo Memorial	PUB	124	130	129	130	137	134	137	144	138	144	152	144	151	1.02%	0.73%	1.00%
Telluride	Telluride Regional	TEX	27	30	28	28	33	29	30	37	30	31	42	31	33	2.17%	0.73%	1.00%
General Aviation																		
Akron	Colorado Plains Regional	AKO	7	7	7	7	7	8	7	7	8	7	7	8	7	0.08%	0.73%	0.20%
Blanca	Blanca	05V	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.16%	0.73%	0.00%
Boulder	Boulder Municipal	BDU	48	50	50	49	53	52	50	56	53	52	58	56	53	0.99%	0.73%	0.50%
Brush	Brush Municipal	7V5	5	5	5	5	6	5	5	6	6	5	6	6	5	1.18%	0.73%	0.20%
Buena Vista	Central Colorado Regional	AEJ	2	2	2	2	2	2	2	2	2	2	2	2	2	0.91%	0.73%	0.20%
Burlington	Kit Carson County	ITR	20	21	21	20	21	22	20	22	22	21	23	23	21	0.63%	0.73%	0.20%
Canon City	Fremont County	1V6	76	77	79	78	79	82	80	80	85	82	81	88	84	0.34%	0.73%	0.50%
Center	Leach	1V8	4	4	4	4	4	4	4	4	4	4	4	5	4	-0.16%	0.73%	0.20%
Colorado Springs	Meadow Lake	FLY	403	433	420	407	465	434	411	499	449	415	536	466	419	1.44%	0.73%	0.20%
Craig	Craig-Moffat	CAG	20	20	21	20	20	22	20	20	22	21	20	23	21	0.12%	0.73%	0.20%
Creede	Mineral County Memorial	C24	10	10	10	10	11	11	10	11	11	10	11	12	10	0.69%	0.73%	0.20%
Del Norte	Astronaut Kent Rominger	RCV	39	39	41	39	39	42	40	39	43	40	39	45	41	-0.02%	0.73%	0.20%
Delta	Blake Field	AJZ	46	48	48	46	50	50	47	52	51	47	55	53	48	0.87%	0.73%	0.20%
Denver	Centennial	APA	878	928	915	923	980	946	970	1,036	978	1,019	1,095	1,016	1,071	1.11%	0.73%	1.00%

Associated City	Airport Name	FAA ID	CASP 2018 Based Aircraft	Projections														
				2023			2028			2033			2038			CAGR 2018-2038		
				Population (Pop.)	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix
Denver	Colorado Air and Space Port	CFO	353	386	368	371	422	380	390	461	393	410	504	409	431	1.80%	0.73%	1.00%
Denver	Rocky Mountain Metropolitan	BJC	449	462	468	472	474	484	496	488	500	521	501	520	548	0.55%	0.73%	1.00%
Eads	Eads Municipal	9V7	9	9	9	9	8	10	9	8	10	9	8	10	9	-0.60%	0.73%	0.20%
Erie	Erie Municipal	EIK	138	159	144	139	183	149	141	211	154	142	244	160	144	2.88%	0.73%	0.20%
Fort Morgan	Fort Morgan Municipal	FMM	31	33	32	31	35	33	32	37	35	32	39	36	32	1.18%	0.73%	0.20%
Glenwood Springs	Glenwood Springs Municipal	GWS	69	75	72	71	83	74	73	90	77	74	99	80	76	1.81%	0.73%	0.50%
Granby	Granby-Grand County	GNB	15	16	16	15	18	16	16	19	17	16	20	17	17	1.57%	0.73%	0.50%
Greeley	Greeley-Weld County	GXY	137	158	143	144	182	148	151	210	153	159	242	159	167	2.88%	0.73%	1.00%
Haxtun	Haxtun Municipal	17V	1	1	1	1	1	1	1	1	1	1	1	1	1	-0.05%	0.73%	0.20%
Holly	Holly	K08	1	1	1	1	1	1	1	1	1	1	1	1	1	-0.13%	0.73%	0.20%
Holyoke	Holyoke	HEQ	9	9	9	9	9	10	9	9	10	9	9	10	9	-0.05%	0.73%	0.20%
Julesburg	Julesburg Municipal	7V8	5	5	5	5	5	5	5	5	6	5	5	6	5	-0.13%	0.73%	0.20%
Kremmling	Mc Elroy Airfield	20V	15	16	16	15	18	16	15	19	17	15	20	17	16	1.57%	0.73%	0.20%
La Junta	La Junta Municipal	LHX	10	10	10	10	10	11	10	9	11	10	9	12	10	-0.40%	0.73%	0.20%
La Veta	Cuchara Valley	07V	2	2	2	2	2	2	2	2	2	2	2	2	2	-0.32%	0.73%	0.20%
Lamar	Lamar Municipal	LAA	27	27	28	27	27	29	28	26	30	28	26	31	28	-0.13%	0.73%	0.20%
Las Animas	Las Animas-Bent County	7V9	11	11	11	11	11	12	11	11	12	11	11	13	11	-0.14%	0.73%	0.20%
Leadville	Lake County	LXV	5	5	5	5	5	5	5	6	6	5	6	6	5	0.72%	0.73%	0.20%
Limon	Limon Municipal	LIC	20	21	21	20	23	22	20	24	22	21	25	23	21	1.21%	0.73%	0.20%
Longmont	Vance Brand	LMO	274	288	286	277	302	295	280	318	305	282	334	317	285	0.99%	0.73%	0.20%
Meeker	Meeker/Coulter Field	EEO	10	10	10	10	10	11	10	11	11	10	11	12	10	0.39%	0.73%	0.20%
Monte Vista	Monte Vista Municipal	MVI	15	15	16	15	15	16	15	15	17	15	15	17	16	-0.02%	0.73%	0.20%
Nucla	Hopkins Field	AIB	10	11	10	10	12	11	10	13	11	10	14	12	10	1.69%	0.73%	0.20%
Pagosa Springs	Stevens Field	PSO	40	44	42	40	48	43	41	53	45	41	58	46	42	1.88%	0.73%	0.20%
Paonia	North Fork Valley	7V2	20	21	21	20	22	22	20	23	22	21	24	23	21	0.87%	0.73%	0.20%
Rangely	Rangely	4V0	13	13	14	13	14	14	13	14	14	13	14	15	14	0.39%	0.73%	0.20%
Rifle	Rifle Garfield County	RIL	17	19	18	18	20	18	19	22	19	20	24	20	21	1.81%	0.73%	1.00%
Saguache	Saguache Municipal	04V	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.16%	0.73%	0.00%
Salida	Harriet Alexander Field	ANK	15	16	16	16	16	16	17	17	17	17	18	17	18	0.91%	0.73%	1.00%
Springfield	Springfield Municipal	8V7	10	10	10	10	9	11	10	9	11	10	9	12	10	-0.74%	0.73%	0.20%
Steamboat Springs	Steamboat Springs	SBS	59	65	62	60	71	64	62	77	66	64	84	68	65	1.80%	0.73%	0.50%
Sterling	Sterling Municipal	STK	30	31	31	31	33	32	32	34	33	32	36	35	33	0.91%	0.73%	0.50%
Trinidad	Perry Stokes	TAD	1	1	1	1	1	1	1	1	1	1	1	1	1	-0.29%	0.73%	0.20%

Associated City	Airport Name	FAA ID	CASP 2018 Based Aircraft	Projections														
				2023			2028			2033			2038			CAGR 2018-2038		
				Population (Pop.)	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix	Pop.	National Active Fleet	Airport Fleet Mix
Walden	Walden-Jackson County	33V	3	3	3	3	3	3	3	3	3	3	3	3	3	-0.45%	0.73%	0.20%
Walsenburg	Spanish Peaks Airfield	4V1	18	18	19	19	17	19	20	17	20	21	17	21	22	-0.32%	0.73%	1.00%
Westcliffe	Silver West	C08	24	24	25	25	25	26	25	25	27	26	25	28	27	0.27%	0.73%	0.50%
Wray	Wray Municipal	2V5	14	14	15	14	14	15	14	15	16	14	15	16	15	0.32%	0.73%	0.20%
Yuma	Yuma Municipal	2V6	12	12	13	12	12	13	12	13	13	12	13	14	12	0.32%	0.73%	0.20%
Commercial Service Airports Total			**1,183**	**1,267**	**1,233**	**1,243**	**1,356**	**1,275**	**1,307**	**1,453**	**1,318**	**1,373**	**1,557**	**1,369**	**1,443**	**1.39%**	**0.73%**	**1.00%**
General Aviation Airports Total			**3,450**	**3,665**	**3,597**	**3,566**	**3,898**	**3,717**	**3,687**	**4,151**	**3,843**	**3,814**	**4,426**	**3,993**	**3,946**	**1.25%**	**0.73%**	**0.67%**
System-wide Total			**4,633**	**4,931**	**4,830**	**4,809**	**5,254**	**4,992**	**4,994**	**5,604**	**5,161**	**5,187**	**5,983**	**5,362**	**5,389**	**1.29%**	**0.73%**	**0.76%**

Note: Totals may not add due to rounding as growth rates are applied to whole numbers.

Sources: Woods and Poole Economics, Inc., 2018; FAA TAF, pulled March 2019; 2018 Inventory & Data Form; Kimley-Horn, 2019

7.6. Operations Forecast

This section analyzes the different categories of operations occurring and projected to occur system-wide. Forecasting projected annual operations assists in planning for and implementing facility improvements to support the different types of operations predicted to occur. Annual operations were broken down into separate categories and individually forecasted for analysis:

- General Aviation (GA)
- Military
- Commercial service

Annual operations in this section were compiled from different sources to verify outlier data against multiple reports. Operations for each airport were obtained from the following sources:

- FAA 5010-1 Master Record
- FAA TAF (pulled March 2019)
- 2018 Inventory & Data Form

After reviewing the data from the three sources and coordinating with FAA and CDOT Division of Aeronautics, it was determined that different sources would be used for NPIAS and non-NPIAS airports to determine the 2018 operations baseline for the CASP as follows:

NPIAS Airports

- FAA TAF operations were used for these airports.

Non-NPIAS Airports:

- Airport-reported responses to the 2018 Inventory & Data Form operations were used for these airports.

These data make up the CASP baseline data for 2018 for use in developing future operational activity projections. CASP baseline 2018 operations are rounded to the nearest ten in the following sections.

7.6.1. General Aviation Operations Forecast

GA operations are all operations that are not conducted by commercial service or military aircraft. GA operations do occur at commercial service airports and can take the form of services such as aerial application, flight training, emergency response, aerial firefighting, business or corporate flights, and personal recreational flying.

Three of Colorado's GA airports have air traffic control towers (ATCT) which record takeoffs and landings (total operations): Centennial Airport (APA), Rocky Mountain Metropolitan (BJC), and Colorado Air and Space Port (CFO). The remaining GA airports' annual operations do not have a formal system of recording their operations and may use different tactics to make these determinations such as, but not limited to: querying major operators or flight schools, completing estimates based on local knowledge, or determining the operations based on an average number of operations per based aircraft.

To note, operations data shown for commercial service airports in this section represent only GA operations and not commercial or military operations. For information regarding current and

forecasted estimates for commercial service operations, please refer to section **7.6.3 Commercial Operations**.

Table 7.24 displays the CASP's 2018 baseline for GA operations, the preferred source of the baseline numbers was derived for each airport, and the breakdown of total GA operations into local and itinerant GA operations. According to the FAA, local operations are "airport operations performed by an aircraft that remain in the local traffic pattern… and operations to or from the same airport within a designated practice area within a 20-mile radius of the airport" whereas itinerant operations are defined as "airport operations that land at an airport arrived from outside the airport area, or depart from an airport and leave the airport area".[7] Using the determinations previously presented, the 2018 total operations that are used as the baseline for the CASP are presented in the final column. For GA airports, APA has the highest number of annual GA operations with 335,530 GA operations in 2018. FNL leads the commercial service airports with the highest number of annual GA operations at 92,260. Unsurprisingly, GA airports contribute the largest share of total GA operations system-wide comprising over 1.22 million operations compared to commercial service airports with just over 340,000 GA operations.

[7] FAA *Glossary for the 2016 Terminal Area Forecast, 2016*

Table 7.24. 2018 GA Operations by Type by Source

Associated City	Airport Name	FAA ID	Local GA Operations	Itinerant GA Operations	Total GA Operations	Preferred Source	CASP 2018 Baseline
Commercial Service							
Alamosa	San Luis Valley Regional	ALS	924	3,044	3,968	FAA TAF	3,970
Aspen	Aspen-Pitkin County	ASE	4,662	16,022	20,684	FAA TAF	20,680
Colorado Springs	Colorado Springs Municipal	COS	35,406	32,804	68,210	FAA TAF	68,210
Cortez	Cortez Municipal	CEZ	3,000	5,500	8,500	FAA TAF	8,500
Denver	Denver International	DEN	0	4,150	4,150	FAA TAF	4,150
Durango	Durango-La Plata County	DRO	10,372	10,371	20,743	FAA TAF	20,740
Eagle	Eagle County Regional	EGE	5,802	17,800	23,602	FAA TAF	23,600
Fort Collins/ Loveland	Northern Colorado Regional	FNL	35,404	56,856	92,260	FAA TAF	92,260
Grand Junction	Grand Junction Regional	GJT	8,848	20,992	29,840	FAA TAF	29,840
Gunnison	Gunnison-Crested Butte Regional	GUC	734	4,931	5,665	FAA TAF	5,670
Hayden	Yampa Valley	HDN	2,024	3,518	5,542	FAA TAF	5,540
Montrose	Montrose Regional	MTJ	12,000	12,683	24,683	FAA TAF	24,680
Pueblo	Pueblo Memorial	PUB	6,308	16,644	22,952	FAA TAF	22,950
Telluride	Telluride Regional	TEX	0	9,370	9,370	FAA TAF	9,370
General Aviation							
Akron	Colorado Plains Regional	AKO	8,000	11,500	19,500	FAA TAF	19,500
Blanca	Blanca	05V	770	230	1,000	2018 Inventory & Data Form	1,000
Boulder	Boulder Municipal	BDU	43,932	7,426	51,358	FAA TAF	51,360
Brush	Brush Municipal	7V5	1,170	291	1,461	2018 Inventory & Data Form	1,460
Buena Vista	Central Colorado Regional	AEJ	3,893	5,970	9,863	FAA TAF	9,860
Burlington	Kit Carson County	ITR	3,200	4,713	7,913	FAA TAF	7,910

Associated City	Airport Name	FAA ID	Local GA Operations	Itinerant GA Operations	Total GA Operations	Preferred Source	CASP 2018 Baseline
Canon City	Fremont County	1V6	4,200	8,000	12,200	FAA TAF	12,200
Center	Leach	1V8	4	4	8	2018 Inventory & Data Form	830
Colorado Springs	Meadow Lake	FLY	33,522	12,492	46,014	FAA TAF	46,010
Craig	Craig-Moffat	CAG	9,053	2,947	12,000	FAA TAF	12,000
Creede	Mineral County Memorial	C24	720	719	1,439	2018 Inventory & Data Form	1,440
Del Norte	Astronaut Kent Rominger	RCV	4,380	1,095	5,475	2018 Inventory & Data Form	5,480
Delta	Blake Field	AJZ	1,455	1,455	2,910	FAA TAF	2,910
Denver	Centennial	APA	163,658	171,875	335,533	FAA TAF	335,530
Denver	Colorado Air and Space Port	CFO	44,253	32,838	77,091	FAA TAF	77,090
Denver	Rocky Mountain Metropolitan	BJC	93,272	74,138	167,410	FAA TAF	167,410
Eads	Eads Municipal	9V7	472	240	712	2018 Inventory & Data Form	710
Erie	Erie Municipal	EIK	31,200	20,800	52,000	FAA TAF	52,000
Fort Morgan	Fort Morgan Municipal	FMM	5,000	4,800	9,800	FAA TAF	9,800
Glenwood Springs	Glenwood Springs Municipal	GWS	17,600	4,420	22,020	2018 Inventory & Data Form	22,020
Granby	Granby-Grand County	GNB	1,980	620	2,600	FAA TAF	2,600
Greeley	Greeley-Weld County	GXY	75,245	47,976	123,221	FAA TAF	123,220
Haxtun	Haxtun Municipal	17V	30	60	90	2018 Inventory & Data Form	90
Holly	Holly	K08	740	345	1,085	2018 Inventory & Data Form	1,090
Holyoke	Holyoke	HEQ	5,500	3,000	8,500	FAA TAF	8,500

