



Chapter 2

Forecasts

2.1 INTRODUCTION

The forecast chapter is a significant element of the master plan due to the direct impacts forecasted aviation activity has on the remainder of the plans. Demand, capacity, and facility requirements are based on meeting the values of the selected forecasts presented in this chapter. Forecasts are one of two components of a master plan that is reviewed and approved by the Federal Aviation Administration (FAA); the other component is the airport layout plan.

This forecast analysis involves a determination of aviation demand that may reasonably be expected to occur in the near term (5 years), intermediate term (10 and 15 years), and long term (20 years). With 2023 as the base year, these forecast intervals are 2028, 2033, 2038, and 2043. Aviation demand forecasting for North Las Vegas Airport (VGT) will primarily consider based aircraft, aircraft operations, peak activity periods, and the critical aircraft (the most demanding aircraft that conducts at least 500 annual operations).

The forecast analysis considered historical aviation trends at VGT, within the Las Vegas metropolitan region, and nationwide. Local historical data were collected from airport management (Clark County), airport traffic control tower (ATCT) personnel, and FAA sources, including the Terminal Area Forecast (TAF); the Operational Network (OPSNET) database; the Traffic Flow Management System Counts (TFMSC) database; and the 5010-1 *Airport Master Record*. In addition, socioeconomic data for the Las Vegas Metropolitan Statistical Area (MSA), the State of Nevada, the Las Vegas Convention and Visitors Authority (LVCVA), and Clark County were examined to discern local and regional trends and conditions that could impact aviation demand.

The FAA has oversight responsibility to review and approve aviation forecasts developed in conjunction with airport planning studies. The FAA will review individual airport forecasts with the objective of comparing them to its TAF and the National Plan of Integrated Airport Systems (NPIAS). Even though the TAF is updated annually, there has almost always been a disparity between the TAF and master planning forecasts in the past, primarily because the TAF forecasts are the result of a top-down model which does not consider local conditions or recent trends. While the TAF forecasts are a point of comparison for master plan forecasts, they serve other purposes, such as asset allocation by the FAA.

When reviewing a sponsor's forecast (from the master plan), the FAA must ensure that the forecast is based on reasonable planning assumptions, uses current data, and is developed using appropriate forecasting methods. According to the FAA, forecasts should be:

- Realistic;
- Based on the latest available data;
- Reflective of current conditions at the airport (as a baseline);
- Supported by information in the study; and
- Able to provide adequate justification for airport planning and development.

The forecast process for an airport master plan consists of a series of basic steps which vary in complexity depending on the issues to be addressed and the level of effort required. The steps include a review of previous forecasts; determination of data needs; identification of data sources; collection of data; selection of forecast methods; preparation of the forecasts; and documentation and evaluation of the results. FAA Advisory Circular (AC) 150/5070-6B Change 2, *Airport Master Plans*, outlines seven standard steps involved in the forecast process, including:

- 1) **Identify Aviation Activity Measures:** Determine the level and type of aviation activities likely to impact facility needs. For general aviation, this typically includes based aircraft and operations.
- 2) **Review Previous Airport Forecasts:** May include the FAA's TAF and state or regional system plans.
- 3) **Gather Data:** Determine what data are required to prepare the forecasts, identify data sources, and collect historical and forecast data.
- 4) **Select Forecast Methods:** Several appropriate methodologies and techniques are available, including regression analysis; trend analysis; market share or ratio analysis; exponential smoothing; econometric modeling; comparison with other airports; survey techniques; cohort analysis; choice and distribution models; range projections; and professional judgment.
- 5) **Apply Forecast Methods and Evaluate Results:** Prepare the actual forecasts and evaluate them for reasonableness.
- 6) **Summarize and Document Results:** Provide supporting text and tables, as necessary.
- 7) **Compare Forecast Results with the FAA's TAF:** Based aircraft and total operations are considered consistent with the TAF if they meet the following criteria:
 - Forecasts differ by less than 10 percent in the five-year forecast period and less than 15 percent in the 10-year forecast period; or

- Forecasts do not affect the timing or scale of an airport project; or
- Forecasts do not affect the role of the airport as defined in the current version of FAA Order 5090.5, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS) and the Airports Capital Improvement Plan (ACIP)*.

Aviation activity can be affected by many influences on the local, regional, and national levels, making it virtually impossible to predict year-to-year fluctuations of activity over 20 years with absolute certainty. Therefore, it is important to remember that forecasts are only meant to serve as guidelines, and planning must remain flexible enough to respond to a range of unforeseen developments.

The COVID-19 pandemic significantly affected air travel, tourism, and the economy not only for large metropolitan areas like Las Vegas but for the entire world. It is essential to note that the pandemic and following recovery from spring 2020 to May 2023 brought impacts to nearly every industry, including aviation. In response to the pandemic, the U.S. government restricted international travel to and from the U.S. and most states announced “shelter-in-place” orders that required people to stay in their homes. In Nevada and the Las Vegas Metropolitan Area, the Las Vegas Strip was shut down for 78 days beginning March 18th, 2020. Businesses such as restaurants, and casinos gradually began to reopen with restrictions that limited the number of patrons allowed inside at a given time. In the years following the shut down, indoor and outdoor gatherings were limited to small amounts of people therefore impacting conventions, sports events, and concerts. Now, in 2023, there are no more restrictions in place relating to COVID-19. However, the return to pre-COVID-19 levels has taken time. Aviation activity saw a decrease in 2021 at VGT due to the pandemic's affects. Total operations dropped 15.8 percent from 2019 to 2021. Socioeconomic indicators such as employment saw a 7.5 percent decline in 2020. Clark County visitors and gaming revenue declined significantly, decreasing 55 percent and 37 percent respectively from 2019 to 2020.

The following forecast analysis for the airport was produced following these basic guidelines. Existing forecasts are examined and compared against current and historical activity. Historical aviation activity is then examined along with other factors and trends that can affect demand. The intent is to provide an updated set of aviation demand projections for the airport that will permit the Clark County Department of Aviation (CCDOA) to make planning adjustments as necessary to maintain a viable, efficient, and cost-effective facility.

Definitions:

- Based Aircraft – An aircraft that is operational and airworthy and which is typically based at a facility for the majority of the year.
- Critical Aircraft – The most physically demanding aircraft with at least 500 annual operations at the airport.
- Operation – A takeoff or landing at the airport. A touch-and-go counts as two operations.

Key Abbreviations:

- TAF – Terminal Area Forecast
- TFMSC – Traffic Flow Management System Counts
- ATCT – Airport Traffic Control Tower
- MSA – Metropolitan Statistical Area
- CAGR – Compound Annual Growth Rate
- CCDOA - Clark County Department of Aviation
- LVCVA - Las Vegas Convention and Visitors Authority

The forecasts for this master plan will utilize a base year of 2023 with a long-range forecast out to 2043. At the time this chapter was prepared, only part of 2023 data had been collected. Therefore, the data for the base year of 2023 is made up from a rolling 12 months of data collected from August 2022 to the end of July 2023.

2.2 HISTORICAL ACTIVITY

Historical aviation activity at VGT includes an analysis of the critical general aviation (GA) forecast elements, including based aircraft and aircraft operations. Based aircraft, as defined by the FAA, are aircraft that are operational and airworthy, have agreements for storage at the airport, and are based at the airport longer than six months out of the year. Aircraft operations consist of either a takeoff or landing. An itinerant aircraft that arrives and departs the same day would be counted as performing two operations; likewise, those that occur with flight training “touch-and-go” practice flights – count as two operations.

Historical aircraft operations data have been compiled from the following sources:

- The Terminal Area Forecast (TAF) is the official FAA forecast of aviation activity for NPIAS airports. These forecasts are updated annually to serve the budget and planning needs of the FAA.
- The FAA’s Operations Network (OPSNET) is the official source of air traffic operations used to analyze the FAA’s air traffic control facilities. The data are reported by calendar year and include instrument flight rule (IFR) and visual flight rule (VFR) itinerant and local traffic counts worked by the tower.
- Motioninfo is an airport-hosted Automatic Dependent Surveillance-Broadcast (ADS-B) receiver that collects 24/7 aircraft flight data. The benefit of Motioninfo data is that they include operations counts that occur during the night when the ATCT at VGT is closed. The CCDOA utilizes Motioninfo-provided operational data for each of its system airports. For the years 2015 and 2019, Motioninfo data was only collected for a few months of the year. In 2015 data was collected from January through March and in 2019 data was collected from January through April. Data for these partial years is noted as incomplete.
- The FAA’s Traffic Flow Management System Counts (TFMSC) records are comprised of traffic counts by airport for various data groups, such as aircraft type or by hour of the day. The data are collected from filed flight plans and therefore include data for IFR traffic and exclude VFR operations. These are used to identify the critical aircraft.

Historical annual aircraft operations are presented in **Table 2.1**. OPSNET data are the recommended source for forecasting purposes; however, it should be noted that the data reported to OPSNET are collected and reported by the ATCT during its attended hours (6:00 a.m. to 8:00 p.m. October through March and 6:00 a.m. to 9:00 p.m. April through September). Aircraft operations that occurred when the tower was closed are not reported in OPSNET.

Table 2.1 | VGT Historical Operations Data

Year	FAA TAF	OPSNET	Motioninfo ADS-B
2013	124,362	131,426	131,386
2014	131,736	126,942	127,705
2015	133,359	135,687	*incomplete data
2016	150,293	159,430	159,425
2017	176,165	177,298	177,991
2018	173,731	168,748	168,726
2019	178,326	193,214	*incomplete data
2020	184,395	171,684	171,684
2021	159,889	162,624	164,688
2022	187,997	181,408	184,335
2023	202,434	164,781	167,483
CAGR 2013-2023	4.99%	2.29%	2.46%

Notes:

2022 and 2023 TAF data are reported as estimates. 2023 OPSNET data are represented by the last 12 months of data collected, ending July 2023. 2023 Motioninfo operations are represented by the last 12 months of data collected, ending April 2023. *In 2015 data was collected from January through March and in 2019 data was collected from January through April. Data for these partial years is noted as incomplete.

Sources: FAA TAF, March 2023; FAA OPSNET; CCDOA

Airport staff enter based aircraft counts into the National Based Aircraft Inventory Program (basedaircraft.com) to maintain up-to-date based aircraft information. At the time this forecast chapter was prepared, the validated based aircraft count was 511 aircraft. It is important to note that while 511 aircraft were validated, more aircraft have storage leases at the airport and may not meet the airworthiness requirements to be considered valid based aircraft. For the purpose of this study, the validated 511 based aircraft will be used for the 2023 base year. Historical based aircraft counts are presented in **Table 2.2**.

Table 2.2 | Historical Based Aircraft Counts

Year	No. of Based Aircraft
2013	489
2014	536
2015	530
2016	582
2017	574
2018	586
2019	594
2020	538
2021	548
2022	557
2023	511
CAGR 2013-2023	0.44%

Notes:

The 2023 data set is the validated count from basedaircraft.com accessed August 2023; the Henderson Executive Airport Master Plan data were utilized for 2013-2019. The FAA TAF was utilized for 2020-2022.

Sources: FAA TAF, March 2023; FAA National Based Aircraft Inventory Program; Henderson Executive Airport Master Plan, 2022

2.3 FORECASTING ASSUMPTIONS

As presented above, aircraft operations have gradually increased over the last ten years, while based aircraft have generally decreased. The decrease in based aircraft may be due to regional and national aviation trends. Regionally, the number of registered active aircraft in Clark County decreased by almost 200 aircraft from 2017 to 2018. This could be due to a revised inventory which identified unairworthy aircraft and removed them from registrations. Nationally, single engine and multi engine piston aircraft have declined in the national active aircraft fleet due to rising operating and ownership costs. When aircraft do not receive a current annual inspection, they are deemed unairworthy and may be removed from validated based aircraft counts. These changes in activity can also be attributed to factors such as hangar availability, on-airport services, national aviation trends, economic conditions, oil prices, and availability of capital funds. Aviation activity can be affected by many influences on the local, regional, and national levels, making it virtually impossible to predict year-to-year fluctuations of activity over 20 years with absolute certainty. Therefore, it is important to remember that forecasts are only meant to serve as guidelines and planning must remain flexible enough to respond to a range of unforeseen developments. To account for changes in activity beyond the airport's control, the following assumptions are listed below:

- The airport will continue to serve general aviation activity and will not serve scheduled air carrier activity.
- Socioeconomic data provided by Woods & Poole Economics, Inc. and the Las Vegas Convention and Visitors Authority (LVCVA) are indicative of existing and future conditions at the state and local level.
- VGT will continue to be included in the FAA's NPIAS and will remain eligible to receive grants under the Airport Improvement Program (AIP).
- A capital improvement program will continue to provide the airport with funding for future demand-based development.
- Development adjacent to the airport property will not impact or restrict airport operations.

