CHAPTER B

Forecasts of Aviation Activity

1. Executive Summary

This chapter presents aviation activity forecasts for the Friedman Memorial Airport (SUN or "the Airport"), which were reviewed and approved by FAA in May 2015. The purpose of preparing forecasts is to provide a basis for airport facility planning and justification for future decisions, including analysis of long-term Airport needs and goals. These forecasts estimate potential future activity levels through evaluation of historical data and the application of various projection methods. Existing conditions and potential future needs that are unique to SUN have been analyzed and accounted for in the forecasts presented in this chapter. Activity level thresholds that may indicate the need to reconfigure, expand, or relocate the Airport are identified in Chapter C, *Capacity Analysis & Facility Requirements*, based on facilities needed to accommodate these forecasts. A summary of the main points of the chapter is included below, and in **Table B1**.

- **The preferred passenger enplanements forecast projects an increase from 66,409 enplanements in 2014 to 131,630 enplanements in 2034.**
- **The preferred peak passenger activity forecast projects an increase from 204 peak hour enplaning/deplaning passengers in 2014 to 384 peak hour enplaning/deplaning passengers in 2034.**
- **The preferred passenger air carrier operations forecast projects an increase from 2,840 operations in 2014 to 4,453 operations in 2034.**
- **The preferred based aircraft forecast projects an increase from 157 based aircraft in 2014 to 213 in 2034.**
- **Based aircraft fleet mix proportions are projected to remain relatively constant at 2014 levels, with 58.6% single-engine, 10.8% multi-engine, 29.9% jet, and 0.6% helicopter aircraft.**
- **General aviation operations are projected to increase from 20,310 in 2014 to 27,564 in 2034.**
- **Air taxi and commuter operations are projected to increase from 5,185 in 2014 to 5,450 in 2034.**
- **Military operations are projected to remain constant at the 2014 level throughout the planning period, at 145 annual operations.**
- **Peak month aircraft operations are projected to increase from 4,557 in 2014 to 6,018 in 2034; peak day operations are projected to increase from 319 in 2014 to 421 in 2034; and peak hour operations are projected to increase from 32 in 2014 to 42 in 2034.**

Table B1 **FORECASTS SUMMARY**

Activity Measure	2014	20-Year Increase	2034	Primary Facility Considerations
Passenger Enplanements	66,409	98%	131,630	Terminal Building and Associated Facilities
Based Aircraft	157	37%	213	Aircraft Storage and FBO Services
Aircraft Operations				
Air Carrier	2,840	57%	4,453	Airfield and Commercial Apron
Air Taxi and Commuter	5,185	5%	5,450	GA Aprons and FBO Services
General Aviation	20,310	36%	27,564	GA Aprons and FBO Services
Military	145	0%	145	N/A
Total Aircraft Operations	**28,480**	**32%**	**37,612**	

SOURCE: **Mead & Hunt analysis.**

Key Terms

Aviation forecasting is often technical in nature and uses terms that may not be commonly understood. Definitions for several key terms used in this chapter are provided below. **Appendix A**, *Glossary of Terms*, also provides definitions for technical terminology used in this Master Plan.

Air Carrier Operation – A takeoff or landing of commercial aircraft with seating capacity of more than 60 seats.

Air Taxi Operation – A takeoff or landing by aircraft with 60 or fewer seats conducted on non-scheduled or for-hire flights.

Air Traffic Activity System (ATADS) – An FAA database containing the official National Airspace System air traffic operations data available for public release.

Aircraft Fleet Mix – The combination of differing aircraft types operated at a particular airport.

Aircraft Operation – An aircraft arrival (landing) or departure (takeoff) each represent one aircraft operation.

Airport Traffic Control Tower – A central air traffic control facility using air to ground communications and/or radar, visual signaling, and other devices to provide for the safe and expeditious movement of air traffic.

Based Aircraft – Aircraft stored at an airport on a permanent basis.

Business Jet – A jet aircraft designed for transporting small groups of people.

Commuter Operation – A takeoff or landing by aircraft with 60 or fewer seats that transport regional passengers on scheduled commercial flights.

Enhanced Traffic Management System Counts (ETMSC) – An FAA database providing information on traffic counts by airport or by city pair for various data groupings such as aircraft type or by hour of the day. ETMSC data are created when pilots file flight plans and/or when flights are detected by the National Airspace System (NAS), usually via RADAR.