Associated City	Airport Name	FAA ID	Local GA Operations	Itinerant GA Operations	Total GA Operations	Preferred Source	CASP 2018 Baseline
Julesburg	Julesburg Municipal	7V8	300	12	312	2018 Inventory & Data Form	310
Kremmling	Mc Elroy Airfield	20V	533	1,298	1,831	FAA TAF	1,830
La Junta	La Junta Municipal	LHX	5,645	3,305	8,950	FAA TAF	8,950
La Veta	Cuchara Valley	07V	12	2	14	2018 Inventory & Data Form	10
Lamar	Lamar Municipal	LAA	1,913	1,276	3,189	FAA TAF	3,190
Las Animas	Las Animas-Bent County	7V9	624	208	832	2018 Inventory & Data Form	830
Leadville	Lake County	LXV	1,800	1,200	3,000	FAA TAF	3,000
Limon	Limon Municipal	LIC	2,965	2,965	5,930	FAA TAF	5,930
Longmont	Vance Brand	LMO	50,971	21,548	72,519	FAA TAF	72,520
Meeker	Meeker/Coulter Field	EEO	2,400	5,650	8,050	FAA TAF	8,050
Monte Vista	Monte Vista Municipal	MVI	3,584	2,416	6,000	FAA TAF	6,000
Nucla	Hopkins Field	AIB	1,600	2,530	4,130	FAA TAF	4,130
Pagosa Springs	Stevens Field	PSO	6,077	10,226	16,303	FAA TAF	16,300
Paonia	North Fork Valley	7V2	2,000	0	2,000	2018 Inventory & Data Form	2,000
Rangely	Rangely	4V0	42,000	5,100	47,100	FAA TAF	47,100
Rifle	Rifle Garfield County	RIL	4,760	9,771	14,531	FAA TAF	14,530
Saguache	Saguache Municipal	04V	65	7	72	2018 Inventory & Data Form	70
Salida	Harriet Alexander Field	ANK	1,383	2,582	3,965	FAA TAF	3,970
Springfield	Springfield Municipal	8V7	4,500	75	4,575	FAA TAF	4,580
Steamboat Springs	Steamboat Springs	SBS	9,377	1,725	11,102	FAA TAF	11,100
Sterling	Sterling Municipal	STK	408	1,730	2,138	FAA TAF	2,140
Trinidad	Perry Stokes	TAD	3,080	2,200	5,280	FAA TAF	5,280

Associated City	Airport Name	FAA ID	Local GA Operations	Itinerant GA Operations	Total GA Operations	Preferred Source	CASP 2018 Baseline
Walden	Walden-Jackson County	33V	439	658	1,097	2018 Inventory & Data Form	1,100
Walsenburg	Spanish Peaks Airfield	4V1	3,500	1,500	5,000	FAA TAF	5,000
Westcliffe	Silver West	C08	600	200	800	2018 Inventory & Data Form	800
Wray	Wray Municipal	2V5	6,862	7,738	14,600	FAA TAF	14,600
Yuma	Yuma Municipal	2V6	3,500	1,500	5,000	FAA TAF	5,000
	Commercial Service Airports Total		**125,484**	**214,685**	**340,169**		**340,170**
	General Aviation Airports Total		**714,876**	**505,472**	**1,220,348**		**1,220,350**
	System-wide Total		**840,360**	**720,157**	**1,560,517**		**1,560,520**

Sources: 2018 Inventory & Data Form; FAA TAF, pulled March 2019

Colorado is home to two large armed forces aviation training programs that are preparing the next generation of military pilots. The U.S. Air Force Academy, located in Colorado Springs, is one of four Military Academies in the U.S. and is critical to the nation's defense. The other training program is L3 Doss Aviation, located at PUB, which is a government-contracted flight school that has graduated more than 17,000 Air Force and Air Force Reserve Pilots since opening in 2006.

7.6.1.1. GA Operations Forecast Methodologies

To establish a consistent CASP baseline for GA operations some operations were recategorized to a more appropriate group. Some GA airports have limited and occasional operational activity that is classified as air carrier and/or air taxi/commuter. This service is not always traditional "commercial airline service" but is defined by FAA as "aircraft with seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less, carrying passengers or cargo for hire or compensation[8]" and classified as commercial service operations. Since this service is not regular, it was determined that for forecasting purposes at GA airports, any operations recorded as commercial service and/or air taxi/commuter would be combined with GA operations and reflected as such in the 2020 CASP.

Three different forecasting methodologies were utilized to determine the most reliable forecast estimates of GA operations for the CASP. Each methodology was applied to the 2018 GA operations CASP baseline for each airport. Explanations of methodologies used for CASP based aircraft forecasts are below:

Population Growth Rates by County

This method examines the direct relationship between operations and the population of the county that the airport resides in. Similar to previous sections, population growth rates were developed using data from Woods and Poole Economics county data and applied to the airport's 2018 FAA baseline for operations. This method assumes that the operations changes will reflect the county's population growth rate through the planning period. To note, multiple airports may operate within the same county, these airports were given the same county growth rates.

Employment Growth Rates by County

This method assumes a direct correlation exists between the airports' GA operations and the associated county's employment rates. This more closely ties changes in economic activity (employment in this case) to potential changes in total operations. Similar to prior socioeconomic forecast methodologies, county employment growth rates were developed using Woods and Poole Economics, Inc. data and applied to the airports within that county. It should be noted that multiple airports may operate within the same county; these airports were given the same county growth rates.

Airport Reference Code (ARC) Category Growth Rate

An airport's ARC is defined by the FAA as a "designation that signifies the airport's highest Runway Design Code (RDC)[9]," indicating the most demanding aircraft that may be able to operate safely on that runway and at the airport. While an airport may have a more demanding ARC and be utilized by smaller aircraft, larger aircraft typically do not use an airport with a smaller ARC such as an A-I which indicates an airport was designed to accommodate aircraft with an approach speed of less than 91 knots and with a tail height less than 20 feet and a wingspan less than 49 feet.

This forecast method utilizes each airport's ARC identified from airport-reported data and assigns a specific annual growth rate to their ARC designation. These growth rates, shown in **Table 7.25**, were

[8] FAA *Glossary for the 2016 Terminal Area Forecast, 2016*
[9] FAA Advisory Circular (AC) 150/5300-13A, Change 1, Airport Design

developed based on the FAA's projections of hours flown by aircraft, by type. Hours flown are an indicator of activity or operations by aircraft types nationwide. Since the majority of airports nationwide do not have an ATCT, forecasts of hours flown, especially by type of aircraft, are a better indicator of potential future activity than forecasts of operations from those that have an ATCT. The range of growth rates indicates that the FAA anticipates that activity by larger, more demanding aircraft, is expected to experience the most substantial growth, compared to activity or hours flown by smaller aircraft.

Table 7.25. CAGRs Based on ARC

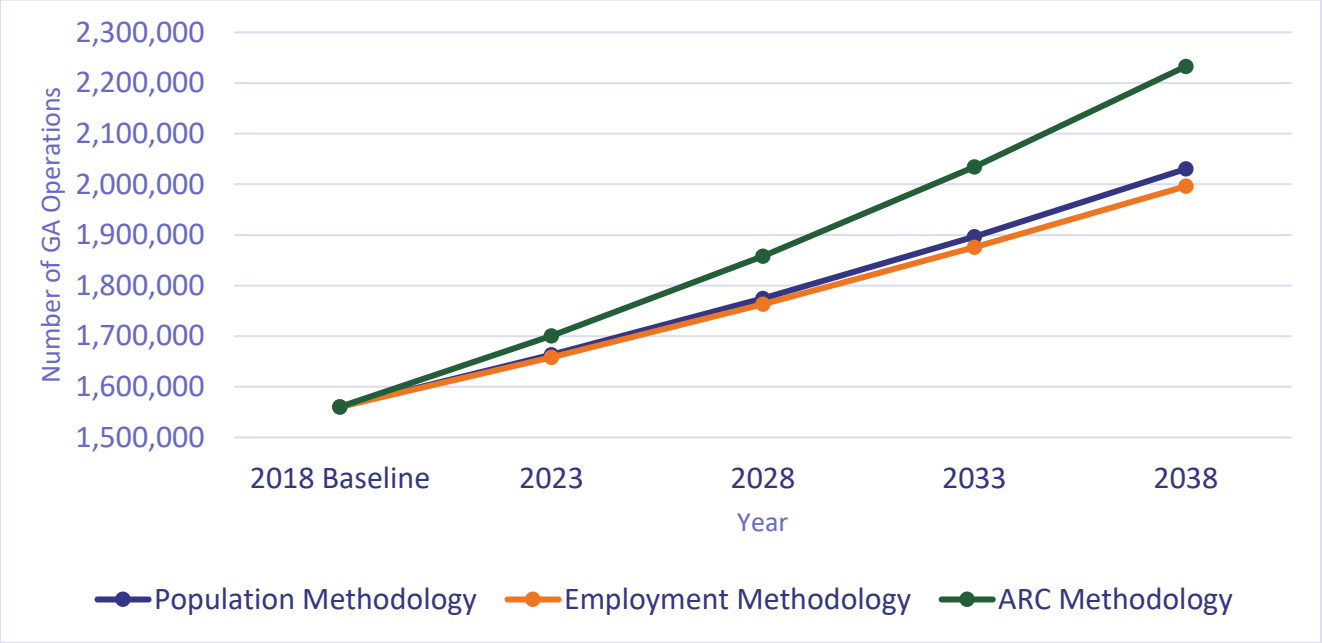
ARC	CAGR Applied to 2018 GA Ops Baseline
A-I through B-I	0.1%
B-II	0.4%
C-II	1.8%
C-III through C-IV	2.4%
D-I or Greater	2.8%

Sources: FAA Aerospace Forecasts, 2019-2039; Kimley-Horn, 2019

7.6.1.2. General Aviation Operations Forecast Results

Figure 7.19 displays the total number of GA operations forecasted in the three methodologies. All three projections of GA operations anticipate growth for the next 20 years ranging between 1.23 and 1.80 percent through 2038. This growth is anticipated to amount anywhere between 435,120 and 673,410 additional GA operations. The ARC methodology estimates the fastest growth among the three methodologies and anticipates operations to increase at a rate of 1.80 percent. The population and employment growth rate methodologies anticipate slightly slower growth to occur through the next 20 years. The ARC and population methodologies project GA operations may exceed 2 million by 2038.

Figure 7.19. GA Operations Forecasts by Methodology



Sources: FAA TAF, pulled March 2019; Kimley-Horn, 2019

Results from the three different forecasting methodologies were compared to select the preferred methodology that best represents future estimates in GA operations system-wide. The ARC growth rate was determined as the preferred methodology for GA operations projections through the planning horizon. This approach considers each airport's design and capability to serve specific types of aircraft and applies FAA growth rate predictions for aircraft by type. The ARC approach was deemed to provide a more accurate and reliable representation of GA operations for most airports.

Table 7.26 shows the application of the three methodologies applied to the 2018 baseline for GA operations developed for the CASP. ARC projections, highlighted in light blue, represent the fastest growth rate of all three methodologies and anticipate the number of system-wide GA operations to surpass the 2 million mark by 2033. Commercial service airports are forecasted to experience the fastest growth rate as the bulk of these airports represent higher ARC designations in the system. Commercial service airports are projected to grow at 2.50 percent annually, amounting to over 217,000 additional GA operations for a total of 557,590 GA operations in 2038. GA operations system-wide are estimated to gain over 672,000 more GA operations in 2038 at an annual rate of 1.80 percent. GA airports are projected to reach 1.67 million operations by 2038.

Table 7.26. GA Operations Forecasts by Methodology, 2018-2038

Associated City	Airport Name	FAA ID	CASP 2018 GA Operations Baseline	Projections														
				2023			2028			2033			2038			CAGR 2018-2038		
				Population (Pop.)	Employment (Employ.)	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC
Commercial Service																		
Alamosa	San Luis Valley Regional	ALS	3,970	4,190	4,090	4,340	4,420	4,220	4,740	4,670	4,360	5,190	4,920	4,490	5,670	1.80%	0.62%	1.09%
Aspen	Aspen-Pitkin County	ASE	20,680	21,210	21,200	27,260	21,750	21,720	27,260	22,300	22,260	31,300	22,870	22,810	35,930	2.80%	0.49%	0.50%
Colorado Springs	Colorado Springs Municipal	COS	68,210	73,270	72,500	86,470	78,700	77,060	86,470	84,530	81,900	97,350	90,800	87,050	109,610	2.40%	1.23%	1.44%
Cortez	Cortez Municipal	CEZ	8,500	9,200	8,990	8,850	9,950	9,510	8,850	10,760	10,060	9,020	11,640	10,640	9,210	0.40%	1.13%	1.59%
Denver	Denver International	DEN	4,150	4,370	4,410	5,470	4,600	4,680	5,470	4,840	4,980	6,280	5,090	5,290	7,210	2.80%	1.22%	1.03%
Durango	Durango-La Plata County	DRO	20,740	22,460	22,130	27,340	24,320	23,610	27,340	26,330	25,190	31,390	28,500	26,870	36,040	2.80%	1.30%	1.60%
Eagle	Eagle County Regional	EGE	23,600	25,500	25,360	31,110	27,560	27,260	31,110	29,770	29,300	35,710	32,170	31,480	41,000	2.80%	1.45%	1.56%
Fort Collins/ Loveland	Northern Colorado Regional	FNL	92,260	99,440	98,990	116,950	107,170	106,210	116,950	115,510	113,960	131,680	124,490	122,270	148,260	2.40%	1.42%	1.51%
Grand Junction	Grand Junction Regional	GJT	29,840	32,060	31,790	39,330	34,450	33,860	39,330	37,010	36,070	45,150	39,770	38,420	51,840	2.80%	1.27%	1.45%
Gunnison	Gunnison-Crested Butte Regional	GUC	5,670	5,900	6,000	7,180	6,150	6,350	7,180	6,410	6,730	8,090	6,680	7,120	9,100	2.40%	1.15%	0.83%
Hayden	Yampa Valley	HDN	5,540	6,060	5,800	7,030	6,630	6,070	7,030	7,250	6,360	7,910	7,920	6,660	8,910	2.40%	0.92%	1.80%
Montrose	Montrose Regional	MTJ	24,680	26,840	26,590	32,530	29,190	28,640	32,530	31,750	30,850	37,350	34,520	33,220	42,880	2.80%	1.50%	1.69%
Pueblo	Pueblo Memorial	PUB	22,950	24,150	23,970	29,100	25,410	25,020	29,100	26,730	26,130	32,760	28,120	27,280	36,880	2.40%	0.87%	1.02%
Telluride	Telluride Regional	TEX	9,370	10,430	9,990	11,880	11,620	10,640	11,880	12,940	11,340	13,370	14,410	12,080	15,060	2.40%	1.28%	2.17%