2.4 PREVIOUS FORECASTS

Consideration is given to any forecasts of aviation demand for the airport that have been completed in the recent past. For VGT, the previous forecasts reviewed are those in the FAA TAF and the *2020 Runway Incursion Mitigation Study* (RIM Study).

Previous based aircraft and operations forecasts by source are shown in **Table 2.3**. On an annual basis, the FAA publishes the TAF for each airport included in the NPIAS. The TAF is a generalized forecast of airport activity used by the FAA primarily for internal planning purposes. It is available to airports and consultants to use as a baseline projection and is an important point of comparison when developing local forecasts. The current TAF was published in March 2023 and is based on the federal fiscal year (October-September). The TAF includes projections through 2043 for aircraft operations and based aircraft. The RIM study forecast utilized 2017 as their base year and forecast out to 2037. Operations and based aircraft beyond 2037 have been extrapolated based on the 20-year growth rate forecasted from 2017 to 2037.

Table 2.3 | Previous Forecasts

Year	TERMINAL AREA FORECAST		2020 RIM STUDY FORECAST	
	No. of Operations	No. of Based Aircraft	No. of Operations	No. of Based Aircraft
2023	202,434	554	184,179	746
2024	208,833	565	185,351	749
2025	212,458	574	186,531	751
2026	212,862	583	186,531	753
2027	213,266	592	188,914	756
2028	213,672	601	192,203	758
2029	214,079	610	193,618	760
2030	214,486	619	195,044	763
2031	214,895	628	196,481	765
2032	215,304	637	197,928	768
2033	215,714	646	201,955	770
2034	216,125	655	203,605	772
2035	216,537	665	205,269	775
2036	216,949	675	206,946	777
2037	217,363	685	208,637	782
2038	217,778	695	209,592	782
2039	218,193	705	211,269	784
2040	218,610	715	212,959	787
2041	219,027	725	214,663	789
2042	219,445	735	216,380	792
2043	219,864	745	218,111	794
CAGR 2023-2043	0.41%	1.49%	0.85%	0.31%

Notes: RIM study operations and based aircraft counts beyond 2037 have been extrapolated.

Sources: FAA TAF, March 2023; 2020 RIM Study

2.5 SOCIOECONOMIC BACKGROUND

The socioeconomic characteristics of an airport’s surrounding area can provide valuable information from which to derive an understanding of the dynamics of growth near an airport. This information is crucial in determining aviation demand level requirements, as most aviation demand is directly related to the socioeconomic conditions of the surrounding region. Statistical analysis of population, employment, and income trends outlines the economic strength of a region and can help determine the ability of the area to sustain a strong economy in the future. The geographical area studied for this analysis included the Las Vegas Metropolitan Statistical Area (MSA) and the State of Nevada. The Las Vegas MSA is comprised of Las Vegas, North Las Vegas, Henderson, Paradise, and Boulder City (see **Figure 2.1**).

Based aircraft and operations forecasts utilize historical and projected socioeconomic data, as well as other indicators such as visitor and gaming revenue statistics, to project future aviation demand. Socioeconomic data utilized include historical and projected population, employment, and per capita personal income data from Woods and Poole Economics, Inc. Historical visitor and gaming revenue data for Clark County were obtained from the LVCVA.

Historical socioeconomic data from 2013 to 2023 were analyzed to identify possible links to aviation activity at VGT. **Table 2.4** depicts a summary of the historical and projected socioeconomic data for the Las Vegas MSA and State of Nevada. Forecast visitor volume and gaming revenues were estimated using linear regression from the historical data.

Table 2.4 | Historical and Forecast Socioeconomic Indicators

Year	POPULATION		EMPLOYMENT		PER CAPITA PERSONAL INCOME		CLARK COUNTY	
	Las Vegas MSA	Nevada	Las Vegas MSA	Nevada	Las Vegas MSA	Nevada	Visitors	Gaming Revenue
Historical								
2013	2,005,429	2,770,175	1,125,627	1,561,387	\$38,799	\$39,662	39,668,221	\$9,674,404,000
2014	2,037,437	2,809,893	1,168,811	1,608,493	\$40,977	\$41,771	41,126,512	\$9,553,864,000
2015	2,077,218	2,857,230	1,216,015	1,664,654	\$43,433	\$44,490	42,312,216	\$9,617,671,000
2016	2,115,503	2,905,986	1,263,381	1,724,745	\$44,328	\$45,444	42,936,100	\$9,713,930,000
2017	2,154,413	2,956,269	1,303,282	1,780,629	\$45,979	\$47,475	42,214,200	\$9,978,503,000
2018	2,195,987	3,012,636	1,355,083	1,848,918	\$47,808	\$49,661	42,116,800	\$10,250,555,000
2019	2,238,778	3,070,422	1,387,818	1,884,215	\$50,990	\$52,577	42,523,700	\$10,355,663,000
2020	2,274,734	3,115,648	1,283,826	1,770,933	\$53,530	\$55,378	19,031,100	\$6,540,595,000
2021	2,295,194	3,146,402	1,368,492	1,875,709	\$58,207	\$60,167	32,230,600	\$11,440,422,000
2022	2,322,985	3,177,772	1,463,960	1,980,834	\$61,320	\$63,041	38,829,300	\$12,786,657,000
2023	2,366,074	3,229,868	1,511,874	2,033,602	\$65,285	\$66,886	44,766,185	\$12,896,235,889
Forecast								
2028	2,589,977	3,499,203	1,706,672	2,257,040	\$83,343	\$84,821	46,891,577	\$13,458,378,335
2033	2,826,300	3,781,062	1,895,744	2,473,936	\$105,946	\$107,362	49,016,969	\$14,866,000,872
2038	3,073,192	4,073,033	2,095,070	2,700,313	\$134,771	\$136,010	51,142,361	\$16,273,623,410
2043	3,332,582	4,377,481	2,305,532	2,937,192	\$171,143	\$172,040	53,267,753	\$17,681,245,947
CAGR								
2013-2023	1.67%	1.55%	2.99%	2.68%	5.34%	5.36%	1.22%	2.92%
2023-2043	1.73%	1.53%	2.13%	1.86%	4.94%	4.84%	0.87%	1.59%
Notes:								
CAGR = compound annual growth rate								
MSA = Metropolitan Statistical Area								
Forecasts of Clark County visitor volume and gaming revenue were developed using linear regression of 2012-2023 data. Data from 2020-2022 were excluded from the regression analysis due to the effects of COVID-19.								
All monetary values are presented in 2023 dollars to adjust for inflation.								

Sources: Woods and Poole Economics, Inc., 2023; LVCVA

2.5.1 POPULATION

The Las Vegas MSA and the State of Nevada experienced a large population growth for the historical range from 2013 to 2023. The Las Vegas MSA population grew from about 2.01 million residents in 2013 to approximately 2.36 million in 2023, resulting in a 1.67 percent compound annual growth rate (CAGR). The State of Nevada population grew from about 2.77 million residents in 2013 to approximately 3.23 million in 2023, resulting in a 1.55 percent CAGR. Population is projected to continue to grow over the next 20 years to 3.33 million people in the Las Vegas MSA and 4.37 million people in the State of Nevada by 2043, resulting in CAGRs of 1.73 percent and 1.53 percent, respectively.

2.5.2 EMPLOYMENT

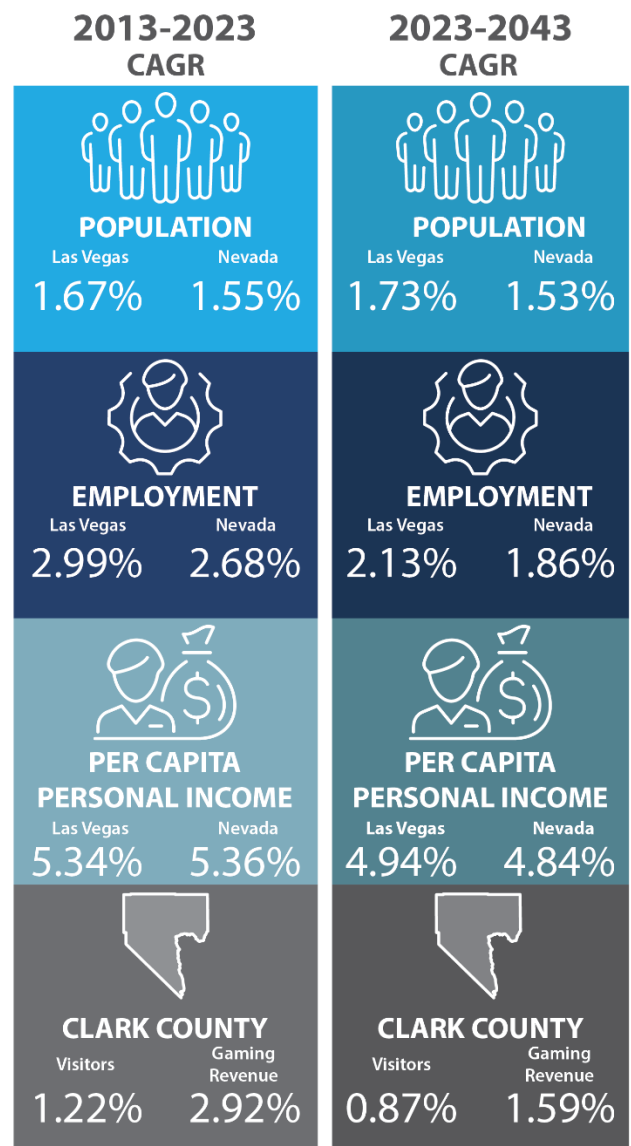
Employment (number of employed persons) in the Las Vegas MSA and State of Nevada also experienced growth, despite the effects of COVID-19. Las Vegas MSA employment grew from about 1.13 million in 2013 to 1.51 million in 2023, resulting in a 2.99 percent CAGR. State of Nevada employment grew from 1.56 million in 2013 to 2.03 million in 2023, resulting in a 2.68 percent CAGR. Employment is projected to grow to 2.3 million for the Las Vegas MSA and 2.94 million in the State of Nevada by 2043, resulting in a CAGR of 2.13 percent and 1.86 percent, respectively.

2.5.3 PER CAPITA PERSONAL INCOME

Per capita personal income (PCPI) is another way to measure the economic growth of an area and provides a broad measure of individual economic well-being. PCPI is a composite measure of market potential and indicates the general ability of persons to purchase products and services (e.g., aircraft ownership or propensity toward corporate travel). PCPI growth over the past 10 years outpaces the other socioeconomic variables considered for this analysis. Las Vegas MSA PCPI had a CAGR of 5.34 percent, while the State of Nevada had a 5.36 percent CAGR. PCPI measurements for the Las Vegas MSA and the State of Nevada are expected to continue this strong growth through 2043 with CAGRs of 4.94 percent and 4.84 percent, respectively.

2.5.4 VISITOR VOLUME AND GAMING REVENUE

Due to Clark County’s unique role as a tourism and gaming destination, historical visitor and gaming revenue data for the county were also analyzed to identify potential links to aviation activity at VGT. Historical data from 2013-2022 were obtained from LVCVA records, while the estimates for 2023 and future projections were calculated using linear regression models to extrapolate the data. Data from 2020 to 2022 were excluded from the regression analysis due to the effects of COVID-19. Annual visitor volume increased from about 39.6 million visitors in 2013 to 44.7 million in 2023, resulting in a CAGR of 1.22 percent. The regression analysis projects approximately 53.2 million visitors by 2043, resulting in a 0.87 percent CAGR.