General Aviation – All civil aviation excluding commercial operations.

Itinerant Operation – All operations other than local operations (see local operation definition below).

Leakage – The loss of potential customers to other airports in the region, or to alternate modes of transportation.

Local Operation – An operation conducted by aircraft operating in the traffic pattern within sight of the air traffic control tower; aircraft departing or arriving from flight in local practice areas; or aircraft executing practice instrument operations at the airport.

Passenger Enplanement – A passenger on a scheduled commercial service or charter aircraft that departs an airport. Enplanements do not include the airline crew.

Passenger Load Factor – The ratio of passengers boarding an aircraft to the total number of seats on the aircraft. In other words, load factor is a measure of how full a flight is.

Regional Jet – A class of short to medium-range airliners typically serving small hub and non-hub airports.

Terminal Area Forecast (TAF) – The official FAA forecast of aviation activity for airports throughout the U.S. The TAF is prepared to support FAA budgeting and planning, and to provide information for use by state and local authorities, the aviation industry, and the public. Forecasts developed for airport master plans and/or under federal grant assistance must be compared to the TAF and approved by the FAA.

Turboprop – An aircraft powered by a turbine engine that drives an aircraft propeller.

2. Introduction

Friedman Memorial Airport provides commercial and general aviation services for the Wood River Valley and South Central Idaho, including the Sun Valley resort area. The economy of the Airport's service area is oriented towards tourism and outdoor recreation, and the Airport serves many tourists and those who have second homes in the area, as well as permanent residents. Therefore, the air service schedule is designed to accommodate seasonal travel in order to meet fluctuating demand throughout the year. It is important that the Airport continue to employ a reasonable balance of services and infrastructure during periods of peak and non-peak activity.

As discussed in Chapter A, *Inventory of Existing Conditions*, the primary constraints that may restrict the Airport's ability to meet long-term market demand and facility needs at its existing site include:

1. Modifications of FAA design standards for size of aircraft operating at SUN;
2. Surrounding mountainous terrain that limits aircraft approaches and departures, and often creates visibility issues necessitating aircraft diversions; and
3. A property footprint restricted by development in surrounding communities.

Forecasts of aviation activity serve as a guideline for demand based implementation of airport improvement programs. While forecasts are necessary for airport planning, it is important to recognize that forecasts are only approximations of future activity, based upon historical data, present conditions, and expected future trends. Forecasts are a particularly important element of the master planning process for SUN, as they provide the basis for the following:

1. Determining the future role of the Airport, with respect to the type of aircraft and operations to be accommodated, both for the existing airfield and for a future relocated airport.
2. Evaluating the capacity of existing Airport facilities and their ability to accommodate forecasted demand. Specifically, forecasts will be used to determine the level(s) of activity, or thresholds, which could reasonably indicate the practicality or necessity of reconfiguring, expanding, or relocating the Airport.
3. Estimating the extent of airside and landside improvements required in future years to accommodate projected demand at the current Airport site. If it is determined that certain improvements cannot be implemented at the existing site, they would lend support to the need to relocate the Airport.

Forecasts of short-, intermediate-, and long-term activity presented in this chapter are based on five-, ten-, and twenty-year milestones, using 2014 as the base year. Calendar year 2014 is the first year that exhibits the full effects of new regional jet operations at the Airport, which closely followed the 2012 FAA Finding of No Significant Impact (FONSI) allowing for the initiation of jet service at the Airport. The introduction of regional jet operations is anticipated to create an increasing trend in enplanements and result in new commercial operations trends at SUN during the coming years.

The forecasts are documented in the following sections:

- **Summary of 2008 Forecasts**
- **Commercial Activity Forecasts**
  - Annual Passenger Enplanements Forecasts
  - Peak Passenger Activity Forecasts
  - Commercial Passenger Fleet Mix and Operations Forecasts
  - Air Taxi and Commuter Operations Forecast