Associated City	Airport Name	FAA ID	CASP 2018 GA Operations Baseline	Projections														
				2023			2028			2033			2038			CAGR 2018-2038		
				Population (Pop.)	Employment (Employ.)	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC
General Aviation																		
Akron	Colorado Plains Regional	AKO	19,500	19,580	19,540	19,890	19,660	19,580	20,290	19,740	19,620	20,700	19,830	19,660	21,120	0.40%	0.04%	0.08%
Blanca	Blanca	05V	1,000	990	1,010	1,010	980	1,030	1,010	980	1,040	1,020	970	1,050	1,020	0.10%	0.25%	-0.16%
Boulder	Boulder Municipal	BDU	51,360	53,950	54,510	52,390	56,670	57,860	53,450	59,530	61,420	54,530	62,530	65,200	55,630	0.40%	1.20%	0.99%
Brush	Brush Municipal	7V5	1,460	1,550	1,510	1,470	1,640	1,560	1,480	1,740	1,610	1,480	1,850	1,670	1,490	0.10%	0.66%	1.18%
Buena Vista	Central Colorado Regional	AEJ	9,860	10,320	10,300	10,060	10,800	10,760	10,260	11,300	11,240	10,470	11,820	11,740	10,680	0.40%	0.87%	0.91%
Burlington	Kit Carson County	ITR	7,910	8,160	8,080	8,070	8,420	8,240	8,240	8,690	8,410	8,400	8,960	8,590	8,570	0.40%	0.41%	0.63%
Canon City	Fremont County	1V6	12,200	12,410	12,510	12,450	12,630	12,830	12,700	12,850	13,160	12,950	13,070	13,490	13,210	0.40%	0.51%	0.34%
Center	Leach	1V8	833	826	819	837	820	804	841	813	791	846	807	777	850	0.-16%	-0.35%	0.10%
Colorado Springs	Meadow Lake	FLY	46,010	49,430	48,910	46,240	53,090	51,980	46,480	57,030	55,250	46,710	61,250	58,720	46,940	0.16%	1.23%	1.44%
Craig	Craig-Moffat	CAG	12,000	12,070	12,420	12,240	12,140	12,850	12,490	12,210	13,300	12,740	12,280	13,770	13,000	0.40%	0.69%	0.12%
Creede	Mineral County Memorial	C24	1,440	1,490	1,440	1,450	1,540	1,440	1,450	1,600	1,450	1,460	1,650	1,450	1,470	0.10%	0.03%	0.69%
Del Norte	Astronaut Kent Rominger	RCV	5,470	5,470	5,410	5,590	5,470	5,350	5,700	5,460	5,280	5,810	5,460	5,220	5,930	0.40%	-0.24%	-0.02%
Delta	Blake Field	AJZ	2,910	3,040	3,080	2,970	3,170	3,250	3,030	3,310	3,440	3,090	3,460	3,640	3,150	0.40%	1.13%	0.87%
Denver	Centennial	APA	335,530	354,540	356,150	385,210	374,620	378,040	442,250	395,850	401,270	507,730	418,270	425,940	582,900	2.80%	1.20%	1.11%
Denver	Colorado Air and Space Port	CFO	77,090	84,280	81,830	84,280	92,130	86,860	92,150	100,720	92,200	100,740	110,110	97,860	110,140	1.80%	1.20%	1.80%
Denver	Rocky Mountain Metropolitan	BJC	167,410	172,090	177,340	183,030	176,910	187,860	200,110	181,860	199,010	218,780	186,950	210,820	239,190	1.80%	1.16%	0.55%
Eads	Eads Municipal	9V7	710	690	690	720	670	660	720	650	640	720	630	620	730	0.10%	-0.70%	-0.60%

Associated City	Airport Name	FAA ID	CASP 2018 GA Operations Baseline	Projections													
				2023			2028			2033			2038			CAGR 2018-2038		
				Population (Pop.)	Employment (Employ.)	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC
Erie	Erie Municipal	EIK	52,000	59,940	57,560	52,260	69,090	63,720	52,520	79,630	70,540	52,790	91,790	78,080	53,050	0.10%	2.05%	2.88%
Fort Morgan	Fort Morgan Municipal	FMM	9,800	10,390	10,130	10,000	11,020	10,470	10,200	11,680	10,820	10,400	12,380	11,180	10,610	0.40%	0.66%	1.18%
Glenwood Springs	Glenwood Springs Municipal	GWS	22,020	24,090	24,170	22,460	26,350	26,520	22,920	28,820	29,100	23,380	31,530	31,940	23,850	0.40%	1.88%	1.81%
Granby	Granby-Grand County	GNB	2,600	2,810	2,740	2,650	3,040	2,890	2,710	3,290	3,050	2,760	3,550	3,210	2,820	0.40%	1.07%	1.57%
Greeley	Greeley-Weld County	GXY	123,220	142,030	136,400	134,720	163,710	150,990	147,290	188,700	167,150	161,030	217,510	185,030	176,050	1.80%	2.05%	2.88%
Haxtun	Haxtun Municipal	17V	90	90	90	90	90	90	90	90	100	90	90	100	90	0.10%	0.50%	-0.05%
Holly	Holly	K08	1,090	1,080	1,090	1,090	1,070	1,090	1,100	1,060	1,090	1,100	1,060	1,090	1,110	0.10%	0.05%	-0.13%
Holyoke	Holyoke	HEQ	8,500	8,480	8,710	8,670	8,460	8,930	8,850	8,440	9,160	9,020	8,420	9,390	9,210	0.40%	0.50%	-0.05%
Julesburg	Julesburg Municipal	7V8	310	310	310	310	310	310	320	310	320	320	300	320	320	0.10%	0.08%	-0.13%
Kremmling	Mc Elroy Airfield	20V	1,830	1,980	1,930	1,870	2,140	2,040	1,910	2,310	2,150	1,940	2,500	2,260	1,980	0.40%	1.07%	1.57%
La Junta	La Junta Municipal	LHX	8,950	8,770	8,840	9,130	8,600	8,740	9,310	8,430	8,630	9,500	8,260	8,530	9,690	0.40%	-0.24%	-0.40%
La Veta	Cuchara Valley	07V	10	10	10	10	10	10	10	10	10	10	10	10	10	0.10%	-0.16%	-0.32%
Lamar	Lamar Municipal	LAA	3,190	3,170	3,200	3,250	3,150	3,200	3,320	3,130	3,210	3,390	3,110	3,220	3,450	0.40%	0.05%	-0.13%
Las Animas	Las Animas-Bent County	7V9	830	830	850	840	820	870	840	810	890	840	810	920	850	0.10%	0.48%	-0.14%
Leadville	Lake County	LXV	3,000	3,110	3,250	3,060	3,220	3,520	3,120	3,340	3,810	3,190	3,460	4,120	3,250	0.40%	1.60%	0.72%
Limon	Limon Municipal	LIC	5,930	6,300	5,990	5,960	6,690	6,050	5,990	7,110	6,110	6,020	7,550	6,170	6,050	0.10%	0.20%	1.21%
Longmont	Vance Brand	LMO	72,520	76,180	76,980	73,980	80,020	81,710	75,470	84,050	86,730	76,990	88,290	92,060	78,550	0.40%	1.20%	0.99%
Meeker	Meeker/Coulter Field	EEO	8,050	8,210	8,420	8,210	8,370	8,820	8,380	8,530	9,230	8,550	8,700	9,660	8,720	0.40%	0.91%	0.39%
Monte Vista	Monte Vista Municipal	MVI	6,000	6,000	5,930	6,030	5,990	5,860	6,060	5,990	5,790	6,090	5,980	5,720	6,120	0.10%	-0.24%	-0.02%
Nucla	Hopkins Field	AIB	4,130	4,490	4,450	4,210	4,880	4,790	4,300	5,310	5,160	4,380	5,780	5,560	4,470	0.40%	1.50%	1.69%

Associated City	Airport Name	FAA ID	CASP 2018 GA Operations Baseline	Projections													
				2023			2028			2033			2038			CAGR 2018-2038		
				Population (Pop.)	Employment (Employ.)	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC	Pop.	Employ.	ARC
Pagosa Springs	Stevens Field	PSO	16,300	17,890	17,630	17,820	19,640	19,070	19,490	21,560	20,620	21,310	23,660	22,300	23,290	1.80%	1.58%	1.88%
Paonia	North Fork Valley	7V2	2,000	2,090	2,120	2,010	2,180	2,240	2,020	2,280	2,370	2,030	2,380	2,500	2,040	0.10%	1.13%	0.87%
Rangely	Rangely	4V0	47,100	48,020	49,290	48,050	48,960	51,590	49,020	49,910	53,990	50,010	50,890	56,500	51,010	0.40%	0.91%	0.39%
Rifle	Rifle Garfield County	RIL	14,530	15,900	15,950	16,680	17,390	17,500	19,150	19,020	19,210	21,990	20,810	21,080	25,240	2.80%	1.88%	1.81%
Saguache	Saguache Municipal	04V	70	70	70	70	70	70	70	70	70	70	70	70	70	0.70%	-0.35%	-0.16%
Salida	Harriet Alexander Field	ANK	3,970	4,150	4,140	4,040	4,340	4,330	4,130	4,540	4,520	4,210	4,750	4,720	4,290	0.40%	0.87%	0.91%
Springfield	Springfield Municipal	8V7	4,580	4,410	4,550	4,600	4,250	4,530	4,620	4,090	4,500	4,640	3,940	4,480	4,670	0.10%	-0.11%	-0.74%
Steamboat Springs	Steamboat Springs	SBS	11,100	12,140	11,620	11,330	13,270	12,170	11,550	14,520	12,740	11,790	15,870	13,340	12,020	0.40%	0.92%	1.80%
Sterling	Sterling Municipal	STK	2,140	2,240	2,180	2,180	2,340	2,220	2,230	2,450	2,260	2,270	2,560	2,310	2,320	0.40%	0.38%	0.91%
Trinidad	Perry Stokes	TAD	5,280	5,200	5,300	5,390	5,130	5,310	5,500	5,050	5,330	5,610	4,980	5,340	5,720	0.40%	0.06%	-0.29%
Walden	Walden-Jackson County	33V	1,100	1,070	1,090	1,120	1,050	1,080	1,140	1,030	1,080	1,160	1,000	1,070	1,190	0.40%	-0.12%	-0.45%
Walsenburg	Spanish Peaks Airfield	4V1	5,000	4,920	4,960	5,030	4,840	4,920	5,050	4,760	4,880	5,080	4,690	4,840	5,100	0.10%	-0.16%	-0.32%
Westcliffe	Silver West	C08	800	810	830	800	820	870	810	830	910	810	840	950	820	0.10%	0.86%	0.27%
Wray	Wray Municipal	2V5	14,600	14,840	15,060	14,890	15,080	15,530	15,190	15,330	16,020	15,500	15,580	16,520	15,810	0.40%	0.62%	0.32%
Yuma	Yuma Municipal	2V6	5,000	5,080	5,160	5,100	5,160	5,320	5,200	5,250	5,490	5,310	5,330	5,660	5,420	0.40%	0.62%	0.32%
Commercial Service Airports Total			**340,170**	**365,070**	**361,800**	**384,710**	**391,900**	**384,860**	**435,230**	**420,790**	**409,460**	**492,550**	**451,920**	**435,700**	**557,590**	**1.43%**	**1.25%**	**2.50%**
General Aviation Airports Total			**1,220,350**	**1,297,970**	**1,296,560**	**1,315,840**	**1,382,930**	**1,378,340**	**1,422,500**	**1,476,060**	**1,466,140**	**1,541,770**	**1,578,340**	**1,560,450**	**1,675,310**	**1.28%**	**1.22%**	**1.59%**
System-wide Total			**1,560,520**	**1,663,050**	**1,658,360**	**1,700,550**	**1,774,830**	**1,763,210**	**1,857,730**	**1,896,850**	**1,875,610**	**2,034,320**	**2,030,260**	**1,996,150**	**2,232,900**	**1.32%**	**1.23%**	**1.80%**

Sources: Woods and Poole Economics, Inc., 2018; FAA TAF, pulled March 2019; 2018 Inventory & Data Form; Kimley-Horn, 2019

7.6.2. Military Operations Forecast

Many GA and commercial service airports facilitate operations that are performed by military aircraft. Military activity in Colorado's aviation system spans from military operations conducted at Colorado Springs Municipal Airport (COS) due to its collocation with Peterson Air Force Base to itinerant military operations executed at GA and commercial service airports.

7.6.2.1. Military Operations Forecast Results

System-wide, Colorado's airports facilitated almost 260,000 military operations in 2018 according to both data from the TAF and that airports reported. Of the 42 airports that reported military operations, 13 were commercial service airports and 29 were GA airports.

The future of military operations is oftentimes difficult to ascertain as this information is dependent on national security needs. As these needs cannot be easily predicted, forecasts for future military operations are held at a constant rate into the planning horizon. Therefore, military operations are anticipated to remain flat through 2038.

Table 7.27 shows the breakdown of projected military operation estimates for the next 20 years. Commercial service airports conduct the largest proportion of military operations in the state at 80 to 84 percent of total military operations. Of commercial service airports, PUB handled the highest number of military operations of the commercial service airports with nearly 168,000 to 169,000 military operations. The GA airport handling the largest number of military operations is Meadow Lake (FLY) with 19,800 to 22,500 operations.

Table 7.27. 2018 Military Operations by Source

Associated City	Airport Name	FAA ID	TAF Military Operations	Airport-Reported Military Operations
Alamosa	San Luis Valley Regional	ALS	750	1,476
Aspen	Aspen-Pitkin County	ASE	271	159
Colorado Springs	Colorado Springs Municipal	COS	39,898	37,073
Cortez	Cortez Municipal	CEZ	30	0
Denver	Denver International	DEN	120	121
Durango	Durango-La Plata County	DRO	515	552
Eagle	Eagle County Regional	EGE	4,271	4,962
Fort Collins/ Loveland	Northern Colorado Regional	FNL	200	200
Grand Junction	Grand Junction Regional	GJT	2,228	2,364
Gunnison	Gunnison-Crested Butte Regional	GUC	212	460
Hayden	Yampa Valley	HDN	23	17
Montrose	Montrose Regional	MTJ	1,000	2,000
Pueblo	Pueblo Memorial	PUB	168,824	167,712
Telluride	Telluride Regional	TEX	0	500

Associated City	Airport Name	FAA ID	TAF Military Operations	Airport-Reported Military Operations
Akron	Colorado Plains Regional	AKO	1,000	1,000
Blanca	Blanca	05V	0	0
Boulder	Boulder Municipal	BDU	0	0
Brush	Brush Municipal	7V5	0	0
Buena Vista	Central Colorado Regional	AEJ	137	140
Burlington	Kit Carson County	ITR	87	1
Canon City	Fremont County	1V6	1,578	255
Center	Leach	1V8	0	0
Colorado Springs	Meadow Lake	FLY	19,800	22,500
Craig	Craig-Moffat	CAG	0	0
Creede	Mineral County Memorial	C24	0	0
Del Norte	Astronaut Kent Rominger	RCV	0	0
Delta	Blake Field	AJZ	0	0
Denver	Centennial	APA	5,188	5,250
Denver	Colorado Air and Space Port	CFO	2,613	3,087
Denver	Rocky Mountain Metropolitan	BJC	3,852	4,002
Eads	Eads Municipal	9V7	16	16
Erie	Erie Municipal	EIK	0	60
Fort Morgan	Fort Morgan Municipal	FMM	200	200
Glenwood Springs	Glenwood Springs Municipal	GWS	0	0
Granby	Granby-Grand County	GNB	0	20
Greeley	Greeley-Weld County	GXY	500	0
Haxtun	Haxtun Municipal	17V	0	0
Holly	Holly	K08	0	0
Holyoke	Holyoke	HEQ	0	0
Julesburg	Julesburg Municipal	7V8	0	0
Kremmling	Mc Elroy Airfield	20V	0	0
La Junta	La Junta Municipal	LHX	308	438
La Veta	Cuchara Valley	07V	36	36
Lamar	Lamar Municipal	LAA	210	100
Las Animas	Las Animas-Bent County	7V9	24	24
Leadville	Lake County	LXV	2,000	2,000
Limon	Limon Municipal	LIC	70	70
Longmont	Vance Brand	LMO	420	420
Meeker	Meeker/Coulter Field	EEO	20	10
Monte Vista	Monte Vista Municipal	MVI	0	0
Nucla	Hopkins Field	AIB	90	0
Pagosa Springs	Stevens Field	PSO	750	120

Associated City	Airport Name	FAA ID	TAF Military Operations	Airport-Reported Military Operations
Paonia	North Fork Valley	7V2	0	0
Rangely	Rangely	4V0	15	0
Rifle	Rifle Garfield County	RIL	30	6
Saguache	Saguache Municipal	04V	0	0
Salida	Harriet Alexander Field	ANK	88	400
Springfield	Springfield Municipal	8V7	0	0
Steamboat Springs	Steamboat Springs	SBS	10	82
Sterling	Sterling Municipal	STK	38	24
Trinidad	Perry Stokes	TAD	600	180
Walden	Walden-Jackson County	33V	6	6
Walsenburg	Spanish Peaks Airfield	4V1	0	14,040
Westcliffe	Silver West	C08	130	130
Wray	Wray Municipal	2V5	0	0
Yuma	Yuma Municipal	2V6	0	0
	Commercial Service Airports Total		**218,342**	**217,596**
	General Aviation Airports Total		**39,816**	**54,617**
	System-wide Total		**258,158**	**272,213**

Sources: FAA TAF, pulled March 2019, 2018 Inventory & Data Form, Kimley-Horn, 2019

7.6.3. Commercial Operations Forecast

Commercial service operations are comprised of the total number of air carrier and air taxi/commuter operations and do not include GA or military operations that take place on commercial service airports. Commercial service operations are generally reflective of enplaned passenger activity and are important to understand as they affect how the system may perform based on projected changes in demand during the planning period. These are significant to identifying future commercial service airport needs in terms of airside and landside facilities serving passengers.