Gaming revenue also increased from \$9.6 billion in 2013 to an estimate of \$12.9 billion in 2023, resulting in a 2.92 percent CAGR. The linear regression projection resulted in gaming revenue increasing to \$17.6 billion by 2043, a 1.59 percent CAGR.

2.6 BASED AIRCRAFT FORECASTS

Forecasts of based aircraft directly influence the planning and development of hangar space, aircraft parking aprons, taxilanes, and other related facilities. The size and type of based aircraft are also an important consideration, as they impact airfield design standards. The applicable design standards may include separation distances and object clearing surfaces. The addition of numerous small aircraft may have no effect on design standards, while the addition of a few larger business jets can have a substantial impact on design standards.

Due to the numerous variables known to influence aviation demand, several separate forecasts of based aircraft are developed. Each forecast is then examined for reasonableness, and any outliers are discarded or given less weight. The remaining forecasts will collectively create a planning envelope. A single planning forecast is then selected for use in developing facility needs for the airport. The selected forecast of based aircraft can be one of the several forecasts developed, or it can be a blend of the forecasts, based on the experience and judgement of the forecaster.

As previously mentioned, based aircraft are defined by the FAA as aircraft considered airworthy, stored at the airport for the majority of the year, and have a storage agreement with the airport. The FAA-validated based aircraft count for VGT was 511 aircraft at the time this forecast was developed; therefore, 511 aircraft are represented as the base count for 2023. Based aircraft at VGT during the planning horizon from 2023 to 2043 were forecasted using several methodologies, resulting in a recommended methodology and forecast.

2.6.1 BASED AIRCRAFT – SOCIOECONOMIC VARIABLE FORECASTS

Historical and forecast socioeconomic data were provided by Woods & Poole Economics, Inc. and the LVCVA, and were previously discussed in Section 2.5 and depicted in **Table 2.4**. Socioeconomic forecasts for based aircraft projected that the change in the number of based aircraft at VGT beyond 2023 would reflect the projected growth rates observed for population, employment, PCPI, Clark County visitor volume, and Clark County gaming revenue through 2043 within in the respective service areas. The projected based aircraft forecasts that applied this socioeconomic variable method are depicted in **Table 2.5**.

Table 2.5 | Based Aircraft – Socioeconomic Variable Forecast

Year	POPULATION		EMPLOYMENT		PER CAPITA PERSONAL INCOME		CLARK COUNTY	
	Las Vegas MSA	Nevada	Las Vegas MSA	Nevada	Las Vegas MSA	Nevada	Visitors	Gaming Revenue
2023	511	511	511	511	511	511	511	511
2028	557	551	568	560	650	647	534	553
2033	606	595	631	614	827	820	557	598
2038	661	642	701	673	1,053	1,038	582	647
2043	720	693	779	738	1,340	1,314	608	701
CAGR 2023-2043	1.73%	1.53%	2.13%	1.86%	4.94%	4.84%	0.87%	1.59%

Notes:

CAGR = compound annual growth rate

MSA = Metropolitan Statistical Area

Forecasts of Clark County visitor volume and gaming revenue were developed using linear regression of 2012-2023 data. Data from 2020-2022 were excluded from the regression analysis due to the effects of COVID-19.

Sources: Woods & Poole Economics, Inc., 2023; LVCVA; Coffman Associates analysis

As shown in **Table 2.5**, based aircraft forecasts predicted on socioeconomic projections indicate that based aircraft at VGT may range from 608 to 1,340 by 2043. This range reflects CAGRs of 0.87 percent to 4.94 percent during the planning period.

2.6.2 BASED AIRCRAFT – REGIONAL MARKET SHARE FORECAST

Market share forecasts look at an individual airport’s share of a certain aviation component (i.e., based aircraft) within the context of a larger market. A market share analysis for based aircraft was developed using FAA TAF projections of based aircraft at five public-use airports within a 50-mile radius of VGT which serve the Las Vegas Valley: Henderson Executive Airport (HND), Jean Airport (OL7), Boulder City Municipal Airport (BVU), Perkins Field Airport (U08), and Harry Reid International Airport (LAS).

The purpose of examining forecasts of neighboring airport activity is to account for variables that may impact the regional airport system or to identify factors that could affect based aircraft trends at VGT, compared with like airports (e.g., differences in airport facilities, services, rates, etc.). Historical based aircraft from the TAF at these neighboring facilities and VGT’s corresponding regional market share are shown in **Table 2.6** and **Figure 2.2**.

Table 2.6 | Historical Market Share of Based Aircraft

Year	NUMBER OF BASED AIRCRAFT							% North Las Vegas Airport
	North Las Vegas Airport	Henderson Executive Airport	Jean Airport	Boulder City Municipal Airport	Perkins Field Airport	Harry Reid International Airport	Total	
2013	489	254	36	234	15	126	1,154	42.4%
2014	536	254	36	226	13	125	1,190	45.0%
2015	530	252	20	227	11	133	1,173	45.2%
2016	582	243	35	239	12	132	1,243	46.8%
2017	574	243	34	240	12	180	1,283	44.7%
2018	586	244	35	240	12	180	1,297	45.2%
2019	594	266	35	240	12	180	1,327	44.8%
2020	538	247	21	240	1	176	1,223	44.0%
2021	548	262	20	240	1	176	1,247	43.9%
2022	557	263	21	240	1	188	1,270	43.9%
2023	511	254	10	256	19	188	1,238	41.3%
CAGR 2013-2023	0.44%	0.00%	-12.02%	0.90%	2.39%	4.08%	0.71%	-

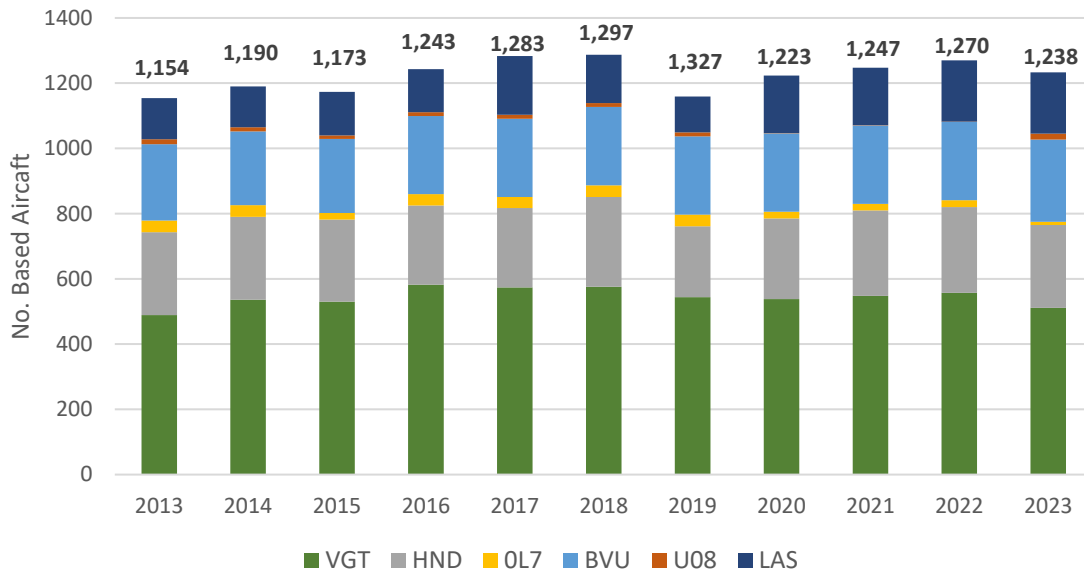
Notes:

CAGR = compound annual growth rate

Data for years 2013-2019 were obtained from the 2022 *Henderson Executive Airport Master Plan*. 2023 based aircraft figures for North Las Vegas, Henderson, Jean, and Perkins Field airports were obtained from the FAA National Based Aircraft Inventory Program; 2020-2022 utilized the FAA TAF; 2023 counts for Boulder City and Harry Reid airports were obtained from FAA Form 5010, *Airport Master Records*.

Sources: FAA TAF, March 2023; FAA National Based Aircraft Inventory Program, accessed August 2023; FAA Form 5010, *Airport Master Records*, accessed August 2023; *Henderson Executive Airport Master Plan, 2022*

Figure 2.2 - Regional Market Share - Historical Based Aircraft



Sources:

FAA Terminal Area Forecast, March 2023
National Based Aircraft Inventory Program

The FAA TAF forecasts of based aircraft at other airports within the region were used as the basis for analysis of the regional market share forecast. As shown in **Table 2.6**, VGT’s regional market share of based aircraft has ranged between 41.3 and 46.8 percent in the past 10 years. Each regional airport included in the analysis has experienced fluctuations in based aircraft since 2013, with periods of rising and falling based aircraft levels. It is difficult to identify specific causes for the fluctuations, but the region reached its peak number of based aircraft in 2019, prior to the COVID-19 pandemic, which may have caused numbers to drop in 2020. Jean Airport is the only airport that has experienced an overall decline in total based aircraft for the 10-year period.

The regional market share forecast of based aircraft included low-, medium-, and high-growth scenarios (see **Table 2.7**). The low-growth scenario assumed that VGT’s 2023 market share – 41.3 percent of total based aircraft in the region – would remain constant throughout the planning period. This market share was applied to FAA TAF forecasts of based aircraft at other airports within the region and resulted in 639 based aircraft at VGT by 2043, which resulted in a CAGR of 1.12 percent.

Table 2.7 | Based Aircraft – Regional Market Share Forecast

Year	Regional Based Aircraft	LOW		MEDIUM		HIGH	
		Forecast Based Aircraft	Market Share	Forecast Based Aircraft	Market Share	Forecast Based Aircraft	Market Share
2023	1,238	511	41.3%	511	41.3%	511	41.3%
2028	1,351	557	41.3%	570	42.2%	584	43.2%
2033	1,413	583	41.3%	610	43.2%	638	45.1%
2038	1,479	611	41.3%	653	44.2%	696	47.1%
2043	1,547	639	41.3%	698	45.1%	758	49.0%
CAGR 2023-2043	1.12%	1.12%	-	1.57%	-	1.99%	-

Note:
CAGR = compound annual growth rate

Sources: FAA TAF, March 2023; FAA National Based Aircraft Inventory Program, August 2023; Coffman Associates analysis

The high-growth scenario assumed that VGT’s market share of regional based aircraft would increase to 49.0 percent by the end of the 20-year planning period, which is viewed as a reasonable possibility if hangar capacity at VGT is expanded to support new tenants, including growth by the airport’s flight training schools. VGT’s centralized location within the Las Vegas Valley and proximity to downtown Las Vegas make it an attractive airport for corporate/business operators, as well as all manner of GA operators. The high-growth scenario projected 758 based aircraft by 2043, resulting in a 1.99 percent growth rate.

The medium-growth scenario was developed by averaging the 2043 market share percentage from the high- and low-growth scenarios. This resulted in 698 based aircraft projected in 2043 and a CAGR of 1.57 percent.

2.6.3 BASED AIRCRAFT – LINEAR REGRESSION FORECAST

A linear regression analysis can be an effective method to project future activity based on historical variables.