3. Summary of 2008 Forecasts

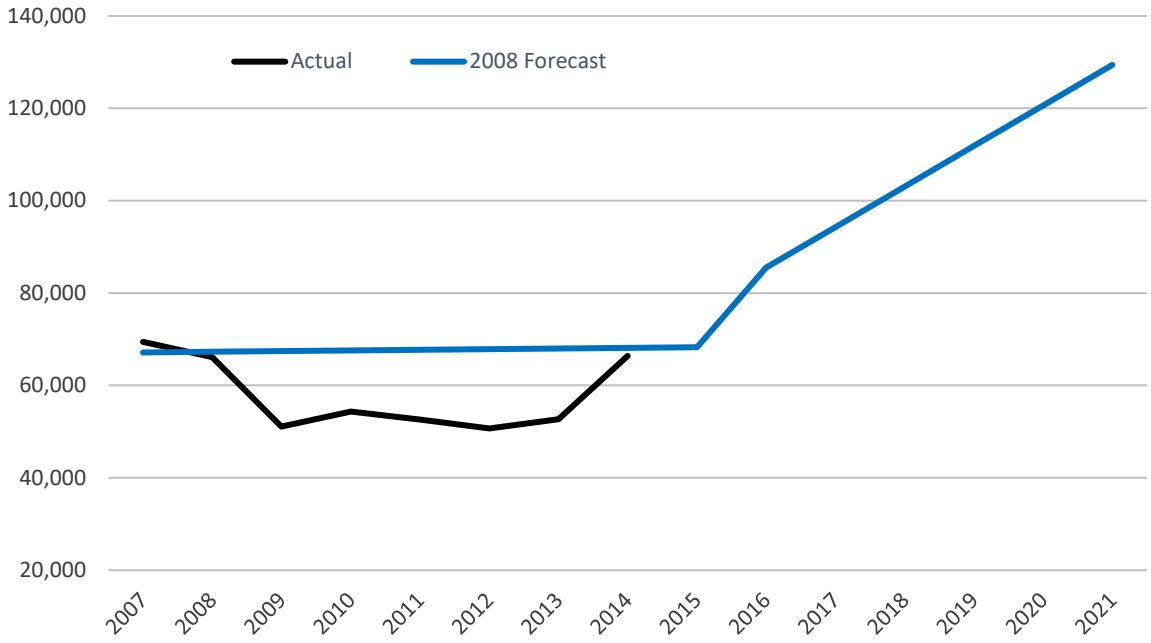
In 2008, detailed forecasts were prepared for SUN by Landrum & Brown as part of the Replacement Airport Environmental Impact Statement (EIS). The intent of the EIS was to identify a safe and efficient relocation site that could accommodate FAA design and safety standards commensurate with projected future use of the Airport. The 2008 effort included forecasts for commercial passenger enplanements, operations, and fleet mix, as well as general aviation, military, and air cargo activity. The following provides a summary of the methodology and key findings:

Passenger Enplanements. Two sequential sets of enplanement forecasts were developed, to reflect a continuous forecast for the existing Airport site from 2008 to 2015, and for the replacement Airport site after 2015. The first phase of the enplanements forecast was a "constrained" forecast, assuming that the Airport continued operating at its existing site within its then-existing limitations. This phase assumed no future increases in aircraft size and no change in air service at the existing airport site, and represented the years 2008 to 2015 as the replacement airport was expected to open in 2016 at that time. The second phase of the forecast was an "unconstrained" forecast representing the years after 2015 when the airport was to have been relocated, and market-driven demand would be the primary determinant of activity.

The preferred "unconstrained" forecast, Scenario A (Regional Approach), used a demand-based regional approach that assumed SUN would recapture leakage to Boise Airport-Gowen Field (BOI) and Twin Falls Airport (TWF). Enplanements were projected for the three airport region (SUN, TWF, and BOI) using passenger survey information about airport choice; estimates of additional passengers gained from competing airports who would be drawn away by improved service at a relocated airport; and historical airline yields and passenger traffic for SUN, TWF, and BOI. Enplanements were then allocated amongst the three airports based on the "constrained" forecast for SUN, a 2% capture rate for TWF, and the remainder allocated to BOI.

The 2008 enplanement forecast is illustrated and compared to actual enplanements through 2014 in **Chart B1**.

Chart B1 **2008 ENPLANEMENT FORECASTS COMPARED TO ACTUAL ENPLANEMENTS**



SOURCES: **2008 Forecast: *Friedman Memorial Replacement Airport EIS Aviation Activity Forecast*, prepared by Landrum & Brown, 2008. Actual enplanements: Airport management records, U.S. DOT T-100 Database, Mead & Hunt.**

Commercial Operations. The commercial operations forecast assumed that airlines would upgrade their fleet to regional jets after the opening of the replacement airport. Seasonal service would also be added with 125-seat narrow-body aircraft. This increase in average air carrier size would cause a corresponding temporary decrease in operations, due to the increase in available seats, which would increase to previous levels by 2021. It would also cause a slight initial decrease in passenger load factor that would also later increase.