The FAA defines the operations and carriers of commercial airports in the following categories:

- **Itinerant Air Carrier Operations** - Itinerant airport operations performed by aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds, carrying passengers or cargo for hire or compensation. Includes US and foreign flag carriers.
- **Itinerant Air Taxi/Commuter Operations** - Itinerant airport operations performed by aircraft with seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less, carrying passengers or cargo for hire or compensation.
- **Mainline Carriers** - Carriers providing service primarily via aircraft with 90 or more seats.
- **Regional Carriers** – Carriers providing service primarily via aircraft with 89 or less seats and whose routes serve mainly as feeders to mainline carriers.

Of note, operations data shown for commercial service airports in this section represent only combined air carrier and air taxi/commuter operations and not all types of operations that may occur.

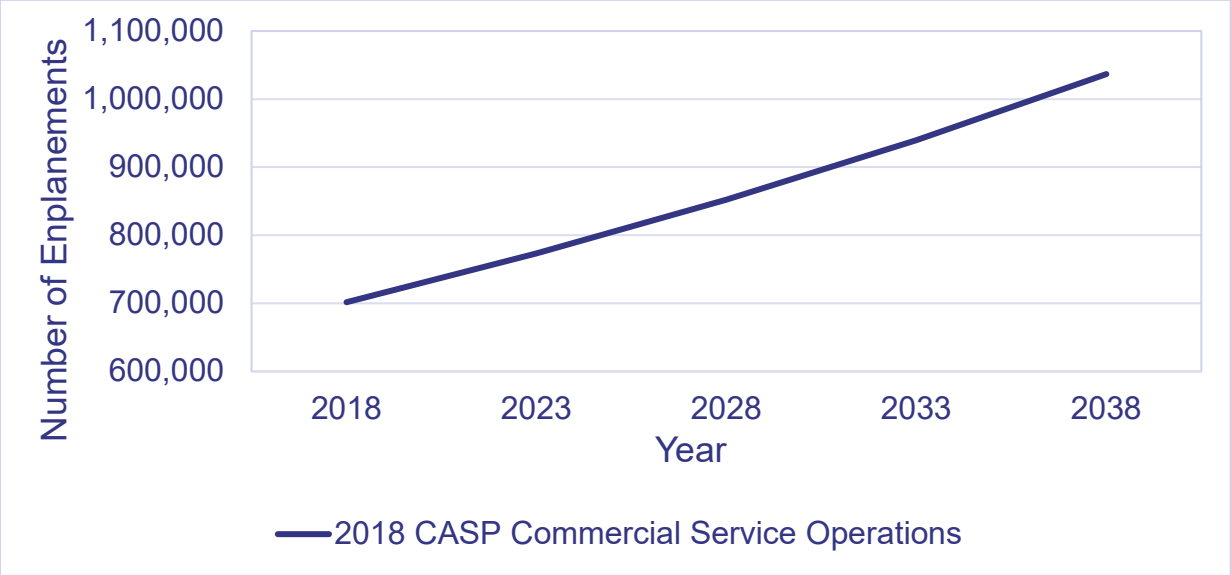
It should be noted that commercial operations forecasts at the master plan or individual airport level provide more detailed analysis of factors ranging from load factor to average seats based on aircraft fleet mix and other factors not analyzed in this statewide approach to forecasting. Therefore, the CASP commercial operations forecast is viewed as a high-level estimate since a detailed evaluation of each commercial airport's fleet and load factors was not conducted.

Growth rates from the *FAA Aerospace Forecasts 2019-2039* for aircraft operations at airports with air traffic control services, both air carrier and air taxi/commuter were reviewed. Due to FAA's forecast of declining regional aircraft overall, and especially those with 40 or less seats based on airlines' plans to up-gauge aircraft to those with larger seating capacities, different growth rates were used based on the type of service available at the airports today and the type of service that will likely be provided by 2038. Therefore, commercial service airports were assigned the following growth rates related to future commercial operations:

- Airports primarily served by small carriers with 40 seats or less: 0.0 percent CAGR was applied
- Airports served by multiple carriers, primarily regional airlines: 1.0 percent CAGR was applied
- Airports served by air carrier aircraft: 2.1 percent CAGR was applied

Figure 7.20 portrays the commercial operations forecast results using the growth rates by service type methodology.

Figure 7.20. Commercial Operations Forecast, 2018-2038



Sources: FAA TAF, pulled March 2019; 2018 Inventory & Data Form; Kimley-Horn, 2019

The forecast anticipates a range from flat activity to some growth in commercial operations in the next 20 years for Colorado's airports. The flat activity is anticipated for commercial airports currently being served by very small regional carriers utilizing aircraft with lower seating capacities. It is expected that airlines will replace these with larger aircraft. This may actually result in a decline in commercial operations, however, the activity was projected to remain constant. There are other options that may be realized, however, at this time, FAA's forecasts show a decline in air taxi/commuter operations and

in non-jet regional aircraft, with only a very small growth in regional jet aircraft having more than 40 seats. The CASP forecast predicts system-wide commercial operations may exceed 1 million by 2038.

Table 7.34. shows the results of the commercial operations forecast. Of the 14 commercial service airports, DEN conducts the largest number of commercial operations system-wide with nearly 600,000 commercial operations for 2018. This number is forecasted to increase to over 890,000 operations over the next 20 years. COS and DEN are anticipated to experience the fastest annual growth at 2.1 percent per year amounting to more than 15,000 and 300,000 additional commercial operations by 2038. The forecast predicts system-wide commercial operations to increase at a 1.97 CAGR and projects over 335,000 additional commercial operations.

Table 7.28. Commercial Service Operations Forecast, 2018-2038

Associated City	Airport Name	FAA ID	Historic	Projections				
			2018 CASP Commercial Operations Baseline	2023	2028	2023	2038	CAGR
Alamosa	San Luis Valley Regional	ALS	1,000	1,000	1,000	1,000	1,000	0.00%
Aspen	Aspen-Pitkin County	ASE	21,267	22,352	23,492	24,690	25,950	1.00%
Colorado Springs	Colorado Springs Municipal	COS	29,165	32,359	35,902	39,833	44,195	2.10%
Cortez	Cortez Municipal	CEZ	1,304	1,304	1,304	1,304	1,304	0.00%
Denver	Denver International*	DEN	590,252	654,887	726,599	806,164	894,442	2.10%
Durango	Durango-La Plata County	DRO	8,932	9,388	9,866	10,370	10,899	1.00%
Eagle	Eagle County Regional	EGE	12,546	13,186	13,859	14,566	15,309	1.00%
Fort Collins/ Loveland	Northern Colorado Regional	FNL	3,548	3,548	3,548	3,548	3,548	0.00%
Grand Junction	Grand Junction Regional	GJT	14,249	14,976	15,740	16,543	17,386	1.00%
Gunnison	Gunnison-Crested Butte Regional	GUC	1,052	1,106	1,162	1,221	1,284	1.00%
Hayden	Yampa Valley	HDN	8,758	9,205	9,674	10,168	10,686	1.00%
Montrose	Montrose Regional	MTJ	5,242	5,509	5,790	6,086	6,396	1.00%
Pueblo	Pueblo Memorial	PUB	4,298	4,298	4,298	4,298	4,298	0.00%
Telluride	Telluride Regional	TEX	32	32	32	32	32	0.00%
Commercial Service Airports Total			**701,645**	**773,148**	**852,267**	**939,823**	**1,036,729**	**1.97%**

**Notes: The forecasts for DEN were based on early 2018 data and an update was underway as of March 2020.*

Sources: FAA TAF, pulled March 2019; Kimley-Horn, 2019

7.6.4. Preferred Total Operations Forecast

This section summarizes the aggregate findings of the different operations categories analyzed in preceding sections for the CASP baseline forecast. The totals presented in this section combine the results of the preferred methodologies for each operations category (GA, military, and commercial) to develop the total operations forecast through 2038 for all airports in the CASP. **Table 7.29** demonstrates the total operations forecast.

Table 7.29. Preferred Total Operations Forecast, 2018-2038

Associated City	Airport Name	FAA ID	Historic	Preferred Total Operations Projections				CAGR
			CASP 2018 Total Operations Baseline	2023	2028	2033	2038	2018-2038
Commercial Service								
Alamosa	San Luis Valley Regional	ALS	5,718	6,088	6,493	6,935	7,419	0.99%
Aspen	Aspen-Pitkin County	ASE	42,222	46,369	51,025	56,260	62,154	1.48%
Colorado Springs	Colorado Springs Municipal	COS	137,273	149,054	162,267	177,084	193,703	1.32%
Cortez	Cortez Municipal	CEZ	9,834	10,005	10,180	10,359	10,540	0.26%
Denver	Denver International	DEN	594,522	659,771	732,189	812,564	901,772	1.57%
Durango	Durango-La Plata County	DRO	30,190	33,717	37,722	42,273	47,450	1.72%
Eagle	Eagle County Regional	EGE	40,419	44,554	49,238	54,551	60,582	1.55%
Fort Collins/Loveland	Northern Colorado Regional	FNL	96,008	107,624	120,701	135,426	152,004	1.74%
Grand Junction	Grand Junction Regional	GJT	46,317	51,462	57,298	63,925	71,454	1.65%
Gunnison	Gunnison-Crested Butte Regional	GUC	6,929	7,696	8,555	9,519	10,599	1.61%
Hayden	Yampa Valley	HDN	14,323	15,467	16,723	18,101	19,615	1.19%
Montrose	Montrose Regional	MTJ	30,925	34,847	39,324	44,436	50,277	1.85%
Pueblo	Pueblo Memorial	PUB	196,074	198,964	202,217	205,880	210,004	0.27%
Telluride	Telluride Regional	TEX	9,402	10,582	11,910	13,405	15,089	1.79%
General Aviation								
Akron	Colorado Plains Regional	AKO	20,500	20,893	21,294	21,703	22,121	0.29%
Blanca	Blanca	05V	1,000	1,005	1,010	1,015	1,020	0.07%
Boulder	Boulder Municipal	BDU	51,358	52,393	53,450	54,527	55,627	0.30%
Brush	Brush Municipal	7V5	1,461	1,468	1,476	1,483	1,490	0.07%
Buena Vista	Central Colorado Regional	AEJ	10,000	10,199	10,402	10,609	10,820	0.30%
Burlington	Kit Carson County	ITR	8,000	8,160	8,322	8,488	8,658	0.30%
Canon City	Fremont County	1V6	13,778	14,024	14,275	14,531	14,792	0.27%
Center	Leach	1V8	833	837	841	846	850	0.07%
Colorado Springs	Meadow Lake	FLY	65,814	66,045	66,276	66,509	66,743	0.05%
Craig	Craig-Moffat	CAG	12,000	12,242	12,489	12,741	12,997	0.30%
Creede	Mineral County Memorial	C24	1,439	1,446	1,453	1,461	1,468	0.07%
Del Norte	Astronaut Kent Rominger	RCV	5,475	5,585	5,698	5,813	5,930	0.30%
Delta	Blake Field	AJZ	2,910	2,969	3,029	3,090	3,152	0.30%
Denver	Centennial	APA	340,721	390,401	447,437	512,917	588,093	2.07%
Denver	Colorado Air and Space Port	CFO	79,704	86,897	94,760	103,357	112,757	1.31%
Denver	Rocky Mountain Metropolitan	BJC	171,262	186,881	203,958	222,627	243,039	1.32%
Eads	Eads Municipal	9V7	728	732	735	739	742	0.07%
Erie	Erie Municipal	EIK	52,000	52,261	52,522	52,785	53,050	0.07%
Fort Morgan	Fort Morgan Municipal	FMM	10,000	10,198	10,399	10,605	10,815	0.29%

Associated City	Airport Name	FAA ID	Historic	Preferred Total Operations Projections				CAGR
			CASP 2018 Total Operations Baseline	2023	2028	2033	2038	2018-2038
Glenwood Springs	Glenwood Springs Municipal	GWS	22,020	22,464	22,917	23,379	23,850	0.30%
Granby	Granby-Grand County	GNB	2,600	2,652	2,706	2,760	2,816	0.30%
Greeley	Greeley-Weld County	GXY	123,721	135,217	147,786	161,528	176,552	1.34%
Haxtun	Haxtun Municipal	17V	90	90	91	91	92	0.07%
Holly	Holly	K08	1,085	1,090	1,096	1,101	1,107	0.07%
Holyoke	Holyoke	HEQ	8,500	8,671	8,846	9,025	9,206	0.30%
Julesburg	Julesburg Municipal	7V8	312	314	315	317	318	0.07%
Kremmling	Mc Elroy Airfield	20V	1,831	1,868	1,906	1,944	1,983	0.30%
La Junta	La Junta Municipal	LHX	9,258	9,438	9,623	9,810	10,002	0.29%
La Veta	Cuchara Valley	07V	50	50	50	50	50	0.02%
Lamar	Lamar Municipal	LAA	3,399	3,463	3,529	3,596	3,664	0.28%
Las Animas	Las Animas-Bent County	7V9	856	860	864	869	873	0.07%
Leadville	Lake County	LXV	5,000	5,060	5,122	5,185	5,249	0.18%
Limon	Limon Municipal	LIC	6,000	6,030	6,060	6,090	6,120	0.07%
Longmont	Vance Brand	LMO	72,939	74,401	75,893	77,414	78,966	0.30%
Meeker	Meeker/Coulter Field	EEO	8,070	8,232	8,398	8,567	8,739	0.30%
Monte Vista	Monte Vista Municipal	MVI	6,000	6,030	6,060	6,091	6,121	0.07%
Nucla	Hopkins Field	AIB	4,220	4,303	4,388	4,475	4,563	0.29%
Pagosa Springs	Stevens Field	PSO	17,053	18,574	20,237	22,055	24,043	1.30%
Paonia	North Fork Valley	7V2	2,000	2,010	2,020	2,030	2,040	0.07%
Rangely	Rangely	4V0	47,115	48,065	49,033	50,022	51,030	0.30%
Rifle	Rifle Garfield County	RIL	14,561	16,712	19,183	22,018	25,274	2.09%
Saguache	Saguache Municipal	04V	72	72	73	73	73	0.07%
Salida	Harriet Alexander Field	ANK	4,053	4,133	4,214	4,298	4,383	0.29%
Springfield	Springfield Municipal	8V7	4,575	4,598	4,621	4,644	4,667	0.07%
Steamboat Springs	Steamboat Springs	SBS	11,112	11,336	11,564	11,797	12,035	0.30%
Sterling	Sterling Municipal	STK	2,176	2,219	2,263	2,308	2,354	0.29%
Trinidad	Perry Stokes	TAD	5,880	5,986	6,095	6,206	6,319	0.27%
Walden	Walden-Jackson County	33V	1,103	1,125	1,148	1,171	1,194	0.30%
Walsenburg	Spanish Peaks Airfield	4V1	5,000	5,025	5,050	5,076	5,101	0.07%
Westcliffe	Silver West	C08	930	934	938	942	946	0.06%
Wray	Wray Municipal	2V5	14,600	14,894	15,195	15,501	15,813	0.30%
Yuma	Yuma Municipal	2V6	5,000	5,101	5,204	5,309	5,416	0.30%
	Commercial Service Airports Total		**1,260,156**	**1,376,200**	**1,505,843**	**1,650,718**	**1,812,662**	**1.39%**
	General Aviation Airports Total		**1,260,164**	**1,355,656**	**1,462,312**	**1,581,585**	**1,715,123**	**1.18%**
	System-wide Total		**2,520,320**	**2,731,856**	**2,968,155**	**3,232,303**	**3,527,785**	**1.28%**

Sources: FAA TAF, pulled March 2019; 2018 Inventory & Data Form; Kimley-Horn, 2019

Total operations for commercial service airports, GA airports, and system-wide are projected to increase through the 20-year planning horizon. Despite speculated constant activity in commercial operations for airports served by small air carrier aircraft, total operations at commercial service airports are anticipated to experience the fastest rates of growth at 1.39 percent annually. The number of total operations estimated to occur at commercial service airports is estimated to be above 1.81 million operations in 2038. GA airports are projected to grow at 1.18 percent annually, potentially adding over 455,000 operations through the end of the planning horizon for a total of 1,715,123 operations. System-wide, the number of operations is estimated to grow to 3.54 million in 20-years at 1.28 percent CAGR.