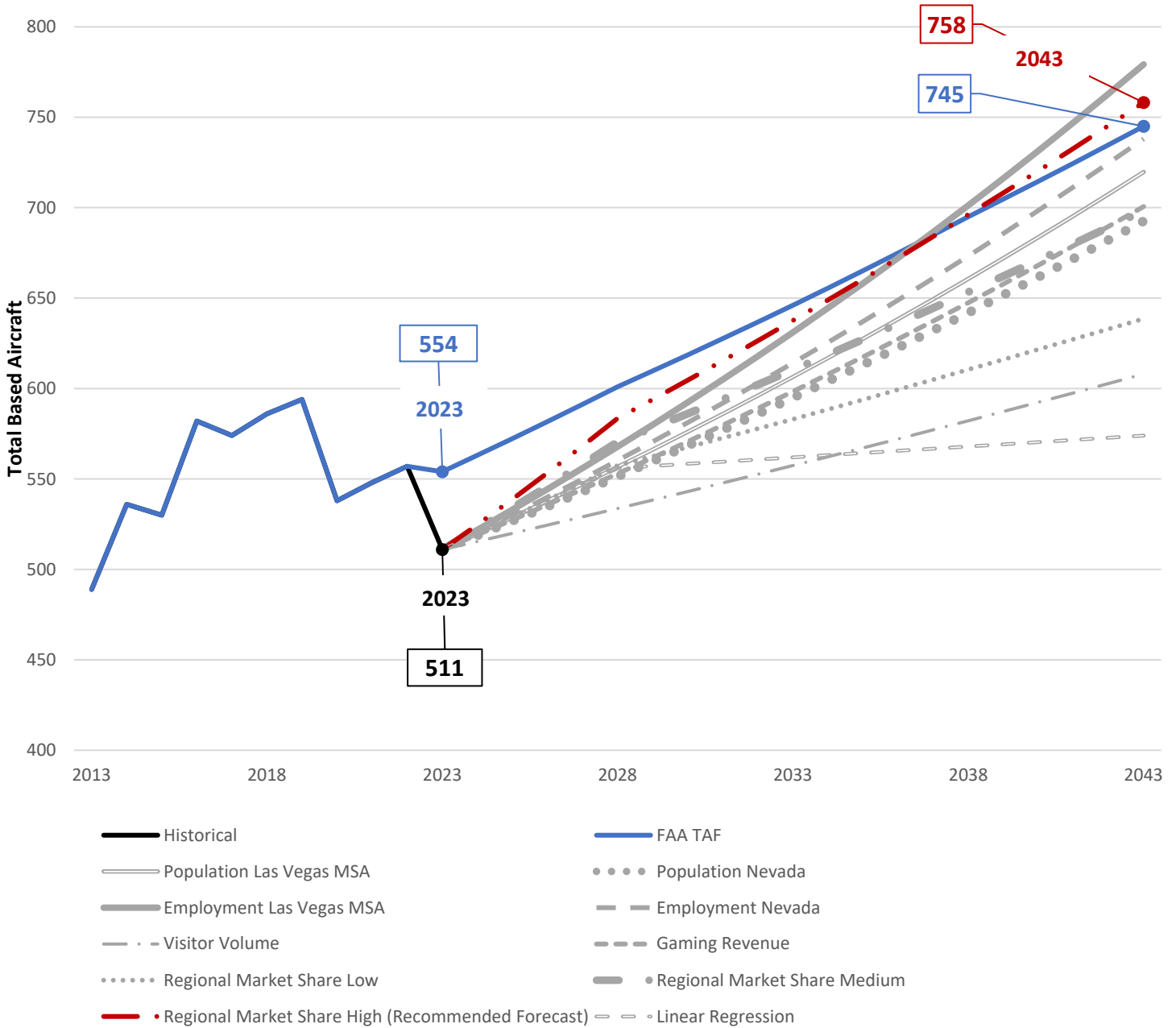
The linear regression method for the based aircraft forecast analyzed historical based aircraft counts from 2013 through 2023. The resulting forecast is shown in **Table 2.8** for informational purposes. The forecast resulted in 574 based aircraft by 2043 and a CAGR of 0.58 percent.

Year	No. of Based Aircraft
Historical	
2013	489
2014	536
2015	530
2016	582
2017	574
2018	586
2019	594
2020	538
2021	548
2022	557
2023	511
Forecast	
2028	556
2033	562
2038	568
2043	574
CAGR 2023-2043	0.58%
Notes: CAGR = compound annual growth rate The 2023 data set is the validated count from basedaircraft.com, accessed August 2023; the <i>Henderson Executive Airport Master Plan</i> data were utilized for 2013-2019. The FAA TAF was utilized for 2020-2022. <i>Sources: FAA TAF, March 2023; FAA National Based Aircraft Inventory Program; Henderson Executive Airport Master Plan, 2022</i>	

2.6.4 BASED AIRCRAFT – RECOMMENDED METHODOLOGY

VGT is a hub for flight training, helicopter tours, and personal and business flying in the Las Vegas Valley. These aviation market segments are anticipated to continue to grow as the airport continues to develop and expand its capacity to accommodate more aircraft, including a more diverse fleet mix to include more corporate aircraft. Additionally, the airport has an existing demand for more based aircraft storage needs as evident of the 134 individuals on the hangar waiting list. Therefore, the recommended forecast for based aircraft is the regional market share high-growth scenario. In the past 10 years, VGT has reached a regional market share of almost 47 percent, so it is reasonable for a 49 percent market share to be reached in the next 20 years. This forecast projects 758 based aircraft by 2043, reflecting a 1.99 percent CAGR. A summary of the methodologies used to forecast based aircraft is depicted in **Figure 2.3**. The socioeconomic variable forecasts – PCPI for Las Vegas MSA and State of Nevada – are not shown, as they are considered outliers due to the substantial difference from the other forecasts.

Figure 2.3 - Based Aircraft Forecast Methodology Summary



Sources:
 Woods & Poole Economics, Inc.
 Las Vegas Convention and Visitors Authority
 FAA Terminal Area Forecast, March 2023
 FAA National Based Aircraft Inventory Program
 Coffman Associates, 2023

2.6.5 BASED AIRCRAFT – FLEET MIX FORECAST

An airport’s fleet mix impacts airport infrastructure, including pavement strength, storage, tie-downs, and parking aprons. Like many general aviation airports, VGT’s fleet mix is mainly comprised of single-engine piston (SEP) aircraft. Based on the information received from the National Based Aircraft Inventory Program, reported in July of 2023, VGT had 406 SEP aircraft, 48 multi-engine piston (MEP) aircraft, 18 turboprop (TP) aircraft, 14 jet aircraft, and 25 rotorcraft (HELO).

VGT’s fleet mix forecast was developed based on industry trends identified in the FAA Aerospace Forecasts (2023-2043), as well as general assumptions regarding existing and potential future tenants and the types of aircraft they operate. These assumptions incorporated local and national aviation trends which describe growth in corporate turboprop and jet aircraft. Although the national aerospace forecast predicts declines in smaller piston-powered aircraft, VGT is anticipated to continue as a primary flight training hub and therefore will continue to increase its smaller piston aircraft fleet. Additionally, more affordable experimental and light sport aircraft will replace the older piston fleet as they become more expensive to operate and maintain for personal flying.

The existing and forecast based aircraft fleet mix is presented in **Table 2.9** and in **Figure 2.4**. By 2043, SEP aircraft will continue to make up the majority of aircraft based at VGT; however, the representative share of piston aircraft will have decreased slightly, giving way to the anticipated growth in turbine aircraft, like turboprop and jet aircraft. SEP aircraft are projected to increase from 406 to 584 aircraft, representing a 1.84 percent CAGR and a reduction in fleet mix share from 79 percent in 2023 to 77 percent by 2043. MEP aircraft are projected to decrease from 48 in 2023 to 46 by 2043, reducing the fleet mix share from nine percent to six percent. Turboprop aircraft are anticipated to grow from 18 in 2023 to 45 by 2043, representing a 4.69 percent CAGR and an increase in fleet mix share from four percent in 2023 to six percent by 2043. Similarly, jet aircraft are projected to experience growth from 14 based aircraft in 2023 to 38 by 2043, representing a 5.12 percent CAGR and an increase in fleet mix share from three percent in 2023 to five percent by 2043. Rotorcraft are also anticipated to grow from 25 in 2023 to 45 aircraft by 2043, resulting in a 2.98 percent CAGR and a fleet mix share increase from five percent to six percent.

Table 2.9 | Based Aircraft Fleet Mix Forecast

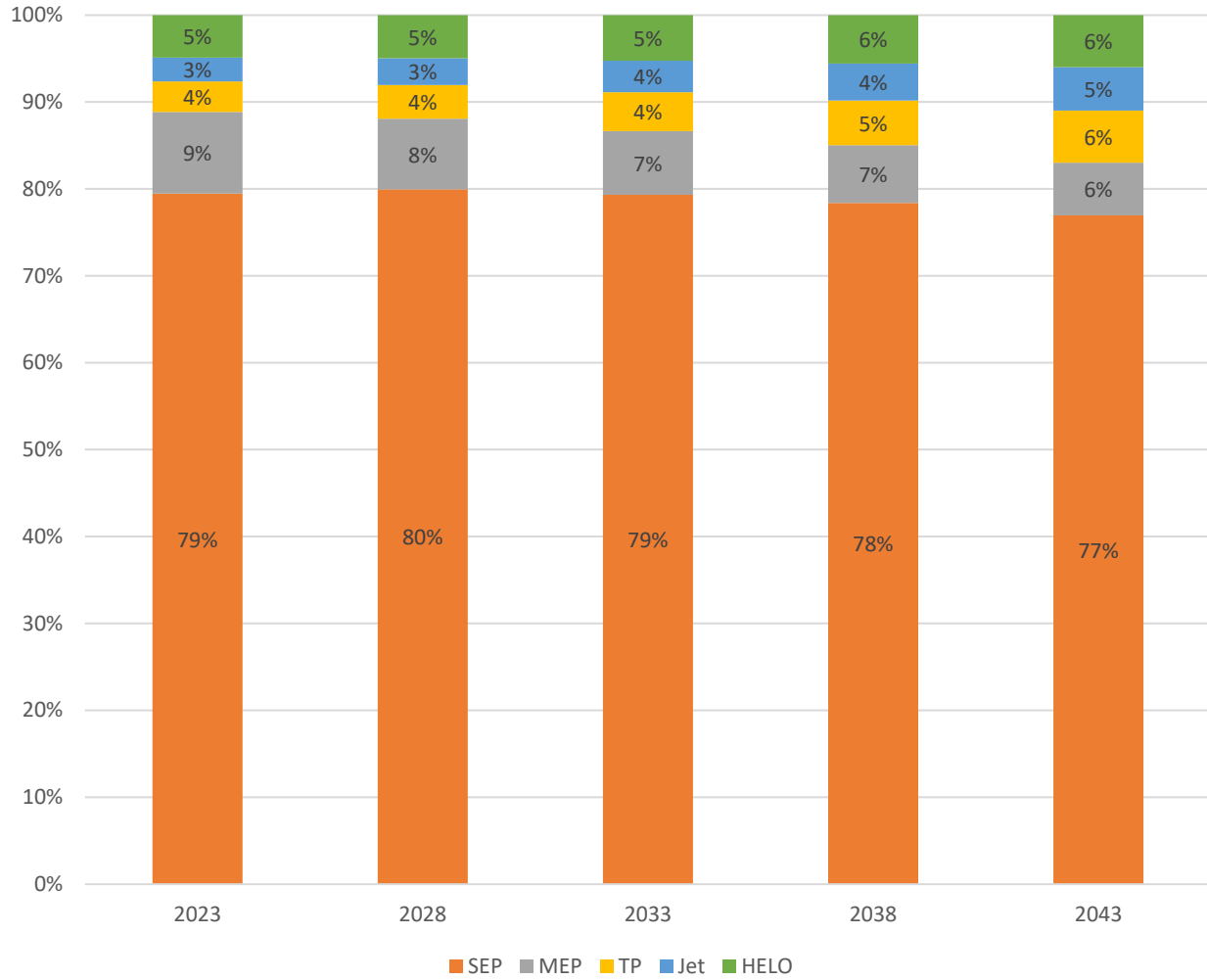
Year	Total	SEP	%	MEP	%	TP	%	Jet	%	HELO	%
2023	511	406	79%	48	9%	18	4%	14	3%	25	5%
2028	584	467	80%	47	8%	23	4%	18	3%	29	5%
2033	638	506	79%	47	7%	28	4%	23	4%	34	5%
2038	696	546	78%	46	7%	36	5%	30	4%	39	6%
2043	758	584	77%	46	6%	45	6%	38	5%	45	6%
CAGR 2023-2043	1.99%	1.84%	-	-0.21%	-	4.69%	-	5.12%	-	2.98%	-

Notes:







SEP = single-engine piston aircraft
 MEP = multi-engine piston aircraft
 TP = turboprop aircraft
 HELO = rotorcraft
 CAGR = compound annual growth rate

Sources: FAA Aerospace Forecast, FY 2023-2043; FAA National Based Aircraft Inventory Program; Coffman Associates analysis

Figure 2.4 - Based Aircraft Fleet Mix Forecast



Sources:
 FAA Aerospace Forecast, 2023-2043
 National Based Aircraft Inventory Program
 Coffman Associates, 2023

YEAR											
	Total	Single-Piston	%	Multi-Piston	%	Turbo-Prop	%	Jet	%	Rotorcraft	%
2023	511	406	79%	48	9%	18	4%	14	3%	25	5%
2028	584	467	80%	47	8%	23	4%	18	3%	29	5%
2033	638	506	79%	47	7%	28	4%	23	4%	34	5%
2038	696	546	78%	46	7%	36	5%	30	4%	39	6%
2043	758	584	77%	46	6%	45	6%	38	5%	45	6%
CAGR (2023-2043)	1.99%	1.84%	-	-0.21%	-	4.69%	-	5.12%	-	2.98%	-

Source: FAA Aerospace Forecast FY 2023-2043; FAA National Based Aircraft Inventory Program; Coffman Associates Analysis

2.7 AIRCRAFT OPERATIONS FORECASTS

Annual aircraft operation forecasts are used to determine funding needs and establish airfield design criteria at airports, as well as to evaluate airfield capacity. There are multiple sources which capture aircraft operations at VGT. Airports with air traffic control towers (ATCTs) manually log takeoff and landing data from local and itinerant aircraft; these data are entered in the FAA’s OPSNET database. The CCDOA also utilizes the Motioninfo system, which collects Automatic Dependent Surveillance-Broadcast (ADS-B) information from aircraft operating at and around VGT and the other CCDOA system airports. OPSNET data collection is limited in that it only includes operations data collected during the operating hours of the control tower; therefore, aircraft operations that occur at night while the tower is unattended are not captured. Motioninfo continually collects aircraft data 24/7; however, this data set does not differentiate between general aviation, air taxi, or military operations. As a result, to fully understand the various components of total operations at VGT, the FAA’s OPSNET data must be used as the baseline for generating new forecasts.