General Aviation Operations. Based on national trends and the FAA Terminal Area Forecast (TAF) in effect at that time, general aviation operations were projected to grow steadily at a rate of 1.3% annually, with a significant increase in the proportion of jet operations over time.

The forecasts included a detailed socioeconomic trends analysis that included tourism and housing profiles of the Wood River Valley, as well as analysis of regional income, population, employment, and Gross Domestic Product (GDP). The forecasts also included a thorough interviewing process of passengers departing from SUN and TWF; passengers on Sun Valley Express shuttles operating between BOI and SUN; U.S. domestic air carriers; general aviation pilots; and businesses in the Wood River Region.

The 2008 forecasts have little specific applicability for current and future conditions at SUN in light of several major changes that have taken place since 2008, all of which have important implications for future aircraft activity at SUN. Among those major changes since the publication of the 2008 forecasts are:

- **The termination of the Replacement Airport EIS in March 2013;**
- **The 2012 FAA Finding of No Significant Impact (FONSI) that allowed for the initiation of regional jet service at the existing site;**
- **The approval of several Modifications of Standards (MOSs) in November 2013 stipulating required airfield improvements while imposing restrictions on aircraft types and operating procedures; and**
- **Recent passenger load factor increases, airline capacity reductions, and airline fleet mix changes, both in the airline industry in general and at SUN in particular.**

All of these changes have important implications for aircraft activity at SUN that will be properly accounted for in these updated forecasts.

4. Commercial Activity Forecasts

The following sections describe commercial activity forecasts developed for the Master Plan. Commercial air service and associated peak passenger demand will be the primary determinant of the Airport's growth and future facility needs. These forecasts are based on detailed analysis of commercial passenger service trends at SUN conducted specifically for this Master Plan, which is described in **Appendix B**. It is important that these trends are understood and taken into account in development of new commercial passenger service activity forecasts. Trends discussed in Appendix B include those associated with commercial passenger operations (takeoffs and landings); commercial flight diversions and cancellations; annual and seasonal passenger enplanement trends; and commercial passenger aircraft size and load factor trends.

Commercial activity forecasts are presented in the following sections:

- **Annual passenger enplanement forecasts;**
- **Peak passenger activity forecasts;**
- **Commercial service aircraft fleet mix and operations forecasts; and**
- **Air taxi and commuter operations forecasts.**

4.1. Annual Passenger Enplanements Forecasts

Passenger enplanements are a key way to measure activity levels at an airport because the number of passengers using an airport affects the design of many airport facilities, from the terminal building to vehicle parking and roadway access, as well as airfield capacity planning. Passenger enplanement data is provided to Airport management by commercial air carriers, who maintain data as they transport people to and from the facility. The FAA Terminal Area Forecast (TAF) presents annual data for the fiscal year, while Airport records are for the calendar year. Thus there is often a discrepancy between annual totals reported by the Airport and the FAA.

Deplanements are not specifically evaluated in this document, except for peak passenger deplanements. Because the Wood River Valley is primarily a destination market, it is assumed that an arriving passenger will eventually return to the originating location and use the same airport. This means that enplanements are assumed to equal the number of deplanements for the purpose of this analysis.

Historical Enplanements

Table B2 shows the historical calendar year enplanements at SUN from 2004 to 2014. The number of passenger enplanements at the Airport has fluctuated over the past 10 years, experiencing an overall downward trend from 2004 to 2012. Passenger enplanements at SUN declined sharply in 2009, largely due to the nationwide economic recession. Enplanements remained at approximately 2009 levels through 2013, and then rebounded strongly in 2014, aided by improved economic conditions, increase in commercial aircraft size, and new service to Denver and San Francisco.

Despite the overall downward trend in enplanements during the past ten years, enplanement increases in 2013 and 2014 are a major departure from the previous trend. Local officials expect to add more new routes in the future as conditions allow, as the Airport has made the expansion of air service a major priority in light of the introduction of regional jet service.