7.7. Summary of Forecast Findings

Accurate and reliable forecasts are essential to planning for potential facility needs, particularly in how they relate to accommodating aircraft types and future aviation activity demands. The forecasts for the CASP considered the impact of historical elements and how they set the stage for current and future demand. Colorado's socioeconomic indicators are forecasted to continue trending positively into the future. Most aviation demand forecasts in the CASP anticipate growth through 2038 in all sectors: enplanements, based aircraft, and operations. Although the predictions made in this chapter are considered optimal and unconstrained, projected demand is supported by a healthy economy, growing population, and increased investment in the aviation industry.

Preferred forecast projections are required to be compared to the FAA TAF forecasts and are subject to the FAA's approval for NPIAS airports. To provide an accurate comparison between the TAF and the 2020 CASP, only NPIAS airports are showcased in the following analyses.

CASP baseline data were coordinated with the FAA and CDOT Division of Aeronautics to provide the most accurate and reliable baseline of information that is representative of Colorado's system-wide aviation activity. Due to differences between the sources used to convey this activity, the CASP baseline data for 2018 and resulting forecasts from each preferred methodology in the CASP differs from numbers and projections found in the FAA TAF. Moderate differences in near-term forecasts are further amplified as the planning horizon continues out into the future resulting in wider discrepancies. For forecasts to be deemed consistent with the TAF, the numbers must differ by less than 10 percent in the five-year forecast period and less than 15 percent in the 10-year forecast period. Forecast numbers exceeding the 10 and 15 percent thresholds must be settled before the forecast can be used for purposes related to: environmental and noise compatibility planning, development of airport layout plans, completion of a cost-benefit analysis, and for use to justify financial decisions including the issuance of a "letter of intent" for funding opportunities[10].

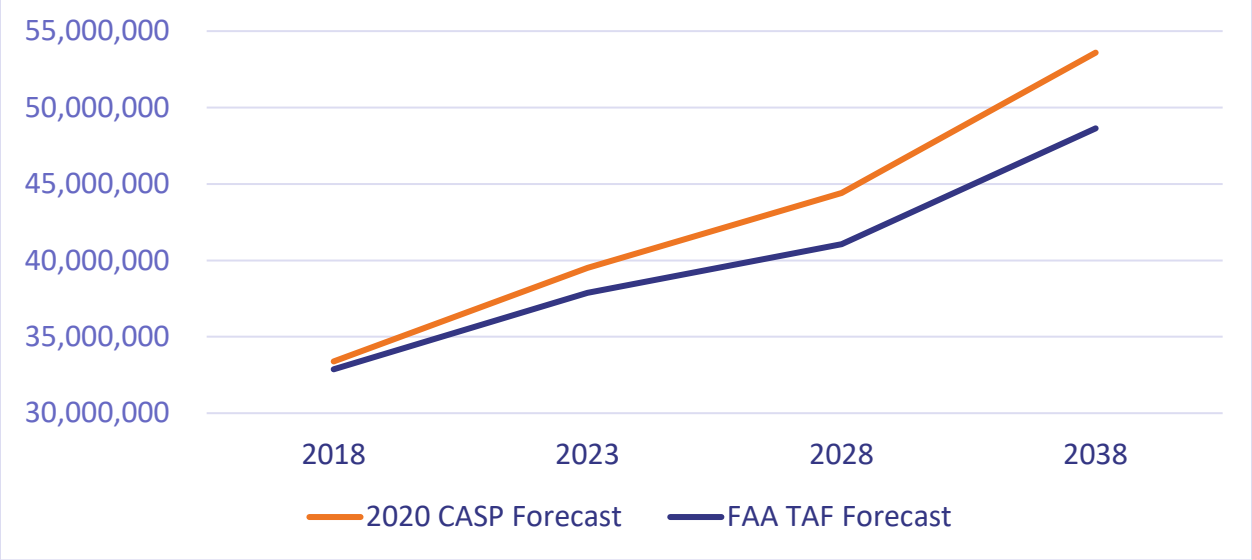
7.7.1. Enplanements Forecast Comparison to TAF

Figure 7.21 compares the results of the FAA TAF and the CASP enplanements forecasts through the 20-year planning horizon. The 2020 CASP forecasts for enplanements are anticipated to grow at 2.39 percent annually over the next 20 years. The number of enplanements is projected to reach over 53.5

[10] "Review and Approval of Aviation Forecasts," Federal Aviation Administration, June 2008

million by 2038. The TAF is predicting a slower rate of growth at 1.98 percent annually and predicts the total enplanements in 2038 could exceed 48.6 million.

Figure 7.21. Enplanements Forecast Comparison to TAF, 2018-2038



Sources: FAA TAF, pulled January and March 2019; FAA ACAIS, pulled July 2019, Kimley-Horn, 2019; "Northern Colorado Regional Airport Master Plan," 2018

Table 7.30 demonstrates the comparison between FAA TAF and the CASP baseline data and future projections for enplanements. Figures that differ more than 10 percent within the first 5 years of the projections and more than 15 percent within the first 10 years are bolded. As shown, 43 percent of commercial service airports differ more than 10 percent within the first five years. This percentage remains the same at the 10-year mark. Through the planning period the percentage of airports that differ more than 15 percent is anticipated to be 64 percent in 2038. The total number of system-wide enplanements, however, only differ by 10 percent from the TAF in 2038 and do not exceed any of the thresholds.

Table 7.30. Enplanements Forecast Comparison to TAF, 2018-2038

Airport Information		2018				2023			2028			2038		
Associated City	Airport Name	FAA ID	TAF	CASP Baseline		TAF	CASP Forecast		TAF	CASP Forecast		TAF	CASP Forecast	
				#	Difference (%)		#	Difference (%)		#	Difference (%)		#	Difference (%)
Alamosa	San Luis Valley Regional	ALS	6,800	7,030	3%	6,800	7,500	10%	6,800	8,000	**18%**	6,800	9,110	**34%**
Aspen	Aspen-Pitkin County	ASE	272,460	287,900	6%	282,050	313,220	**11%**	293,410	340,770	**16%**	320,980	403,340	**26%**
Colorado Springs	Colorado Springs Municipal	COS	873,610	846,080	-3%	837,450	925,010	10%	894,490	1,011,320	13%	1,031,670	1,208,830	**17%**
Cortez	Cortez Municipal	CEZ	7,400	7,720	4%	7,400	8,360	**13%**	7,400	9,050	**22%**	7,400	10,610	**43%**
Denver	Denver International	DEN	30,849,870	31,363,570	2%	35,779,980	37,250,090	4%	38,836,230	41,939,870	8%	46,089,260	50,625,210	10%
Durango	Durango-La Plata County	DRO	188,610	189,230	0%	208,890	205,870	-1%	222,830	223,970	1%	258,030	265,090	3%
Eagle	Eagle County Regional	EGE	170,870	175,950	3%	172,240	191,040	**11%**	178,770	207,420	16%	194,490	244,520	**26%**
***Fort Collins/ Loveland**	Northern Colorado Regional	FNL	3,390	3,390	0%	3,890	48,430	**1146%**	4,590	56,830	**1138%**	6,420	78,250	**1118%**
Grand Junction	Grand Junction Regional	GJT	219,560	222,230	1%	246,700	241,780	-2%	263,080	263,040	0%	304,510	311,340	2%
Gunnison	Gunnison-Crested Butte Regional	GUC	36,830	36,480	-1%	39,990	39,690	-1%	43,430	43,180	-1%	51,220	51,100	0%
Hayden	Yampa Valley	HDN	100,260	100,550	0%	110,530	115,520	5%	119,990	132,710	11%	142,920	175,160	**23%**
Montrose	Montrose Regional	MTJ	132,070	134,240	2%	159,500	146,050	-8%	173,930	158,890	-9%	211,720	188,060	-11%
Pueblo	Pueblo Memorial	PUB	8,970	10,450	**16%**	9,470	11,310	**19%**	10,040	12,250	**22%**	11,290	14,360	**27%**
Telluride	Telluride Regional	TEX	1,050	1,060	1%	1,050	1,730	**65%**	1,050	2,810	**168%**	1,050	7,470	**611%**
Commercial Service Airports Total			**32,871,750**	**33,385,880**	**2%**	**37,865,940**	**39,505,600**	**4%**	**41,056,040**	**44,410,110**	**8%**	**48,637,760**	**53,592,450**	**10%**

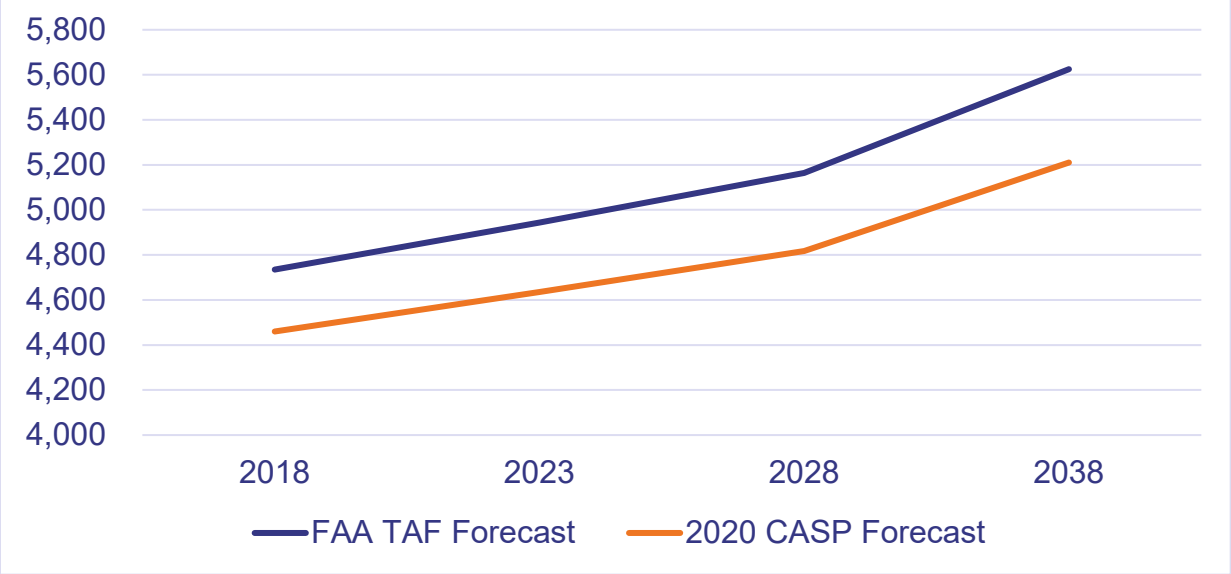
**Note: According to FNL's FAA-approved forecasts for their 2018 master plan, the preferred forecast scenario is based upon a letter of intent by Allegiant Air to return service to FNL and provide service to two destinations.*

Sources: FAA TAF, pulled January and March 2019; FAA ACAIS, pulled July 2019, Kimley-Horn, 2019; "Northern Colorado Regional Airport Master Plan," 2018

7.7.2. Based Aircraft Forecast Comparison to TAF

Figure 7.22 displays the comparison between TAF and CASP based aircraft forecasts through the 20-year planning horizon. Both forecasts predict system-wide based aircraft at NPIAS airports to increase through 2038. The TAF anticipates based aircraft to increase at a slightly faster rate at 0.86 percent CAGR than the 0.78 percent CAGR the CASP forecast predicts. The TAF projects this increase would amount to almost 900 based aircraft added to the system-wide inventory by 2038 compared to the 750 based aircraft predicted by the CASP.

Figure 7.22. Based Aircraft Forecasts Comparison to TAF, 2018-2038



Sources: FAA TAF, pulled 2019; Kimley-Horn, 2019

Table 7.31 demonstrates the differences between FAA TAF and the CASP baseline data for 2018 and forecast projections for based aircraft at NPIAS airports. Figures that differ more than 10 percent within the first 5 years of the projections and more than 15 percent within the first 10 years are **bolded**. Of the 49 NPIAS airports, 57 percent of these airports differ by more than 10 percent from the FAA TAF estimates within the first 5-years of projections. This percentage drops to 53 percent of airports as the estimates progress towards the 15 percent at 10-year threshold in 2028. In 2038, the end of the planning horizon, the percent of airports that differ by more than 15 percent from FAA TAF estimates rise slightly to 55 percent. The total number of based aircraft system-wide does not differ by more than 7 percent through 2038 and remain close to FAA TAF projections.