Annual aircraft operations at VGT are influenced by the number of based aircraft; area socioeconomics; based tenants; local and national economic and aerospace trends; proximity to other airports; and the capability and conditions of the airport facilities. General aviation operations forecasts were developed using several methodologies, including socioeconomic variable comparison, regional market share, and operations per based aircraft. VGT also experiences a minimal amount of military and air taxi operations, which are forecasted later in this section.

2.7.1 GENERAL AVIATION OPERATIONS – SOCIOECONOMIC VARIABLE FORECAST

Forecasts of general aviation operations were developed using the same socioeconomic methodologies utilized for the based aircraft forecasts presented in the previous section. The forecasts used a socioeconomic comparison for population, employment, and PCPI for the Las Vegas MSA and the State of Nevada, as well as Clark County visitor volume and gaming revenue data. Socioeconomic data were previously shown in **Table 2.4** in the based aircraft forecast section. This forecast method assumed that annual general aviation operations would change at the same rate as the socioeconomic indicators. The results of this forecast are shown in **Table 2.10**.

Table 2.10 | General Aviation Operations – Socioeconomic Variable Forecast

Year	POPULATION		EMPLOYMENT		PCPI		CLARK COUNTY	
	Las Vegas MSA	Nevada	Las Vegas MSA	Nevada	Las Vegas MSA	Nevada	Visitors	Gaming Revenue
2023	150,478	150,478	150,478	150,478	150,478	150,478	150,478	150,478
2028	163,931	162,361	167,219	164,964	191,474	190,567	157,163	162,830
2033	178,587	175,183	185,824	180,845	243,638	241,335	164,146	176,197
2038	194,553	189,018	206,497	198,254	310,015	305,628	171,439	190,660
2043	211,946	203,945	229,471	217,340	394,474	387,050	179,055	206,311
CAGR (2023-2043)	1.73%	1.53%	2.13%	1.86%	4.94%	4.84%	0.87%	1.59%

Notes:

PCPI = per capita personal income

Forecasts of Clark County visitor volume and gaming revenue were developed using linear regression of 2013-2022 data.

Source: FAA OPSNET; Woods & Poole Economics, Inc., 2023; LVCVA; Coffman Associates, 2023

As shown in the table above, this forecast method resulted in a range of 179,055 to 394,474 annual general aviation operations by 2043, resulting in CAGRs ranging from 0.87 percent to 4.94 percent.

2.7.2 GENERAL AVIATION OPERATIONS – REGIONAL MARKET SHARE FORECAST

The regional market share methodology compared VGT’s general aviation aircraft operations to general aviation operations at the five public-use airports within a 50-mile radius of VGT. Like the regional market share forecast for based aircraft, this method compared activity at VGT with FAA TAF and OPSNET activity of general aviation operations at regional airports. These data are displayed in **Table 2.11** and **Figure 2.5**.

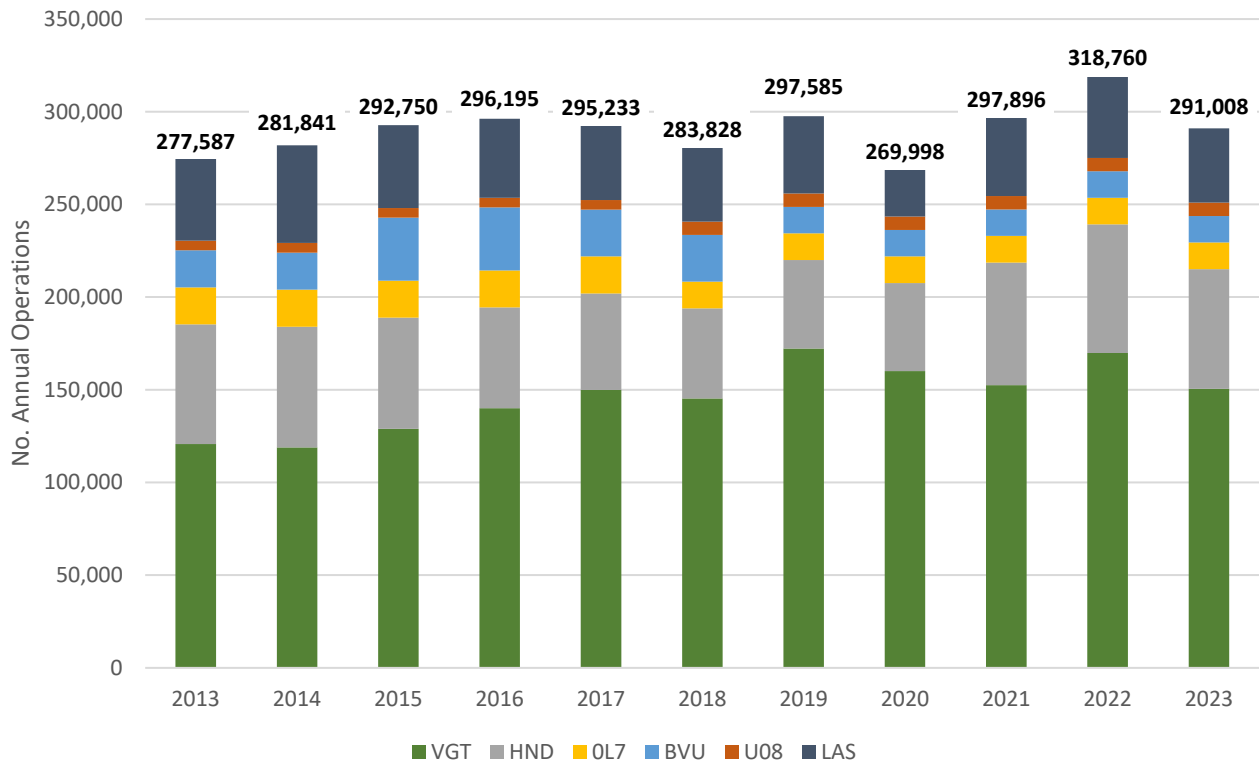
Table 2.11 | Historical Market Share of General Aviation Operations

Year	NUMBER OF ANNUAL GENERAL AVIATION AIRCRAFT OPERATIONS							% North Las Vegas Airport
	North Las Vegas Airport	Henderson Executive Airport	Jean Airport	Boulder City Municipal Airport	Perkins Field Airport	Harry Reid International Airport	Total	
2013	120,697	64,537	20,000	20,000	5,200	47,153	277,587	43.5%
2014	118,920	65,052	20,000	20,000	5,200	52,669	281,841	42.2%
2015	128,877	59,997	20,000	33,970	5,200	44,706	292,750	44.0%
2016	140,031	54,377	20,000	33,970	5,200	42,617	296,195	47.3%
2017	149,869	52,063	20,000	25,210	5,200	42,891	295,233	50.8%
2018	145,286	48,604	14,400	25,210	7,200	43,128	283,828	51.2%
2019	172,257	47,742	14,400	14,260	7,200	41,726	297,585	57.9%
2020	160,041	47,546	14,400	14,260	7,200	26,551	269,998	59.3%
2021	152,498	66,132	14,400	14,260	7,200	43,406	297,896	51.2%
2022	169,862	69,321	14,400	14,260	7,200	43,717	318,760	53.3%
2023	150,478	64,589	14,400	14,260	7,200	40,081	291,008	51.7%
CAGR 2013-2023	2.23%	0.01%	-3.23%	-3.33%	3.31%	-1.61%	0.47%	-

Notes:
North Las Vegas, Henderson, and Harry Reid 2013-2022 operations data are from FAA OPSNET. 2023 data are the last 12 months of OPSNET operations, ending July 2023. Boulder City, Jean, and Perkins operations data are from FAA TAF records.

Sources: FAA OPSNET; FAA TAF, March 2023; Coffman Associates, 2023

Figure 2.5 - Historical General Aviation Operations



Sources:
FAA OPSNET
FAA TAF, March 2023

The regional market share forecasts were developed for general aviation aircraft operations. The low-growth scenario assumed that the airport’s market share of 51.7 percent of total general aviation operations in the region would remain constant throughout the planning horizon. This figure was applied to FAA TAF and OPSNET forecasts of general aviation operations at airports within the region and resulted in 212,699 general aviation operations in 2043, which represents a CAGR of 1.75 percent (see **Table 2.12**). The high-growth scenario assumed VGT’s market share of regional general aviation operations would increase to 60 percent by the end of the 20-year planning horizon – a return to a historical high market share, which was achieved during 2020. This methodology projected 246,801 general aviation operations by 2043 and a CAGR of 2.50 percent.

Table 2.12 | General Aviation Operations – Regional Market Share Forecast

Year	Regional GA Operations	LOW		MEDIUM		HIGH	
		VGT Operations	VGT Market Share	VGT Operations	VGT Market Share	VGT Operations	VGT Market Share
2023	291,008	150,478	51.7%	150,478	51.7%	150,478	51.7%
2028	346,676	179,263	51.7%	182,856	52.7%	186,449	53.8%
2033	365,802	189,153	51.7%	196,735	53.8%	204,317	55.9%
2038	387,021	200,126	51.7%	212,158	54.8%	224,191	57.9%
2043	411,336	212,699	51.7%	229,750	55.9%	246,801	60.0%
CAGR 2023-2043	1.75%	1.75%	-	2.14%	-	2.50%	-

Notes:

CAGR = compound annual growth rate

2023 data are the last 12 months of OPSNET operations, ending July 2023

Source: FAA TAF, March 2023; FAA OPSNET; Coffman Associates analysis

The medium-growth scenario was developed by averaging the product of the high- and low-growth scenarios, which resulted in 229,750 general aviation operations in 2043 and a CAGR of 2.14 percent.

2.7.3 GENERAL AVIATION OPERATIONS – OPERATIONS PER BASED AIRCRAFT FORECAST

Another methodology to forecast general aviation operations used a ratio of operations per based aircraft to estimate future demand. The operations per based aircraft methodology assumed that the ratio of general aviation operations to based aircraft in base year 2023 (294) would remain constant throughout the 20-year forecast horizon (see **Table 2.13**). This ratio was applied to the recommended based aircraft forecast described in the previous section. As shown, this methodology resulted in 222,896 general aviation operations by 2043 and a CAGR of 1.99 percent.

Table 2.13 | General Aviation Operations – Operations per Based Aircraft Forecast

Year	Recommended Forecast – Based Aircraft	General Aviation Operations	Operations per Based Aircraft
2023	511	150,478	294
2028	584	171,554	294
2033	638	187,452	294
2038	696	204,683	294
2043	758	222,896	294
CAGR 2023-2043	1.99%		-
Note: CAGR = compound annual growth rate			

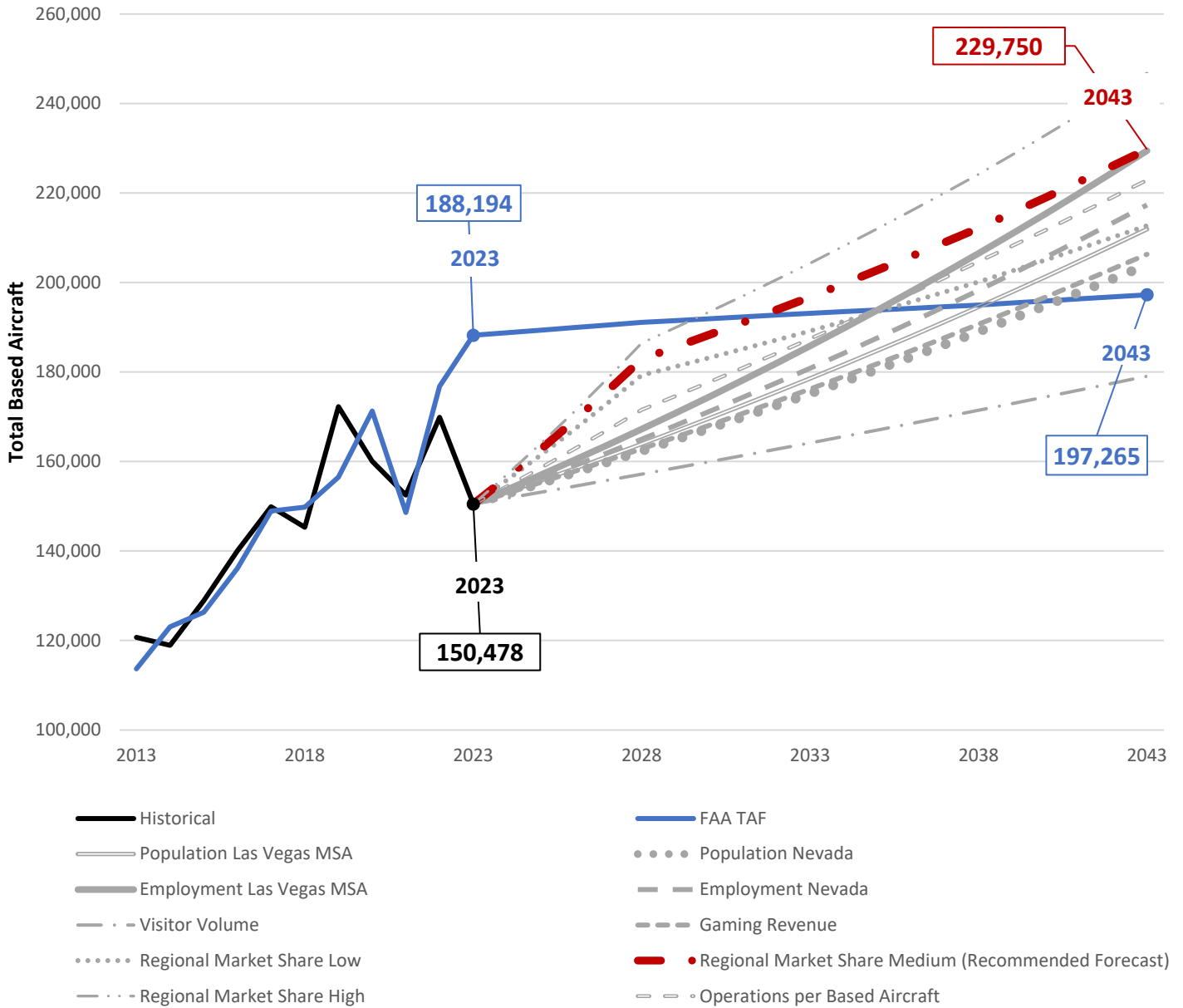
Source: FAA National Based Aircraft Inventory Program; FAA OPSNET; Coffman Associates analysis, 2023

2.7.4 GENERAL AVIATION OPERATIONS – RECOMMENDED METHODOLOGY

General aviation operations at VGT are characterized by fluctuating between rising and falling over the last 10-year period. Flight training activities have experienced a 29 percent increase just in the past five years, and transient general aviation is also increasing, exceeding 6,000 monthly operations during the spring months of 2023 (March through May). These numbers put VGT on pace for one of its busiest years in terms of transient general aviation activity since 2007. The airport has remained a flight training hub and anticipates continuance of that market, especially as the airlines look to replace retiring pilots. Based on discussions with airport management, CCDOA staff, and existing airport tenants, there is strong demand for hangar development and desire for businesses (especially flights schools) to base their business at the airport. Strong economic growth is projected for the Las Vegas Valley, providing more aviation opportunities in terms of based aircraft, increased flight training, and corporate aviation activities.

The various general aviation operations projections resulted in a forecast envelope between 179,055 and 394,474 by 2043 and CAGRs of between 0.87 percent and 4.94 percent. The PCPI projections appear to be outliers, with CAGRs of 4.94 and 4.84 percent, which are well above the other forecasts and exceed what would be considered reasonable based on historical activity. For this reason, the PCPI projections are excluded from the general aviation operations forecast summary in **Figure 2.6**. Over the past 10 years general aviation operations at VGT have grown at a 2.23 percent CAGR. The regional market share – medium-growth scenario, which has a CAGR of 2.14 percent, is nearest this historical rate. Therefore, the regional market share – medium-growth scenario forecast, which projects 229,750 total general aviation operations by 2043, will be used for long-range planning.

Figure 2.6 - General Aviation Operations Forecast Methodology Summary



Sources:
 Woods & Poole Economics, Inc.
 Las Vegas Convention and Visitors Authority
 FAA Terminal Area Forecast, February 2023
 FAA OPSNET
 Coffman Associates, 2023

2.7.5 AIR TAXI OPERATIONS FORECAST

Air taxi operations are those conducted by aircraft operating under Federal Aviation Regulation (FAR) Part 135, otherwise known as “for-hire” or “on-demand” activity. Air taxi operations typically include air tour, air cargo, air ambulance, and fractional ownership operations. Over the past 10 years, air taxi operations reached a peak of 24,125 operations in 2017, when the airport had significant helicopter air tour activities. The COVID-19 pandemic caused air tour operations to significantly decline at VGT from 2020 to 2022; however, the most recent 12 months of activity, ending in July 2023, have seen air taxi operations increase to 12,489. The overall 10-year CAGR for VGT air taxi operations is 2.8 percent.

Table 2.14 | Air Taxi Operations Forecast

Year	VGT AT Operations	Nevada AT Operations	VGT Market %
2013	9,506	266,266	3.6%
2014	6,791	266,958	2.5%
2015	5,499	260,656	2.1%
2016	17,297	272,333	6.4%
2017	24,125	295,294	8.2%
2018	20,640	283,245	7.3%
2019	19,214	318,118	6.0%
2020	10,130	240,677	4.2%
2021	8,741	280,985	3.1%
2022	9,607	320,226	3.0%
2023	12,489	317,933	3.9%
CAGR (2013-2023)	2.8%	1.8%	--
2028	13,721	345,483	4.0%
2033	15,075	355,662	4.2%
2038	16,563	366,366	4.5%
2043	18,197	377,607	4.8%
CAGR (2023-2043)	1.9%	0.9%	--
Notes:			
AT = air taxi			
CAGR = compound annual growth rate			
2023 OPSNET data are the last 12 months of operations through July 2023.			
VGT data combine air taxi and air carrier operations from OPSNET.			
<i>Sources: FAA OPSNET; FAA TAF, State of Nevada; Coffman Associates, 2023</i>			

To develop a forecast of air taxi operations, a market share analysis was conducted comparing air taxi operations at VGT with all airports in the State of Nevada (see **Table 2.14**). The FAA projects air taxi operations in the state to grow at a CAGR of 0.9 percent over the next 20 years, which is below the last 10-year rate of 1.8 percent. Air taxi operations at VGT are on the rise and should continue to outpace growth at the state level. The forecast results in 18,197 air taxi operations at VGT by 2043 at a 1.9 percent CAGR.

2.7.6 MILITARY OPERATIONS FORECAST

VGT experiences limited military operations. Since 2013, military activity has accounted for 1.14 percent of annual operations at VGT. According to the FAA’s OPSNET database, VGT experienced 1,662 itinerant and 277 local military operations in 2022. Over the most recent 12-month period, military operations have totaled 1,593 itinerant and 221 local operations for a combined total of 1,814, which is on pace with previous years.

Military operations at public-use airports can be difficult to predict, as military aviation activity is not typically tied to the same drivers that impact general aviation. As such, the FAA’s TAF forecast is the preferred methodology for analyzing military operations at VGT. The FAA’s TAF projects 1,443 itinerant, 321 local, and 1,764 total military operations annually between 2023 and 2043 (see **Table 2.15**). The following subsections present various forecasts of total operations (general aviation plus military).

Table 2.15 | Military Operations Forecast

Year	Itinerant Military Operations	Local Military Operations	Total Military Operations
2013	829	394	1,223
2014	885	346	1,231
2015	1,079	232	1,311
2016	1,605	497	2,102
2017	2,381	923	3,304
2018	2,192	630	2,822
2019	1,312	431	1,743
2020	1,124	389	1,513
2021	860	525	1,385
2022	1,662	277	1,939
2023	1,593	221	1,814
CAGR (2013-2023)	6.7%	-5.6%	4.0%
2028	1,443	321	1,764
2033	1,443	321	1,764
2038	1,443	321	1,764
2043	1,443	321	1,764
CAGR (2023-2043)	-0.5%	1.9%	-0.1%

Notes:
CAGR = compound annual growth rate
2023 operations reported through July.

Sources: FAA OPSNET; FAA TAF

2.7.7 LOCAL/ITINERANT OPERATIONS FORECAST

Aircraft operations are classified as local or itinerant. Local operations are those conducted by aircraft that remain within a 20-mile radius of an airport and include touch-and-go operations and most training activity. Itinerant operations are performed by aircraft that land at an airport, arriving from outside the airport area, or depart an airport and leave the airport’s 20-mile radius prior to their return.

Between 2013 and 2023, the proportion of local operations at VGT remained consistent, only gaining one percent (51 percent in 2013 to 52 percent in 2023). There was significant increase in local operations between 2017 and 2022 due to local pilot training, which increased local operations, and the effects of COVID-19, which decreased itinerant operations. Through the recovery from COVID-19, the ratio has returned to pre-pandemic levels, and the airport will continue to support a wide range of tenants and aviation activity types that generate local and itinerant operations.

As evidenced by the based aircraft fleet mix forecast, non-corporate-type aircraft are projected to maintain a presence at VGT. It is anticipated that the proportion of local operations at the airport will increase linearly from 52 percent of total operations in 2023 to 60 percent by 2043. As shown in **Table 2.16**, the airport is projected to experience 99,884 itinerant operations and 149,827 local operations by 2043.

Table 2.16 | Local/Itinerant Operations Forecast

Year	Total Operations	Local Operations	% Local	Itinerant Operations	% Itinerant
2023	164,781	85,638	52%	79,143	48%
2028	198,342	107,105	54%	91,237	46%
2033	213,575	119,602	56%	93,973	44%
2038	230,485	133,681	58%	96,804	42%
2043	249,711	149,827	60%	99,884	40%
CAGR 2023-2043	2.10%	2.84%	-	1.17%	-

Notes:

CAGR = compound annual growth rate
2023 OPSNET data are the last 12 months of operations through July 2023.

Source: FAA OPSNET; Coffman Associates analysis

2.7.8 DAYTIME/EVENING OPERATIONS FORECAST

Another component examined for this analysis was forecasts of daytime and evening operations. This is an important element to include in the planning process because noise impacts created by aircraft arriving or departing at night are greater than during the day. The FAA defines nighttime operations as those that are conducted between 10:00 p.m. and 7:00 a.m.