Table 7.31. Based Aircraft Forecast Comparison to TAF, 2018-2038

Airport Information			2018			2023			2028			2038		
Associated City	Airport Name	FAA ID	FAA TAF 2018 Based Aircraft	CASP Baseline		TAF	CASP Forecast		TAF	CASP Forecast		TAF	CASP Forecast	
				#	Difference (%)		#	Difference (%)		#	Difference (%)		#	Difference (%)
Commercial Service														
Alamosa	San Luis Valley Regional	ALS	39	38	-3%	41	40	-3%	43	42	-2%	48	46	-3%
Aspen	Aspen-Pitkin County	ASE	105	89	**-15%**	111	94	**-16%**	116	98	**-15%**	126	109	-14%
Colorado Springs	Colorado Springs Municipal	COS	247	231	-6%	272	243	**-11%**	297	255	-14%	347	282	**-19%**
Cortez	Cortez Municipal	CEZ	36	31	**-14%**	36	33	-9%	36	34	-5%	36	38	5%
Denver	Denver International	DEN	2	2	0%	2	2	0%	2	2	0%	2	2	0%
Durango	Durango-La Plata County	DRO	70	63	-10%	74	66	**-11%**	79	70	-12%	89	77	-14%
Eagle	Eagle County Regional	EGE	93	91	-2%	109	96	**-12%**	126	101	**-20%**	159	111	**-30%**
Fort Collins/Loveland	Northern Colorado Regional	FNL	255	255	0%	265	268	1%	272	282	4%	282	311	10%
Grand Junction	Grand Junction Regional	GJT	114	126	**11%**	119	132	11%	124	139	12%	134	154	**15%**
Gunnison	Gunnison-Crested Butte Regional	GUC	25	31	**24%**	30	33	9%	35	34	-2%	45	38	**-16%**
Hayden	Yampa Valley	HDN	7	12	**71%**	7	13	**80%**	7	13	**89%**	7	15	**109%**
Montrose	Montrose Regional	MTJ	78	81	4%	79	85	8%	79	89	**13%**	79	99	**25%**
Pueblo	Pueblo Memorial	PUB	136	129	-5%	154	136	**-12%**	173	142	**-18%**	213	157	**-26%**
Telluride	Telluride Regional	TEX	35	44	**26%**	35	46	**32%**	35	49	**39%**	35	54	**53%**
General Aviation														
Akron	Colorado Plains Regional	AKO	8	7	**-13%**	8	7	**-12%**	8	7	-11%	8	7	-9%
Boulder	Boulder Municipal	BDU	117	48	**-59%**	122	49	**-60%**	131	50	**-61%**	151	53	**-65%**
Buena Vista	Central Colorado Regional	AEJ	13	2	**-85%**	15	2	**-87%**	20	2	**-90%**	30	2	**-93%**
Burlington	Kit Carson County	ITR	19	20	5%	19	20	6%	19	20	7%	19	21	10%
Canon City	Fremont County	1V6	93	76	**-18%**	108	78	**-28%**	123	80	**-35%**	167	84	**-50%**
Colorado Springs	Meadow Lake	FLY	420	403	-4%	420	407	-3%	420	411	-2%	420	419	0%
Craig	Craig-Moffat	CAG	24	20	**-17%**	24	20	**-16%**	24	20	**-15%**	24	21	-13%
Delta	Blake Field	AJZ	42	46	**10%**	43	46	8%	43	47	9%	43	48	11%
Denver	Centennial	APA	803	878	9%	812	923	**14%**	822	970	**18%**	842	1,071	**27%**
Denver	Colorado Air and Space Port	CFO	399	353	**-12%**	424	371	**-12%**	454	390	-14%	515	431	**-16%**
Denver	Rocky Mountain Metropolitan	BJC	432	449	4%	454	472	4%	478	496	4%	529	548	4%
Erie	Erie Municipal	EIK	175	138	**-21%**	175	139	**-20%**	175	141	**-20%**	175	144	**-18%**
Fort Morgan	Fort Morgan Municipal	FMM	33	31	-6%	33	31	-5%	33	32	-4%	33	32	-2%
Granby	Granby-Grand County	GNB	21	15	**-29%**	21	15	**-27%**	21	16	**-25%**	21	17	**-21%**
Greeley	Greeley-Weld County	GXY	202	137	**-32%**	211	144	**-32%**	220	151	**-31%**	238	167	**-30%**
Holyoke	Holyoke	HEQ	9	9	0%	9	9	1%	9	9	2%	9	9	4%
Kremmling	Mc Elroy Airfield	20V	22	15	**-32%**	22	15	**-31%**	22	15	**-30%**	22	16	**-29%**
La Junta	La Junta Municipal	LHX	13	10	**-23%**	13	10	**-22%**	13	10	**-22%**	13	10	**-20%**

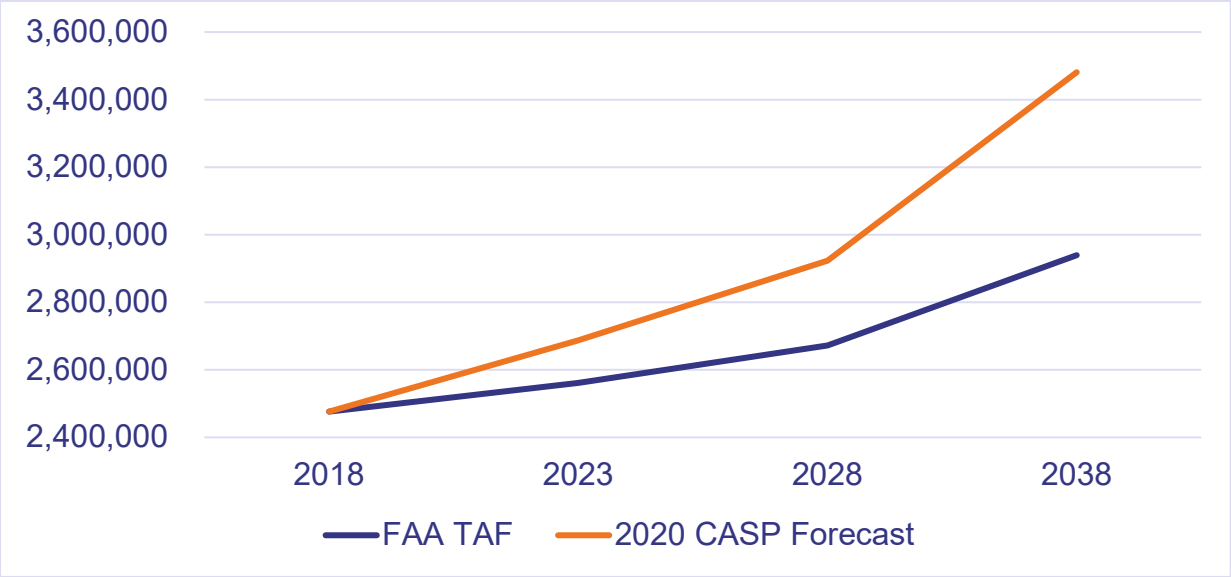
Airport Information			2018			2023			2028			2038		
Associated City	Airport Name	FAA ID	FAA TAF 2018 Based Aircraft	CASP Baseline		TAF	CASP Forecast		TAF	CASP Forecast		TAF	CASP Forecast	
				#	Difference (%)		#	Difference (%)		#	Difference (%)		#	Difference (%)
Lamar	Lamar Municipal	LAA	22	27	**23%**	25	27	9%	30	28	-8%	40	28	**-30%**
Leadville	Lake County	LXV	5	5	0%	5	5	1%	5	5	2%	5	5	4%
Limon	Limon Municipal	LIC	23	20	**-13%**	23	20	**-12%**	23	20	-11%	23	21	-9%
Longmont	Vance Brand	LMO	300	274	-9%	300	277	-8%	300	280	-7%	300	285	-5%
Meeker	Meeker/Coulter Field	EEO	11	10	-9%	11	10	-8%	11	10	-7%	11	10	-5%
Monte Vista	Monte Vista Municipal	MVI	15	15	0%	15	15	1%	15	15	2%	15	16	4%
Nucla	Hopkins Field	AIB	10	10	0%	11	10	-8%	12	10	**-15%**	12	10	-13%
Pagosa Springs	Stevens Field	PSO	32	40	**25%**	35	40	**15%**	35	41	**17%**	35	42	**19%**
Rangely	Rangely	4V0	16	13	**-19%**	16	13	**-18%**	16	13	**-17%**	16	14	**-15%**
Rifle	Rifle Garfield County	RIL	50	17	**-66%**	57	18	**-69%**	62	19	**-70%**	72	21	**-71%**
Salida	Harriet Alexander Field	ANK	27	15	**-44%**	27	16	**-42%**	27	17	**-39%**	27	18	**-32%**
Steamboat Springs	Steamboat Springs	SBS	53	59	**11%**	63	60	-4%	73	62	**-15%**	93	65	**-30%**
Sterling	Sterling Municipal	STK	34	30	**-12%**	36	31	**-15%**	38	32	**-17%**	47	33	**-29%**
Trinidad	Perry Stokes	TAD	11	1	**-91%**	12	1	**-92%**	12	1	**-91%**	12	1	-91%
Walsenburg	Spanish Peaks Airfield	4V1	10	18	**80%**	10	19	**89%**	10	20	**99%**	10	22	**120%**
Wray	Wray Municipal	2V5	16	14	**-13%**	18	14	**-21%**	23	14	**-38%**	33	15	**-56%**
Yuma	Yuma Municipal	2V6	13	12	-8%	13	12	-7%	13		12	13	12	-4%
Commercial Service Airports Total			**1,242**	**1,223**	**-2%**	**1,334**	**1,285**	**-4%**	**1,424**	**1,351**	**-5%**	**1,602**	**1,492**	**-7%**
General Aviation Airports Total			**3,493**	**3,237**	**-7%**	**3,610**	**3,349**	**-7%**	**3,740**	**3,467**	**-7%**	**4,023**	**3,719**	**-8%**
System-wide Total			**4,735**	**4,460**	**-6%**	**4,944**	**4,635**	**-6%**	**5,164**	**4,818**	**-7%**	**5,625**	**5,210**	**-7%**

Sources: FAA TAF, 2019; 2018 Inventory & Data Form; Kimley-Horn, 2019

7.7.3. Operations Forecast Comparison to TAF

Figure 7.23 demonstrates the comparison across years between the FAA TAF and the 2020 CASP total operations forecasts for NPIAS airports. Both forecasts for total operations project steady growth for the next 20 years with the 2020 CASP forecast projecting faster growth over the next 20 years. System-wide operations at NPIAS airports are estimated to reach nearly 3 million operations by 2038 according to TAF projections and surpass 3.4 million per the CASP forecasts.

Figure 7.23. Operations Forecasts Comparison to TAF, 2018-2038



Sources: FAA TAF, pulled March 2019; Kimley-Horn, 2019

Table 7.32 displays the differences between the FAA TAF and the CASP baseline data and projections for total operations. Figures that differ more than 10 percent within the first five years of the projections and more than 15 percent within the first 10 years are **bolded.** Of the NPIAS airports in the CASP, 14 percent of these differ by more than 10 percent in the first five years. This number increases slightly to 18 percent differing by more than 15 percent at 10 years. Finally, by 2038, 45 percent of NPIAS airport forecasts may differ by more than 15 percent than TAF predictions.

Table 7.32. FAA Operations Forecast Comparison to TAF, 2018-2038

Airport Information			2018			2023			2028			2038		
Associated City	Airport Name	FAA ID	FAA TAF	CASP Baseline		FAA TAF	CASP Forecast		FAA TAF	CASP Forecast		FAA TAF	CASP Forecast	
				Total (#)	Difference (%)		Total (#)	Difference (%)		Total (#)	Difference (%)		Total (#)	Difference (%)
Commercial Service														
Alamosa	San Luis Valley Regional	ALS	5,718	5,718	0%	5,969	6,088	2%	6,238	6,493	4%	6,846	7,419	8%
Aspen	Aspen-Pitkin County	ASE	42,222	42,222	0%	44,201	46,369	5%	45,787	51,025	11%	49,307	62,154	**26%**
Colorado Springs	Colorado Springs Municipal	COS	137,273	137,273	0%	133,557	149,054	**12%**	135,579	162,267	**20%**	141,263	193,703	**37%**
Cortez	Cortez Municipal	CEZ	9,834	9,834	0%	9,834	10,005	2%	9,834	10,180	4%	9,834	10,540	7%
Denver	Denver International	DEN	594,522	594,522	0%	614,032	659,771	7%	658,098	732,189	11%	773,855	901,772	**17%**
Durango	Durango-La Plata County	DRO	30,190	30,190	0%	30,649	33,717	10%	31,874	37,722	**18%**	34,918	47,450	**36%**
Eagle	Eagle County Regional	EGE	40,419	40,419	0%	42,903	44,554	4%	43,872	49,238	12%	45,973	60,582	**32%**
Fort Collins/Loveland	Northern Colorado Regional	FNL	96,008	96,008	0%	101,572	107,624	6%	107,917	120,701	12%	122,013	152,004	**25%**
Grand Junction	Grand Junction Regional	GJT	46,317	46,317	0%	46,577	51,462	10%	47,482	57,298	**21%**	50,004	71,454	**43%**
Gunnison	Gunnison-Crested Butte Regional	GUC	6,929	6,929	0%	7,407	7,696	4%	7,917	8,555	8%	9,072	10,599	**17%**
Hayden	Yampa Valley	HDN	14,323	14,323	0%	13,884	15,467	**11%**	14,773	16,723	13%	16,920	19,615	**16%**
Montrose	Montrose Regional	MTJ	30,925	30,925	0%	31,523	34,847	**11%**	32,891	39,324	**20%**	36,353	50,277	**38%**
Pueblo	Pueblo Memorial	PUB	196,074	196,074	0%	197,387	198,964	1%	198,759	202,217	2%	201,708	210,004	4%
Telluride	Telluride Regional	TEX	9,402	9,402	0%	9,402	10,582	**13%**	9,402	11,910	**27%**	9,402	15,089	**60%**
General Aviation														
Akron	Colorado Plains Regional	AKO	205,00	20,500	0%	20,500	20,893	2%	20,500	21,294	4%	20,500	22,121	8%
Boulder	Boulder Municipal	BDU	51,358	51,358	0%	55,239	52,393	-5%	59,660	53,450	-10%	69,642	55,627	**-20%**
Buena Vista	Central Colorado Regional	AEJ	10,000	10,000	0%	10,000	10,199	2%	10,000	10,402	4%	10,000	10,820	8%
Burlington	Kit Carson County	ITR	8,000	8,000	0%	8,000	8,160	2%	8,000	8,322	4%	8,000	8,658	8%
Canon City	Fremont County	1V6	13,778	13,778	0%	13,778	14,024	2%	13,778	14,275	4%	13,778	14,792	7%
Colorado Springs	Meadow Lake	FLY	65,814	65,814	0%	70,121	66,045	-6%	74,852	66,276	-11%	85,750	66,743	**-22%**
Craig	Craig-Moffat	CAG	12,000	12,000	0%	12,000	12,242	2%	12,000	12,489	4%	12,000	12,997	8%
Delta	Blake Field	AJZ	2,910	2,910	0%	2,910	2,969	2%	2,910	3,029	4%	2,910	3,152	8%
Denver	Centennial	APA	340,721	340,721	0%	350,585	390,401	**11%**	357,213	447,437	**25%**	371,008	588,093	**59%**
Denver	Colorado Air and Space Port	CFO	79,704	79,704	0%	88,772	86,897	-2%	95,564	94,760	-1%	110,876	112,757	2%
Denver	Rocky Mountain Metropolitan	BJC	171,262	171,262	0%	180,968	186,881	3%	185,135	203,958	10%	193,848	243,039	**25%**
Erie	Erie Municipal	EIK	52,000	52,000	0%	52,000	52,261	1%	52,000	52,522	1%	52,000	53,050	2%
Fort Morgan	Fort Morgan Municipal	FMM	10,000	10,000	0%	10,000	10,198	2%	10,000	10,399	4%	10,000	10,815	8%
Granby	Granby-Grand County	GNB	2,600	2,600	0%	2,600	2,652	2%	2,600	2,706	4%	2,600	2,816	8%
Greeley	Greeley-Weld County	GXY	123,721	123,721	0%	130,012	135,217	4%	136,614	147,786	8%	150,866	176,552	**17%**
Holyoke	Holyoke	HEQ	8,500	8,500	0%	8,500	8,671	2%	8,500	8,846	4%	8,500	9,206	8%
Kremmling	Mc Elroy Airfield	20V	1,831	1,831	0%	1,986	1,868	-6%	2,144	1,906	-11%	2,495	1,983	**-21%**
La Junta	La Junta Municipal	LHX	9,258	9,258	0%	9,258	9,438	2%	9,258	9,623	4%	9,258	10,002	8%