The FAA’s TFMSC distributed operational network database creates a summary of traffic by day and hour based on the departure and arrival message times received by the FAA Air Traffic Airspace lab. According to these data, evening operations have represented 6.9 percent of total operations in 2022 and, so far, through July 2023. It is assumed that this figure will remain consistent throughout the projection period and was applied to forecast annual operations (see **Table 2.17**).

Table 2.17 | Daytime/Evening Operations Forecast

Year	Total Operations	Daytime Operations	% Daytime	Evening Operations	% Evening
2023	164,781	153,488	93.1%	11,293	6.9%
2028	198,342	184,749	93.1%	13,593	6.9%
2033	213,575	198,938	93.1%	14,637	6.9%
2038	230,485	214,689	93.1%	15,796	6.9%
2043	249,711	232,597	93.1%	17,114	6.9%
CAGR (2023-2043)	2.1%	2.1%	-	2.1%	-

Notes:

CAGR = compound annual growth rate
2023 total operations are represented by the last 12 months of data collected, ending July 2023.

Sources: FAA TFMSC database; Distributed OPSNET; Coffman Associates, 2023

2.7.9 INSTRUMENT OPERATIONS FORECAST

An instrument operation is a takeoff or a landing conducted during IFR conditions, or operations aboard aircraft that enter Class A airspace during a flight (18,000 feet above mean sea level). Aircraft that can operate in Class A airspace are typically commercial or corporate-type turboprops and jets. Instrument operations are reported in the FAA’s OPSNET database. Between 2018 and the end of July 2023, the proportion of instrument operations at VGT has averaged approximately 4.4 percent. The forecast applies the five-year average to total operations through 2043. As shown in **Table 2.18**, this methodology projected 11,108 instrument operations by the end of the planning period.

Table 2.18 | Instrument Operations Forecast

Year	Total Operations	Instrument Operations	% Instrument Operations	Visual Operations	% Visual
2018	168,748	9,011	5.3%	159,737	94.7%
2019	193,214	7,998	4.1%	185,216	95.9%
2020	171,684	5,790	3.4%	165,894	96.6%
2021	162,624	8,169	5.0%	154,455	95.0%
2022	181,408	9,198	5.1%	172,210	94.9%
2023	164,781	6,171	3.7%	158,610	96.3%
2028	198,342	8,823	4.4%	189,519	95.6%
2033	213,575	9,501	4.4%	204,074	95.6%
2038	230,485	10,253	4.4%	220,232	95.6%
2043	249,711	11,108	4.4%	238,603	95.6%
CAGR (2023-2043)	2.1%	3.0%	-	2.1%	-

Notes:

CAGR = compound annual growth rate

2023 total operations are represented by the last 12 months of data collected, ending July 2023.

Sources: FAA OPSNET; Coffman Associates, 2023

2.7.10 TOUCH-AND-GO OPERATIONS FORECAST

A touch-and-go operation is conducted by an aircraft that lands and departs on a runway without stopping or exiting. This type of operation is typically associated with flight training. Touch-and-go operations forecasts are important to identify because they impact airfield capacity, analysis for which is presented in the subsequent chapter. It is assumed that touch-and-go operations comprise 75 percent of all local operations at VGT. This figure was applied to the total local operations forecast and held constant throughout the projection period. As shown in **Table 2.19**, VGT is anticipated to experience 112,370 touch-and-go operations by 2043.

Table 2.19 | Touch-and-Go Operations Forecast

Year	Total Operations	Local Operations	Touch-and-Go Operations
2023	164,781	85,638	64,229
2028	198,342	107,105	80,329
2033	213,575	119,602	89,702
2038	230,485	133,681	100,261
2043	249,711	149,827	112,370
CAGR (2023-2043)	2.1%	2.8%	2.8%

Notes:

CAGR = compound annual growth rate

2023 total operations are represented by the last 12 months of data collected, ending July 2023.

Source: VGT ATCT staff; FAA OPSNET; Coffman Associates, 2023

2.7.11 OPERATIONAL FLEET MIX FORECAST

An airport’s operational fleet mix impacts design standards, airfield capacity, pavement strength needs, and other facilities, and also informs the development of noise contours. The operational fleet mix for base year 2023 was informed by the FAA’s TFMSC database and the based aircraft fleet mix identified by

airport staff. Forecast operations by type were primarily reflective of growth rates described for the recommended based aircraft fleet mix forecast. Existing and forecast operations by aircraft class are depicted in **Table 2.20**.

Table 2.20 | Operational Fleet Mix Forecast

Year	Total Operations	SEP	MEP	TP	Small Jet	Medium Jet	Large Jet	HELO
2023	164,781	136,263	15,478	2,803	953	1,213	9	8,062
2028	198,342	164,627	16,114	4,018	1,505	2,037	198	9,843
2033	213,575	176,495	15,684	5,020	2,006	2,815	320	11,235
2038	230,485	189,283	15,309	6,166	2,580	3,709	576	12,862
2043	249,711	203,346	15,151	7,491	3,246	4,745	749	14,983
CAGR (2023-2043)	2.1%	2.0%	-0.1%	5.0%	6.3%	7.1%	24.7%	3.1%

Notes:

SEP = single-engine piston aircraft
 MEP = multi-engine piston aircraft
 TP = turbo-prop aircraft
 HELO = rotorcraft
 CAGR = compound annual growth rate
 2023 total operations are represented by the last 12 months of data collected, ending July 2023.

Sources: FAA TFMSC database; Coffman Associates, 2023

2.8 PEAK OPERATIONS FORECASTS

Forecasts of peak activity (operations) are used to identify airfield capacity issues, itinerant aircraft parking needs, and other facility requirements. Identification of peak periods that occur on a regular basis is essential to ensure that facilities are not underutilized or over-planned. Historically, VGT does not experience significant monthly or seasonal peaking. This is likely due to the high amount of flight training activity that occurs year-round. The spring months are generally the busiest, with operations levels dropping slightly in the summer months and around the holidays later in the year. Due to the high level of flight training activity and the numerous special events hosted in Las Vegas throughout the year, VGT experiences disproportionately high levels of design day and design hour activity.

The periods used in the capacity analysis and facility requirements are as follows:

- Peak Month – Calendar month when peak activity occurs.
- Design Day – Representative day that best reflects elevated levels of activity that occur on a regular basis.
- Design Hour – Representative hour that best reflects elevated levels of activity that occur on a regular basis.

To identify peak month forecasts, monthly operational data for years 2013 through 2023 were obtained from the FAA’s OPSNET database. Historically, March, May, and October represent VGT’s peak month in terms of operations; however, except for a slight semi-regular decrease in late summer and winter months, there has not been a significant variation in overall activity by month or season.

In 2023, the peak month (October) represented 11.0 percent of annual operations. It was assumed that this figure would increase linearly to 12.0 percent by 2043. Peak month percentages were applied to total forecast annual operations and are depicted in **Table 2.21**.

Table 2.21 | Peak Operations Forecast

Year	Total Operations	Peak Month %	Peak Month Operations	Design Day Operations	Design Hour Operations
2023	164,781	11.0%	18,059	735	190
2028	198,342	11.2%	22,253	815	211
2033	213,575	11.5%	24,518	904	234
2038	230,485	11.7%	27,059	1,003	260
2043	249,711	12.0%	29,965	1,113	288
CAGR (2023-2043)	2.1%	-	2.6%	2.1%	2.1%






Notes:

CAGR = compound annual growth rate

2023 total operations are represented by the last 12 months of data collected, ending July 2023.

Sources: FAA OPSNET; FAA TFMSC; Coffman Associates, 2023

Base year 2023 design day activity was determined to be the average of the 25 busiest days that occurred at the airport over the most recent 12-month period, ending July 2023. It was assumed that design day activity would grow commensurate with total operations throughout the 20-year forecast horizon. Base year design hour operations were determined to be the average of the 50 busiest hours that occurred over the same period. It was assumed that design hour operations would increase at the same rate as forecast peak month activity.

YEAR	 Total Operations	 Peak Month %	 Peak Month Operations	 Design Day Operations	 Design Hour Operations
2023	164,781	11.0%	18,059	735	190
2028	198,342	11.2%	22,253	815	211
2033	213,575	11.5%	24,518	904	234
2038	230,485	11.7%	27,059	1,003	260
2043	249,711	12.0%	29,965	1,113	288
CAGR (2023-2043)	2.1%	-	2.6%	2.1%	2.1%

Source: FAA OPSNET; FAA Traffic Flow Management System Count
Coffman Associates, 2023

Note: CAGR = compound annual growth rate

2023 total operations are represented by the last 12 months of data collected ending July of 2023.

2.9 DESIGN AIRCRAFT

The FAA has established airport design criteria and guidance for airport facility planning based on the operational and physical characteristics of aircraft that operate at an airport. These design criteria – as described in FAA Advisory Circular (AC) 150/5300-13B, *Airport Design* – include runway and taxiway dimensions; separation distances between aircraft and various objects; and airspace protection requirements. In support of these requirements, the FAA classifies and groups aircraft with similar approach speeds and sizes into an airport reference code (ARC). Furthermore, each airport has a “critical” or “design” aircraft – as designated by its ARC – that represents the most demanding aircraft or grouping of aircraft with similar characteristics currently using or anticipated to use an airport on a “regular basis,” defined as 500 annual operations (excluding touch-and-go operations).

There are two components which comprise the ARC. The first is the aircraft approach category (AAC), which relates to the approach speed of an aircraft, involves grouping aircraft based on final approach speed at the maximum certificated landing weight, and is depicted as a letter (A through E). Approach categories and corresponding approach speed thresholds are depicted in **Table 2.22**.

Table 2.22 | Aircraft Approach Category Criteria

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

Source: FAA AC 150/5300-13B, Airport Design

The second component of the ARC, represented by a Roman numeral (I through VI), is the airplane design group (ADG), which relates to the physical size of the aircraft, namely its wingspan and tail height. Dimensional standards of aircraft affect airfield geometry design, including separation criteria for runways, taxiways, and aircraft parking areas. ADG categories and corresponding aircraft tail height and wingspan thresholds are depicted in **Table 2.23**.

Table 2.23 | Airplane Design Group Criteria

Airplane Design Group	Aircraft Tail Height (feet)	Aircraft Wingspan (feet)
I	Less than 20'	Less than 49'
II	20' or more but less than 30'	49' or more but less than 79'
III	30' or more but less than 45'	79' or more but less than 118'
IV	45' or more but less than 60'	118' or more but less than 171'
V	60' or more but less than 66'	171' or more but less than 214'
VI	66' or more but less than 80'	214' or more but less than 262'

Source: FAA AC 150/5300-13B, Airport Design

The AAC and ADG collectively identify the ARC, which is used to classify both airports and aircraft. A lower ARC typically represents smaller, slower aircraft used for recreation or training activity. Higher ARCs usually indicate larger commercial or military aircraft. ARC designations in the middle categories usually include turboprops and corporate jets. It should be noted that an airport’s ARC is used for planning and design only and does not mean that aircraft outside of the established ARC may not be able to operate safely at an airport.

Historical operational data by ARC for the last 12 months, ending July 2023, were obtained from the FAA’s TFMSC database. Data showed there were 2,230 operations conducted by aircraft with an AAC/ADG of B-II, which was the most demanding designation with activity that exceeded the 500-operation threshold. As such, the historical operational activity indicates that the airport’s existing ARC is B-II.

To determine the airport’s future and ultimate ARC, actual annual historical operations data by ARC from 2013 through 2023 were collected and forecast through 2043 using a growth rate forecast based on historical growth and future fleet mix forecasts. This analysis identified a future ARC of C-II and an ultimate ARC of D-III. The change from B-II to C-II could occur sometime between 2028 and 2033. The change from C-II to D-III could occur between 2038 and 2043. Historical and forecast operations by ARC are depicted in **Table 2.24**.

Table 2.24 | Historical and Forecast Operations by Airport Reference Code

Year	B-I	B-II	B-III	C-I	C-II	C-III	D-I	D-II	D-III
Historical									
2019	1,008	1,950	16	104	126	0	12	28	18
2020	746	1,324	14	44	90	0	20	6	10
2021	958	2,172	14	78	172	0	10	20	20
2022	1,198	2,282	14	68	236	0	12	8	8
2023	1,512	2,230	2	102	245	0	22	10	2
Forecast									
2028	2,052	3,027	23	144	440	10	45	31	55
2033	2,785	4,108	75	203	790	28	127	84	126
2038	3,781	5,576	164	285	1,418	95	228	156	257
2043	5,131	7,568	297	402	2,546	207	355	341	468
Notes:									
2023 data are comprised of TFMSC data from the last 12 months, ending July 2023.									
A-I and A-II are not shown as smaller/slower aircraft are unlikely to impact critical design aircraft.									
C-IV through C-V and D-IV and above are not shown due to minimal activity at VGT.									