Airport Information			2018			2023			2028			2038		
Associated City	Airport Name	FAA ID	FAA TAF	CASP Baseline		FAA TAF	CASP Forecast		FAA TAF	CASP Forecast		FAA TAF	CASP Forecast	
				Total (#)	Difference (%)		Total (#)	Difference (%)		Total (#)	Difference (%)		Total (#)	Difference (%)
Lamar	Lamar Municipal	LAA	3,399	3,399	0%	3,726	3,463	-7%	4,085	3,529	-14%	4,921	3,664	**-26%**
Leadville	Lake County	LXV	5,000	5,000	0%	5,000	5,060	1%	5,000	5,122	2%	5,000	5,249	5%
Limon	Limon Municipal	LIC	6,000	6,000	0%	6,000	6,030	0%	6,000	6,060	1%	6,000	6,120	2%
Longmont	Vance Brand	LMO	72,939	72,939	0%	80,629	74,401	-8%	89,107	75,893	-15%	108,840	78,966	**-27%**
Meeker	Meeker/Coulter Field	EEO	8,070	8,070	0%	8,070	8,232	2%	8,070	8,398	4%	8,070	8,739	8%
Monte Vista	Monte Vista Municipal	MVI	6,000	6,000	0%	6,000	6,030	1%	6,000	6,060	1%	6,000	6,121	2%
Nucla	Hopkins Field	AIB	4,220	4,220	0%	4,979	4,303	**-14%**	5,965	4,388	**-26%**	8,919	4,563	**-49%**
Pagosa Springs	Stevens Field	PSO	17,053	17,053	0%	18,117	18,574	3%	19,252	20,237	5%	21,775	24,043	10%
Rangely	Rangely	4V0	47,115	47,115	0%	47,115	48,065	2%	47,115	49,033	4%	47,115	51,030	8%
Rifle	Rifle Garfield County	RIL	14,561	14,561	0%	15,482	16,712	8%	16,517	19,183	**16%**	18,908	25,274	**34%**
Salida	Harriet Alexander Field	ANK	4,053	4,053	0%	4,053	4,133	2%	4,053	4,214	4%	4,053	4,383	8%
Steamboat Springs	Steamboat Springs	SBS	11,112	11,112	0%	13,693	11,336	**-17%**	16,873	11,564	**-31%**	25,617	12,035	**-53%**
Sterling	Sterling Municipal	STK	2,176	2,176	0%	2,176	2,219	2%	2,176	2,263	4%	2,176	2,354	8%
Trinidad	Perry Stokes	TAD	5,880	5,880	0%	5,880	5,986	2%	5,880	6,095	4%	5,880	6,319	7%
Walsenburg	Spanish Peaks Airfield	4V1	5,000	5,000	0%	5,000	5,025	1%	5,000	5,050	1%	5,000	5,101	2%
Wray	Wray Municipal	2V5	14,600	14,600	0%	14,600	14,894	2%	14,600	15,195	4%	14,600	15,813	8%
Yuma	Yuma Municipal	2V6	5,000	5,000	0%	5,000	5,101	2%	5,000	5,204	4%	5,000	5,416	8%
Commercial Service Airports Total			**1,260,156**	**1,260,156**	**0%**	**1,288,897**	**1,369,664**	**6%**	**1,350,423**	**1,491,174**	**10%**	**1,507,468**	**1,775,842**	**18%**
General Aviation Airports Total			**1,216,135**	**1,216,135**	**0%**	**1,272,749**	**1,310,974**	**3%**	**1,321,421**	**1,416,966**	**7%**	**1,431,905**	**1,668,410**	**17%**
System-wide Total			**2,476,291**	**2,476,291**	**0%**	**2,561,646**	**2,680,638**	**5%**	**2,671,844**	**2,908,140**	**9%**	**2,939,373**	**3,444,252**	**17%**

Sources: FAA TAF, 2019; 2018 Inventory & Data Form; Kimley-Horn, 2019

7.8. Alternative Forecasts

Alternative forecasts were conducted in addition to the 2020 CASP baseline forecasts presented in previous sections of this chapter. The alternative methods presented in this section differ in that the baseline data utilized for these forecasts are represented using the airport-reported responses to the 2018 Inventory & Data Form, when available. The alternative forecasts utilize the preferred methodology growth rates that were selected for each forecast indicator. The preferred growth rates were then applied to the airport-reported 2018 baseline. While the base-year and out-year data change airport-to-airport, the projected growth rates remain the same.

7.8.1. Alternative Based Aircraft Forecasts

The alternative forecast for based aircraft extracted data from airport-reported responses to the 2018 Inventory & Data Form.[11] The system-wide total of based aircraft from this source is 5,208. This is greater than the 4,633 based aircraft employed for the baseline CASP projections for 2018 in previous sections.

The airport fleet mix preferred methodology for based aircraft was applied to the alternative 2018 airport-reported data. The results are depicted in **Table 7.33**. To derive these results, the individual fleet mix at each airport was analyzed using the airport-reported inventory for based aircraft, including varying fleet mixes. There are differences in airport-reported compositions of fleet mix compared to data from the FAA's National Based Aircraft Inventory. This difference in fleet mixes resulted in the application of different growth rates for some airports than was used in the baseline methodology. The airport fleet mix methodology using the alternative airport-reported data predicted that the number of based aircraft could exceed over 6,000 based aircraft by 2038 (compared to 5,389 in the baseline scenario), with the addition of 811 based aircraft over the planning horizon (compared to 756 in the baseline scenario). Centennial Airport (APA) is projected to experience the largest increase in the number of based aircraft over the next 20 years in this alternative methodology. APA is anticipated to have almost 194 additional based aircraft by 2038 in this alternative based aircraft forecast.

[11] The only airport that did not report based aircraft data in the 2018 Inventory & Data Form was ALS. FAA 5010 Master Record data were used for ALS.

Table 7.33. Alternative Based Aircraft Forecasts, 2018-2038 (Airport-Reported)

Associated City	Airport Name	FAA ID	Historical	Projections				
			Airport-Reported 2018 Based Aircraft	2023	2028	2033	2038	2018 - 2038 CAGR
Commercial Service								
Alamosa	San Luis Valley Regional	ALS	38	40	42	44	46	1.00%
Aspen	Aspen-Pitkin County	ASE	89	94	98	103	109	1.00%
Colorado Springs	Colorado Springs Municipal	COS	231	243	255	268	282	1.00%
Cortez	Cortez Municipal	CEZ	31	33	34	36	38	1.00%
Denver	Denver International	DEN	2	2	2	2	2	0.00%
Durango	Durango-La Plata County	DRO	63	66	70	73	77	1.00%
Eagle	Eagle County Regional	EGE	91	96	101	106	111	1.00%
Fort Collins/ Loveland	Northern Colorado Regional	FNL	255	268	282	296	311	1.00%
Grand Junction	Grand Junction Regional	GJT	126	132	139	146	154	1.00%
Gunnison	Gunnison-Crested Butte Regional	GUC	31	33	34	36	38	1.00%
Hayden	Yampa Valley	HDN	12	13	13	14	15	1.00%
Montrose	Montrose Regional	MTJ	81	85	89	94	99	1.00%
Pueblo	Pueblo Memorial	PUB	129	136	142	150	157	1.00%
Telluride	Telluride Regional	TEX	44	46	49	51	54	1.00%
General Aviation								
Akron	Colorado Plains Regional	AKO	14	14	15	15	15	0.50%
Blanca	Blanca	05V	0	0	0	0	0	0.00%
Boulder	Boulder Municipal	BDU	116	117	118	120	121	0.20%
Brush	Brush Municipal	7V5	5	5	5	5	5	0.20%
Buena Vista	Central Colorado Regional	AEJ	4	4	4	5	5	1.00%
Burlington	Kit Carson County	ITR	23	24	24	25	25	0.50%
Canon City	Fremont County	1V6	81	85	89	94	99	1.00%

Associated City	Airport Name	FAA ID	Historical	Projections				
			Airport-Reported 2018 Based Aircraft	2023	2028	2033	2038	2018 - 2038 CAGR
Center	Leach	1V8	4	4	4	4	4	0.20%
Colorado Springs	Meadow Lake	FLY	450	455	459	464	468	0.20%
Craig	Craig-Moffat	CAG	25	26	26	27	28	0.50%
Creede	Mineral County Memorial	C24	10	10	10	10	10	0.20%
Del Norte	Astronaut Kent Rominger	RCV	39	39	40	40	41	0.20%
Delta	Blake Field	AJZ	65	66	66	67	68	0.20%
Denver	Centennial	APA	880	925	972	1,022	1,074	1.00%
Denver	Colorado Air and Space Port	CFO	434	445	456	468	480	0.50%
Denver	Rocky Mountain Metropolitan	BJC	425	447	469	493	519	1.00%
Eads	Eads Municipal	9V7	9	9	9	9	9	0.20%
Erie	Erie Municipal	EIK	207	209	211	213	215	0.20%
Fort Morgan	Fort Morgan Municipal	FMM	32	32	33	33	33	0.20%
Glenwood Springs	Glenwood Springs Municipal	GWS	69	71	73	74	76	0.50%
Granby	Granby-Grand County	GNB	24	25	25	26	27	0.50%
Greeley	Greeley-Weld County	GXY	201	211	222	233	245	1.00%
Haxtun	Haxtun Municipal	17V	1	1	1	1	1	0.20%
Holly	Holly	K08	1	1	1	1	1	0.20%
Holyoke	Holyoke	HEQ	15	15	15	15	16	0.20%
Julesburg	Julesburg Municipal	7V8	5	5	5	5	5	0.20%
Kremmling	Mc Elroy Airfield	20V	22	22	22	23	23	0.20%
La Junta	La Junta Municipal	LHX	23	23	23	24	24	0.20%
La Veta	Cuchara Valley	07V	2	2	2	2	2	0.20%
Lamar	Lamar Municipal	LAA	28	28	29	29	29	0.20%
Las Animas	Las Animas-Bent County	7V9	11	11	11	11	11	0.20%
Leadville	Lake County	LXV	5	5	5	5	5	0.20%

Associated City	Airport Name	FAA ID	Historical	Projections				
			Airport-Reported 2018 Based Aircraft	2023	2028	2033	2038	2018 - 2038 CAGR
Limon	Limon Municipal	LIC	22	22	22	23	23	0.20%
Longmont	Vance Brand	LMO	294	301	309	317	325	0.50%
Meeker	Meeker/Coulter Field	EEO	10	10	10	10	10	0.20%
Monte Vista	Monte Vista Municipal	MVI	15	15	16	16	17	0.50%
Nucla	Hopkins Field	AIB	10	10	10	10	10	0.20%
Pagosa Springs	Stevens Field	PSO	40	40	41	41	42	0.20%
Paonia	North Fork Valley	7V2	20	20	20	21	21	0.20%
Rangely	Rangely	4V0	19	19	20	20	21	0.50%
Rifle	Rifle Garfield County	RIL	48	50	53	56	59	1.00%
Saguache	Saguache Municipal	04V	0	0	0	0	0	0.00%
Salida	Harriet Alexander Field	ANK	41	43	45	48	50	1.00%
Springfield	Springfield Municipal	8V7	10	10	10	10	10	0.20%
Steamboat Springs	Steamboat Springs	SBS	86	90	95	100	105	1.00%
Sterling	Sterling Municipal	STK	33	33	34	34	34	0.20%
Trinidad	Perry Stokes	TAD	20	20	20	21	21	0.20%
Walden	Walden-Jackson County	33V	3	3	3	3	3	0.20%
Walsenburg	Spanish Peaks Airfield	4V1	19	19	20	20	21	0.50%
Westcliffe	Silver West	C08	24	25	25	26	27	0.50%
Wray	Wray Municipal	2V5	27	27	28	28	28	0.20%
Yuma	Yuma Municipal	2V6	14	14	15	15	15	0.50%
	Commercial Service Airports Total		**1,223**	**1,285**	**1,351**	**1,420**	**1,492**	**1.00%**
	General Aviation Airports Total		**3,985**	**4,112**	**4,245**	**4,383**	**4,527**	**0.64%**
	System-wide Total		**5,208**	**5,397**	**5,595**	**5,802**	**6,019**	**0.73%**

**Note: Growth rates for some airports differ from the forecasts for based aircraft using the CASP 2018 baseline. This is due to differences in fleet mix composition between the airport-reported and CASP 2018 baselines.*

Sources: Woods and Poole Economics, Inc., 2018; 2018 Inventory & Data Form; Kimley-Horn, 2019

7.8.2. Alternative Commercial Operations Forecasts

Table 7.34 presents the alternative commercial operations forecast using the airport-reported 2018 data and applying the growth rates by service type methodology. 2018 TAF commercial operations data were used to develop the baseline forecasts. The number of commercial operations for the airport-reported alternative are slightly higher than the CASP baseline with more than 5,200 additional commercial operations. DEN comprises the largest proportion of commercial operations and is projected to reach over 900,000 operations by 2038 in the alternative commercial operations forecast. System-wide, operations are estimated to increase at a 1.97 percent CAGR and may reach over 1.04 million operations in the next 20-years in the alternative forecast.

Table 7.34. Alternative Commercial Operations Forecasts, 2018-2038 (Airport-Reported)

Associated City	Airport Name	FAA ID	Historical	Projections				
			2018 Airport-Reported Baseline	2023	2028	2033	2038	2018 - 2038 CAGR
Alamosa	San Luis Valley Regional	ALS	2,535	2,535	2,535	2,535	2,535	0.00%
Aspen	Aspen-Pitkin County	ASE	21,104	22,181	23,312	24,501	25,751	1.00%
Colorado Springs	Colorado Springs Municipal	COS	26,681	29,603	32,844	36,441	40,431	2.10%
Cortez	Cortez Municipal	CEZ	2,530	2,530	2,530	2,530	2,530	0.00%
Denver	Denver International	DEN	599,303	664,929	737,741	818,526	908,158	2.10%
Durango	Durango-La Plata County	DRO	8,211	8,630	9,070	9,533	10,019	1.00%
Eagle	Eagle County Regional	EGE	12,533	13,172	13,844	14,550	15,293	1.00%
Fort Collins/ Loveland	Northern Colorado Regional	FNL	3,546	3,546	3,546	3,546	3,546	0.00%
Grand Junction	Grand Junction Regional	GJT	13,398	14,081	14,800	15,555	16,348	1.00%
Gunnison	Gunnison-Crested Butte Regional	GUC	1,329	1,397	1,468	1,543	1,622	1.00%
Hayden	Yampa Valley	HDN	3,578	3,761	3,952	4,154	4,366	1.00%
Montrose	Montrose Regional	MTJ	7,050	7,410	7,788	8,185	8,602	1.00%
Pueblo	Pueblo Memorial	PUB	2,439	2,439	2,439	2,439	2,439	0.00%
Telluride	Telluride Regional	TEX	2,600	2,600	2,600	2,600	2,600	0.00%
Commercial Service Airports Total			**706,837**	**778,813**	**858,469**	**946,638**	**1,044,239**	**1.97%**

Sources: FAA TAF, pulled March 2019; 2018 Inventory & Data Form; Kimley-Horn, 2019

7.8.3. Alternative GA Operations Forecasts

The alternative GA operations forecast methodology applied the preferred ARC methodology growth rates to the total annual GA operations in 2018, as reported by the airports. Using the airport-reported data for 2018, a total of 1,559,480 operations are estimated for the alternative GA operations forecast baseline, slightly less overall. GA operations at commercial airports and GA airports are estimated at 347,850 and 1,211,630, respectively. Applying the ARC methodology to the alternative 2018 GA operations projects GA operations to exceed 2.2 million by 2038. The number of GA operations at commercial service airports are projected to reach over half a million in the next 20 years. GA airports are anticipated to exceed 1.5 million GA operations in 2038 using the airport-reported baseline for GA operations.

Table 7.35. Alternative GA Operations Forecasts, 2018-2038 (Airport-Reported)

Associated City	Airport Name	FAA ID	Historical	Projections				
			2018 Airport-Reported GA Operations	2023	2028	2033	2038	2018 - 2038 CAGR
Commercial Service								
Alamosa	San Luis Valley Regional	ALS	4,390	4,800	5,250	5,740	6,280	1.35%
Aspen	Aspen-Pitkin County	ASE	19,980	22,930	26,330	30,230	34,700	2.09%
Colorado Springs	Colorado Springs Municipal	COS	63,910	71,960	81,020	91,220	102,700	1.79%
Cortez	Cortez Municipal	CEZ	8,800	8,980	9,160	9,340	9,530	0.30%
Denver	Denver International	DEN	3,980	4,570	5,240	6,020	6,910	2.09%
Durango	Durango-La Plata County	DRO	24,360	27,960	32,110	36,860	42,320	2.09%
Eagle	Eagle County Regional	EGE	24,790	28,460	32,670	37,510	43,060	2.09%
Fort Collins/ Loveland	Northern Colorado Regional	FNL	91,150	102,630	115,550	130,090	146,470	1.79%
Grand Junction	Grand Junction Regional	GJT	31,280	35,910	41,230	47,330	54,340	2.09%
Gunnison	Gunnison-Crested Butte Regional	GUC	6,930	7,800	8,780	9,890	11,130	1.79%
Hayden	Yampa Valley	HDN	6,320	7,110	8,010	9,010	10,150	1.80%

Associated City	Airport Name	FAA ID	Historical	Projections				
			2018 Airport-Reported GA Operations	2023	2028	2033	2038	2018 - 2038 CAGR
Montrose	Montrose Regional	MTJ	29,400	33,750	38,750	44,490	51,080	2.09%
Pueblo	Pueblo Memorial	PUB	21,560	24,280	27,330	30,770	34,650	1.79%
Telluride	Telluride Regional	TEX	11,000	12,380	13,940	15,700	17,680	1.80%
General Aviation								
Akron	Colorado Plains Regional	AKO	19,500	19,890	20,290	20,700	21,120	0.30%
Blanca	Blanca	05V	1,000	1,010	1,010	1,020	1,020	0.05%
Boulder	Boulder Municipal	BDU	50,580	51,600	52,640	53,700	54,790	0.30%
Brush	Brush Municipal	7V5	1,460	1,470	1,480	1,480	1,490	0.07%
Buena Vista	Central Colorado Regional	AEJ	4,560	4,650	4,750	4,840	4,940	0.30%
Burlington	Kit Carson County	ITR	1,000	1,020	1,040	1,060	1,080	0.29%
Canon City	Fremont County	1V6	16,440	16,770	17,100	17,450	17,800	0.30%
Center	Leach	1V8	10	10	10	10	10	0.06%
Colorado Springs	Meadow Lake	FLY	52,500	52,760	53,030	53,290	53,560	0.08%
Craig	Craig-Moffat	CAG	12,000	12,240	12,490	12,740	13,000	0.30%
Creede	Mineral County Memorial	C24	1,440	1,450	1,450	1,460	1,470	0.07%
Del Norte	Astronaut Kent Rominger	RCV	5,480	5,590	5,700	5,810	5,930	0.30%

Associated City	Airport Name	FAA ID	Historical	Projections				
			2018 Airport-Reported GA Operations	2023	2028	2033	2038	2018 - 2038 CAGR
Delta	Blake Field	AJZ	3,030	3,090	3,150	3,220	3,280	0.30%
Denver	Centennial	APA	337,260	387,190	444,520	510,340	585,900	2.09%
Denver	Colorado Air and Space Port	CFO	88,510	96,770	105,800	115,670	126,460	1.35%
Denver	Rocky Mountain Metropolitan	BJC	168,060	183,730	200,880	219,620	240,110	1.35%
Eads	Eads Municipal	9V7	710	720	720	720	730	0.08%
Erie	Erie Municipal	EIK	54,000	54,270	54,540	54,820	55,090	0.08%
Fort Morgan	Fort Morgan Municipal	FMM	9,800	10,000	10,200	10,400	10,610	0.30%
Glenwood Springs	Glenwood Springs Municipal	GWS	22,020	22,460	22,920	23,380	23,850	0.30%
Granby	Granby-Grand County	GNB	2,580	2,630	2,690	2,740	2,790	0.30%
Greeley	Greeley-Weld County	GXY	122,000	133,380	145,830	159,430	174,310	1.35%
Haxtun	Haxtun Municipal	17V	90	90	90	90	90	0.00%
Holly	Holly	K08	1,090	1,090	1,100	1,100	1,110	0.09%
Holyoke	Holyoke	HEQ	8,500	8,670	8,850	9,020	9,210	0.30%
Julesburg	Julesburg Municipal	7V8	310	310	320	320	320	0.16%
Kremmling	Mc Elroy Airfield	20V	1,800	1,840	1,870	1,910	1,950	0.29%

Associated City	Airport Name	FAA ID	Historical	Projections				
			2018 Airport-Reported GA Operations	2023	2028	2033	2038	2018 - 2038 CAGR
La Junta	La Junta Municipal	LHX	8,910	9,090	9,270	9,460	9,650	0.30%
La Veta	Cuchara Valley	07V	10	10	10	10	10	0.00%
Lamar	Lamar Municipal	LAA	4,600	4,690	4,790	4,880	4,980	0.30%
Las Animas	Las Animas-Bent County	7V9	830	840	840	840	850	0.06%
Leadville	Lake County	LXV	2,800	2,860	2,910	2,970	3,030	0.29%
Limon	Limon Municipal	LIC	5,930	5,960	5,990	6,020	6,050	0.07%
Longmont	Vance Brand	LMO	74,680	76,190	77,720	79,290	80,890	0.30%
Meeker	Meeker/Coulter Field	EEO	8,050	8,210	8,380	8,550	8,720	0.30%
Monte Vista	Monte Vista Municipal	MVI	6,000	6,030	6,060	6,090	6,120	0.07%
Nucla	Hopkins Field	AIB	4,300	4,390	4,480	4,570	4,660	0.30%
Pagosa Springs	Stevens Field	PSO	5,750	6,290	6,870	7,510	8,220	1.35%
Paonia	North Fork Valley	7V2	2,000	2,010	2,020	2,030	2,040	0.07%
Rangely	Rangely	4V0	14,920	15,220	15,530	15,840	16,160	0.30%
Rifle	Rifle Garfield County	RIL	10,780	12,380	14,210	16,310	18,730	2.09%
Saguache	Saguache Municipal	04V	70	70	70	70	70	0.00%
Salida	Harriet Alexander Field	ANK	6,250	6,380	6,500	6,640	6,770	0.30%

Associated City	Airport Name	FAA ID	Historical	Projections				
			2018 Airport-Reported GA Operations	2023	2028	2033	2038	2018 - 2038 CAGR
Springfield	Springfield Municipal	8V7	4,580	4,600	4,620	4,640	4,670	0.08%
Steamboat Springs	Steamboat Springs	SBS	9,050	9,240	9,420	9,610	9,810	0.30%
Sterling	Sterling Municipal	STK	3,220	3,280	3,350	3,410	3,480	0.30%
Trinidad	Perry Stokes	TAD	620	640	650	660	680	0.30%
Walden	Walden-Jackson County	33V	1,100	1,120	1,140	1,160	1,190	0.30%
Walsenburg	Spanish Peaks Airfield	4V1	1,380	1,380	1,390	1,400	1,410	0.11%
Westcliffe	Silver West	C08	800	800	810	810	820	0.12%
Wray	Wray Municipal	2V5	24,600	25,100	25,600	26,120	26,640	0.30%
Yuma	Yuma Municipal	2V6	5,000	5,100	5,200	5,310	5,420	0.30%
		Commercial Service	**347,850**	**393,520**	**445,370**	**504,200**	**571,000**	**2.51%**
		General Aviation	**1,211,630**	**1,307,080**	**1,413,720**	**1,532,990**	**1,666,640**	**1.61%**
		State-wide	**1,559,480**	**1,700,600**	**1,859,090**	**2,037,190**	**2,237,640**	**1.82%**

Sources: CDOT Division of Aeronautics, 2019; Woods and Poole Economics, Inc, 2018; 2018 Inventory & Data Form; Kimley-Horn, 2019

7.8.4. Alternative Total Operations Forecasts

Table 7.36 presents the total operations forecast using the airport-reported alternative methodology. Echoing previous operations forecasts, the total number of operations are anticipated to increase steadily for the next 20 years. Similar to the CASP baseline forecast, the alternative forecast methodology is estimated to surpass 3 million operations in 2033 and 3.5 million operations in 2038. Centennial Airport (APA) is predicted to experience the fastest growth in total operations. It's estimated that total operations at APA may rise at 2.07 percent CAGR with the airport handling over 247,000 added operations by 2038 in the alternative total operations forecast. Rifle Garfield County (RIL) is estimated to experience the fastest operations growth rate. RIL's total operations are predicted to grow to almost 8,000 total operations at 2.09 percent CAGR. Commercial service airports are anticipated to realize an annual increase of 1.39 percent while, GA airports are predicted to grow at 1.18 percent annually. Total operations system-wide are forecasted to increase at 1.29 percent annually and estimated to add over 1 million operations by 2038.

Table 7.36. Alternative Total Operations Forecast, 2018-2038 (Airport-Reported)

Associated City	Airport Name	FAA ID	Historic	Total Operations Projections				
			Airport-Reported 2018 Total Operations	2023	2028	2033	2038	2018 - 2038 CAGR
Commercial Service								
Alamosa	San Luis Valley Regional	ALS	8,403	8,811	9,261	9,751	10,291	0.78%
Aspen	Aspen-Pitkin County	ASE	41,238	45,270	49,801	54,890	60,610	1.47%
Colorado Springs	Colorado Springs Municipal	COS	127,667	138,636	150,937	164,734	180,204	1.32%
Cortez	Cortez Municipal	CEZ	11,330	11,510	11,690	11,870	12,060	0.23%
Denver	Denver International	DEN	603,403	669,620	743,102	824,667	915,189	1.57%
Durango	Durango-La Plata County	DRO	33,121	37,142	41,732	46,945	52,891	1.78%
Eagle	Eagle County Regional	EGE	42,282	46,594	51,476	57,022	63,315	1.55%
Fort Collins/Loveland	Northern Colorado Regional	FNL	94,896	106,376	119,296	133,836	150,216	1.74%
Grand Junction	Grand Junction Regional	GJT	47,040	52,355	58,394	65,249	73,052	1.68%
Gunnison	Gunnison-Crested Butte Regional	GUC	8,717	9,657	10,708	11,893	13,212	1.58%
Hayden	Yampa Valley	HDN	9,910	10,888	11,979	13,181	14,533	1.45%
Montrose	Montrose Regional	MTJ	38,450	43,160	48,538	54,675	61,682	1.80%
Pueblo	Pueblo Memorial	PUB	191,712	194,431	197,481	200,921	204,801	0.26%
Telluride	Telluride Regional	TEX	14,100	15,480	17,040	18,800	20,780	1.48%
General Aviation								
Akron	Colorado Plains Regional	AKO	20,500	20,890	21,290	21,700	22,120	0.29%
Blanca	Blanca	05V	1,000	1,010	1,010	1,020	1,020	0.05%
Boulder	Boulder Municipal	BDU	50,582	51,600	52,640	53,700	54,790	0.30%
Brush	Brush Municipal	7V5	1,461	1,470	1,480	1,480	1,490	0.07%
Buena Vista	Central Colorado Regional	AEJ	4,700	4,790	4,890	4,980	5,080	0.29%
Burlington	Kit Carson County	ITR	8,001	1,021	1,041	1,061	1,081	0.29%
Canon City	Fremont County	1V6	16,690	17,025	17,355	17,705	18,055	0.29%
Center	Leach	1V8	833	840	840	850	850	0.06%
Colorado Springs	Meadow Lake	FLY	75,000	75,260	75,530	75,790	76,060	0.05%
Craig	Craig-Moffat	CAG	12,000	12,240	12,490	12,740	13,000	0.30%
Creede	Mineral County Memorial	C24	1,439	1,450	1,450	1,460	1,470	0.07%
Del Norte	Astronaut Kent Rominger	RCV	5,475	5,590	5,700	5,810	5,930	0.30%
Delta	Blake Field	AJZ	3,030	3,090	3,150	3,220	3,280	0.30%
Denver	Centennial	APA	342,506	392,440	449,770	515,590	591,150	2.07%
Denver	Colorado Air and Space Port	CFO	91,600	99,857	108,887	118,757	129,547	1.31%
Denver	Rocky Mountain Metropolitan	BJC	172,057	187,732	204,882	223,622	244,112	1.32%
Eads	Eads Municipal	9V7	1,250	1,260	1,260	1,270	1,280	0.08%
Erie	Erie Municipal	EIK	54,060	54,330	54,600	54,880	55,150	0.07%
Fort Morgan	Fort Morgan Municipal	FMM	10,000	10,200	10,400	10,600	10,810	0.29%

Associated City	Airport Name	FAA ID	Historic	Total Operations Projections				
			Airport-Reported 2018 Total Operations	2023	2028	2033	2038	2018 - 2038 CAGR
Glenwood Springs	Glenwood Springs Municipal	GWS	22,020	22,460	22,920	23,380	23,850	0.30%
Granby	Granby-Grand County	GNB	2,600	2,650	2,710	2,760	2,810	0.29%
Greeley	Greeley-Weld County	GXY	122,000	133,380	145,830	159,430	174,310	1.35%
Haxtun	Haxtun Municipal	17V	90	90	90	90	90	0.00%
Holly	Holly	K08	1,085	1,090	1,100	1,100	1,110	0.09%
Holyoke	Holyoke	HEQ	8,500	8,670	8,850	9,020	9,210	0.30%
Julesburg	Julesburg Municipal	7V8	312	310	320	320	320	0.16%
Kremmling	Mc Elroy Airfield	20V	1,800	1,840	1,870	1,910	1,950	0.29%
La Junta	La Junta Municipal	LHX	9,345	9,528	9,708	9,898	10,088	0.29%
La Veta	Cuchara Valley	07V	50	46	46	46	46	0.00%
Lamar	Lamar Municipal	LAA	4,700	4,790	4,890	4,980	5,080	0.29%
Las Animas	Las Animas-Bent County	7V9	856	864	864	864	874	0.06%
Leadville	Lake County	LXV	4,800	4,860	4,910	4,970	5,030	0.17%
Limon	Limon Municipal	LIC	6,000	6,030	6,060	6,090	6,120	0.07%
Longmont	Vance Brand	LMO	75,102	76,610	78,140	79,710	81,310	0.30%
Meeker	Meeker/Coulter Field	EEO	8,060	8,220	8,390	8,560	8,730	0.30%
Monte Vista	Monte Vista Municipal	MVI	6,000	6,030	6,060	6,090	6,120	0.07%
Nucla	Hopkins Field	AIB	4,300	4,390	4,480	4,570	4,660	0.30%
Pagosa Springs	Stevens Field	PSO	5,870	6,410	6,990	7,630	8,340	1.32%
Paonia	North Fork Valley	7V2	2,000	2,010	2,020	2,030	2,040	0.07%
Rangely	Rangely	4V0	25,000	25,500	26,020	26,540	27,080	0.30%
Rifle	Rifle Garfield County	RIL	14,358	16,510	18,950	21,750	24,960	2.09%
Saguache	Saguache Municipal	04V	72	70	70	70	70	0.00%
Salida	Harriet Alexander Field	ANK	6,650	6,780	6,900	7,040	7,170	0.28%
Springfield	Springfield Municipal	8V7	4,575	4,600	4,620	4,640	4,670	0.08%
Steamboat Springs	Steamboat Springs	SBS	9,135	9,322	9,502	9,692	9,892	0.30%
Sterling	Sterling Municipal	STK	3,240	3,304	3,374	3,434	3,504	0.29%
Trinidad	Perry Stokes	TAD	5,880	5,990	6,100	6,210	6,320	0.27%
Walden	Walden-Jackson County	33V	1,103	1,126	1,146	1,166	1,196	0.30%
Walsenburg	Spanish Peaks Airfield	4V1	15,418	15,420	15,430	15,440	15,450	0.01%
Westcliffe	Silver West	C08	930	930	940	940	950	0.11%
Wray	Wray Municipal	2V5	24,600	25,100	25,600	26,120	26,640	0.30%
Yuma	Yuma Municipal	2V6	5,000	5,100	5,200	5,310	5,420	0.30%
Commercial Service Airports Total			**1,272,269**	**1,389,929**	**1,521,435**	**1,668,434**	**1,832,835**	**1.39%**
General Aviation Airports Total			**1,273,635**	**1,362,125**	**1,468,765**	**1,588,035**	**1,721,685**	**1.18%**
System-wide Total			**2,545,904**	**2,752,054**	**2,990,200**	**3,256,469**	**3,554,520**	**1.29%**

Sources: 2018 Inventory & Data Form; Kimley-Horn, 2019

7.9. Summary

This chapter documents a baseline forecast as well as an alternative forecast for activity indicators in the Colorado airport system. These indicators include enplanements, based aircraft, and operations. The baseline forecast was developed for comparison to FAA TAF data, while the alternative airport-reported forecast can be used to show a potential range in activity that may be realized at airports given different 2018 data. The forecasts are used in subsequent chapters to evaluate future system needs, focusing on where additional facilities may be needed to accommodate projected growth.