Sources: FAA TFMSC; Coffman Associates, 2023

To identify the airport’s existing design aircraft, TFMSC data for base year 2023 were examined for operations by aircraft model. Of the 2,230 operations conducted by ARC B-II aircraft in 2023, 553 operations were conducted by the Phenom 300. With more than 500 operations, the Phenom 300 represents VGT’s existing design aircraft.

Similar to identification of the future ARC, a growth rate forecast was conducted for individual aircraft types with ARCs of C-II and higher that currently operate at the airport, which included the Challenger 300/350, Challenger 600/604, Hawker 800, Gulfstream 280, Global 5000/Express, Gulfstream G450, and Gulfstream G500/G650. The analysis examined operational data from 2013 through 2023 and projected activity through 2043. Consistent with the operations data by ARC presented in **Table 2.24**, it was predicted that the Challenger 300/350 would exceed 500 operations by 2033. As such, the airport’s future design aircraft was determined to be the Challenger 300/350. As operations for ADG III and AAC D aircraft continue into the forecast years, it is projected that cumulative ADG III and AAC D operations will surpass 500 annual operations by 2038. Therefore, the ARC group D-III is projected to become the ultimate ARC sometime between 2038 and 2043. This ultimate ARC is consistent with the forecasted fleet mix forecast for large jet aircraft and the increase in both national business jet operations as well as regional growth in the Las Vegas Valley that support the growth of business aviation. The FAA national aerospace forecast indicated a 46 percent increase in business jet hours flown over the last year despite the impacts of the pandemic. Additionally, business jet deliveries have increased by 20.5 percent from 2022 to 2023. The increase in future large business jet operations are further supported by the potential for new professional sports teams in Las Vegas as well as the addition of annual events such as Formula 1 Las Vegas. It should be noted that operational activity could trigger this change sooner based on existing and potential future tenant demand. Regardless, applicable recommended improvements presented in subsequent portions of this airport master plan were based on a future ARC C-II and Challenger 300/350 design aircraft and ultimate ARC D-III and Gulfstream G650. A summary of historical and forecasted operations by design aircraft is shown in **Table 2.25**.

Table 2.25 | Historical and Forecast Design Aircraft Operations

Year	Challenger 300/350 (C-II)	Challenger 600/604 (C-II)	Hawker 800 (C-II)	Gulfstream G280 (C-II)	Global 5000/Express (C-III)	Gulfstream G400/G450 (D-II)	Gulfstream G500/G650 (D-III)
Historical							
2019	50	16	12	2	14	22	18
2020	54	12	6	4	10	4	8
2021	74	14	30	6	36	16	20
2022	118	14	18	10	28	6	8
2023	173	12	24	10	8	10	2
Forecast							
2028	310	22	43	18	10	31	55
2033	557	39	77	32	28	84	126
2038	999	69	139	58	95	156	257
2043	1,792	124	249	104	207	341	468
Note: 2023 data are comprised of TFMSC data from the last 12 months, ending July 2023. <i>Sources: FAA TFMSC; Coffman Associates, 2023</i>							

Characteristics of the existing and future design aircraft are presented in **Table 2.26**.

Table 2.26 | Existing and Future Design Aircraft Characteristics

Design Aircraft	2023 Operations	2043 Operations	ARC	Taxiway Design Group	Wingspan (feet)	Tail Height (feet)	Approach Speed (knots)	Typical Seats
Phenom 300 (Existing)	553	1,877	B-II	1A	52.2	16.8	116	6
Challenger 300/350 (Future)	173	1,792	C-II	1B	64	20	125	9
Gulfstream G650 (Ultimate)	2	468	D-III	2B	99.58	25.67	145	18
Notes: ARC = airport reference code 2023 data are comprised of TFMSC data from the last 12 months, ending July 2023. <i>Sources: FAA TFMSC; FAA Aircraft Characteristics database</i>								

2.10 FORECAST SUMMARY

Table 2.27, **Figure 2.7**, and **Figure 2.8** present a summary of recommended forecasts developed in this chapter. As discussed in previous sections, the basis for the selected forecasts is a combination of projected socioeconomic growth for the Las Vegas region; growth in overall aviation activity nationwide; increased demand for flight training activities, which are a key component of VGT operations; and the potential of the airport to expand its facilities and services to accommodate new tenants. The forecasts presented in this chapter are used to inform facility needs presented in Chapter 3, Facility Requirements.

Projections of aviation demand will be influenced by unforeseen factors and events in the future. Therefore, it is not reasonable to assume that future demand will follow the exact projection line, but over time, forecasts of aviation demand tend to fall within the planning envelope. The forecasts developed for this master planning effort are considered reasonable for planning purposes. The need for additional facilities will be based upon these forecasts; however, if demand does not materialize as projected, implementation of facility construction can be slower than planned. Likewise, facility construction can be accelerated if demand exceeds these forecasts.

Table 2.27 | Aviation Activity Forecast Summary

Year	General Aviation Operations	Air Taxi Operations	Military Operations	Total Operations	Based Aircraft
2023	150,478	12,489	1,814	164,781	511
2028	182,856	13,721	1,764	198,342	584
2033	196,735	15,075	1,764	213,575	638
2038	212,158	16,563	1,764	230,485	696
2043	229,750	18,197	1,764	249,711	758
CAGR (2023-2043)	2.1%	1.9%	-0.1%	2.1%	2.0%

Note:
CAGR = compound annual growth rate

Sources: FAA OPSNET; FAA National Based Aircraft Inventory Program; Coffman Associates, 2023

Figure 2.7 - Historical and Forecast Based Aircraft








Sources:
FAA Terminal Area Forecasts
FAA Based Aircraft Inventory Program
Coffman Associates, 2023

Figure 2.8 - Historical and Forecast Total Operations



Sources:
 FAA TAF, March 2023
 FAA OPSNET
 Coffman Associates, 2023

YEAR	 General Aviation Operations	 Air Taxi Operations	 Military Operations	 Total Operations	 Based Aircraft
2023	150,478	12,489	1,814	164,781	511
2028	182,856	13,721	1,764	198,342	584
2033	196,735	15,075	1,764	213,575	638
2038	212,158	16,563	1,764	230,485	696
2043	229,750	18,197	1,764	249,711	758
CAGR (2023-2043)	2.1%	1.9%	-0.1%	2.1%	2.0%

Sources: FAA OPSNET
 FAA National Based Aircraft Inventory Program
 Coffman Associates, 2023
 Note: CAGR = compound annual growth rate

2.11 FEDERAL AVIATION ADMINISTRATION FORECAST REVIEW AND APPROVAL

The FAA Regional Airports Division and District Offices (ADOs) are responsible for review and approval of forecasts developed for most master plans at federally sponsored airports. When reviewing a sponsor’s forecast, the FAA must ensure the forecast is based on reasonable planning assumptions, uses current data, and is developed using appropriate methodologies. Additional discussion on assumptions and methodologies can be found in the FAA Office of Aviation Policy and Plans (APO) report, *Forecasting Aviation Activity by Airport*. After a thorough review of the forecast, the FAA determines if the forecast is consistent with the TAF.

For all classes of airports, forecasts are considered consistent with the TAF if they meet the following criterion: forecasts differ by less than 10 percent in the 5-year forecast period and less than 15 percent in the 10-year forecast period. If the forecast is not consistent with the TAF, differences must be resolved if the forecast is to be used in FAA decision-making. This may involve revisions to the airport sponsor’s submitted forecasts, adjustments to the TAF, or both.

The FAA template tables below present a 15-year comparison of recommended forecasts developed in this chapter and forecasts identified in the FAA TAF issued in February 2019 (see **Figure 2.9** and **Figure 2.10**). The tables were obtained from Appendix B and Appendix C of *Forecasting Aviation Activity by Airport*, prepared for the FAA APO's Statistics and Forecast Branch.

As shown in the Appendix C table, forecasts of total aircraft operations and based aircraft presented in this airport master plan satisfy the criteria for approval at the ADO level. Itinerant and local operations differ from the TAF; however, this is due to a discrepancy in the base year counts between the two sources.

Figure 2.9 - FAA Template for Comparing Airport Planning and TAF Forecasts

APPENDIX C

Template for Comparing Airport Planning and TAF Forecasts (1)

	<u>Year</u>	<u>VGT Forecast</u>	<u>TAF</u>	<u>VGT/TAF (% Difference)</u>
Based Aircraft				
Base yr.	2023	511	554	8.08%
Base yr. + 5yrs.	2028	584	601	2.95%
Base yr. + 10yrs.	2033	638	646	1.31%
Base yr. + 15yrs.	2038	696	695	0.17%
Itinerant Operations				
Base yr.	2023	79,143	64,921	19.7%
Base yr. + 5yrs.	2028	91,237	74,780	19.8%
Base yr. + 10yrs.	2033	93,973	75,428	21.9%
Base yr. + 15yrs.	2038	96,804	76,085	24.0%
Local Operations				
Base yr.	2023	85,638	137,513	46.5%
Base yr. + 5yrs.	2028	107,105	138,892	25.8%
Base yr. + 10yrs.	2033	119,602	140,286	15.9%
Base yr. + 15yrs.	2038	133,681	141,693	5.8%
Total Operations				
Base yr.	2023	164,781	202,434	20.51%
Base yr. + 5yrs.	2028	198,342	213,672	7.44%
Base yr. + 10yrs.	2033	213,575	215,714	1.00%
Base yr. + 15yrs.	2038	230,485	217,778	5.67%

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

(1) Table is developed from Appendix C in the FAA Report, "Forecasting Aviation Activity by Airport."

Figure 2.10 - Template for Summarizing and Documenting Airport Planning Forecasts

APPENDIX B

Template for Summarizing and Documenting Airport Planning Forecasts (1)

AIRPORT NAME: North Las Vegas Airport (VGT)

A. Forecast Levels and Growth Rates

	Base Yr. Level	Base Yr. +5yrs	Base Yr. +10yrs.	Base Yr. +15yrs.	Compound Annual Growth Rates		
	<u>2023</u>	<u>2028</u>	<u>2033</u>	<u>2038</u>	<u>Base yr. to +5</u>	<u>Base yr. to +10</u>	<u>Base yr. to +15</u>
Operations							
<u>Itinerant</u>							
Air Taxi	12,489	13,721	15,075	16,563	1.9%	1.9%	1.9%
General Aviation	65,061	84,114	86,564	89,106	5.3%	2.9%	2.1%
Military	1,593	1,443	1,443	1,443	-2.0%	-1.0%	-0.7%
<u>Local</u>							
General Aviation	85,417	98,743	110,172	123,052	2.9%	2.6%	2.5%
Military	221	321	321	321	7.8%	3.8%	2.5%
TOTAL OPERATIONS	164,781	198,342	213,575	230,485	3.8%	2.6%	2.3%
Instrument Operations	6,171	8,823	9,501	10,253	7.4%	4.4%	3.4%
Peak Hour Operations	190	211	234	260	2.1%	2.1%	2.1%
Based Aircraft							
Single Engine (Nonjet)	406	467	506	546	3.5%	2.5%	2.1%
Multi Engine (Nonjet)	48	47	47	46	-0.3%	-0.3%	-0.3%
Turbo-Prop	18	23	28	36			
Jet Engine	14	18	23	30	6.4%	5.7%	5.5%
Helicopter	25	29	34	39	3.7%	3.3%	3.2%
Other	0	0	0	0	0.0%	0.0%	0.0%
TOTAL	511	584	638	696	3.4%	2.5%	2.2%

B. Operational Factors

	<u>2023</u>	<u>2028</u>	<u>2033</u>	<u>2038</u>
GA operations per based aircraft	170	172	175	179

(1) Table is developed from Appendix B in the FAA Report, "Forecasting Aviation Activity By Airport."