Table B2 **HISTORICAL PASSENGER ENPLANEMENTS – CALENDAR YEAR**

Year	Enplanements
2004	73,281
2005	72,466
2006	72,282
2007	69,443
2008	66,145
2009	51,090
2010	54,319
2011	52,639
2012	50,692
2013	52,679
2014 (Base Year)*	**66,409**
CAGR 2004-2014	*-0.98%*

SOURCE: Airport Management, U.S. DOT T-100 Database.
*** 2014 enplanements were adjusted to account for artificially reduced enplanements associated with Airport closure from April 29 to May 21, 2014. Actual enplanements were 65,376.**

FAA TAF Enplanements Forecast

The most recent FAA TAF for enplanements at SUN is shown in **Table B3**. The FAA predicts strong increases in passenger enplanements for the 20-year projection period; from 50,377 in 2014, to 61,847 in 2019, to 73,378 in 2024, and to 103,297 in 2034, a CAGR of 3.48%. However, the TAF does not reflect recent gains in enplanements during 2013 and 2014, which were significantly higher than estimated by FAA.

Table B3 **ENPLANEMENTS FORECAST – FAA TERMINAL AREA FORECAST (TAF)**

Year	Enplanements
Historical	
2004	71,128
2005	69,604
2006	69,003
2007	67,863
2008	66,564
2009	50,540
2010	52,861
2011	51,033
2012	47,882
2013*	50,377
2014*	**52,130**
CAGR 2004-2014	*-3.06%*
Projected	
2019	61,847
2024	73,378
2034	103,297
CAGR 2014-2034	*3.48%*

SOURCE: FAA Terminal Area Forecast (TAF) issued February 2014.
*** 2013 and 2014 figures are FAA-projected estimates using 2012 as a base year.**

Master Plan Enplanement Forecasts

Four different forecasting methods were applied for passenger enplanements to create forecast scenarios, including an adjusted FAA TAF, a 25-year trend forecast, a market share forecast, and two socioeconomic variable forecasts based upon gross regional product (GRP) and per capita income. From these forecast scenarios, a preferred enplanement forecast was then chosen.

- **Adjusted TAF Forecast –** This forecast adjusts the baseline 2014 enplanement figure to correspond with expected actual enplanements, but utilizes the same projected growth rate for enplanements as the most recent version of the TAF published in February 2014.
- **25-Year Trend Forecast –** This forecast uses a basic linear regression analysis based on historic enplanement data reported by the FAA TAF for 1990-2003 and data reported by Airport management for 2004-2014.
- **Market Share Forecast –** Market share, ratio, or top-down models compare local levels of activity with a larger dataset. Historical data was examined to determine the typical ratio of local airport traffic to total national traffic. This forecast assumes that the 2014 ratio of SUN enplanements to national enplanements will remain consistent throughout the planning period.
- **Socioeconomic Variable Forecasts –** Historic and projected socioeconomic data provided by the economic forecasting firm Woods & Poole, Inc., was used to create two additional enplanement forecast scenarios. Historic and projected compound annual growth rates (CAGR) for gross regional product (GRP) and per capital income in the Hailey Micropolitan Statistical Area were used to project passenger enplanements.

The passenger enplanement forecast scenarios are summarized in **Table B4** and **Chart B2**. For comparison purposes, the FAA's Terminal Area Forecast (TAF) has also been included. The Adjusted TAF is recommended as the preferred enplanement forecast, as 2014 enplanements are expected to be well above the TAF estimate, and future growth forecasted by the TAF is reasonable when considering recent enplanement growth, as well historic and projected economic variables such as GRP and per capita income. The other forecasts were ruled out for the following reasons:

- The current FAA TAF does not reach actual 2014 enplanements until the mid-2020s.
- The 25-year trend, market share and GRP variable forecasts do not adequately take into account underlying reasons for strong 2014 growth in enplanements at SUN, and the potential for additional routes to other large passenger markets.
- The income variable forecast is not appropriate to use for the SUN market, as a small segment of high-income earners skew the overall per capita income figures.

The preferred enplanement forecast has been reviewed by local Fly Sun Valley Alliance representatives and is within five percent of their own short-term projections. However they have noted that potential service to new destinations and additional service to existing destinations may result in stronger enplanement growth than this forecast reflects, which may lead to greater variance beyond the five year period. Other variables not accounted for by this forecast include:

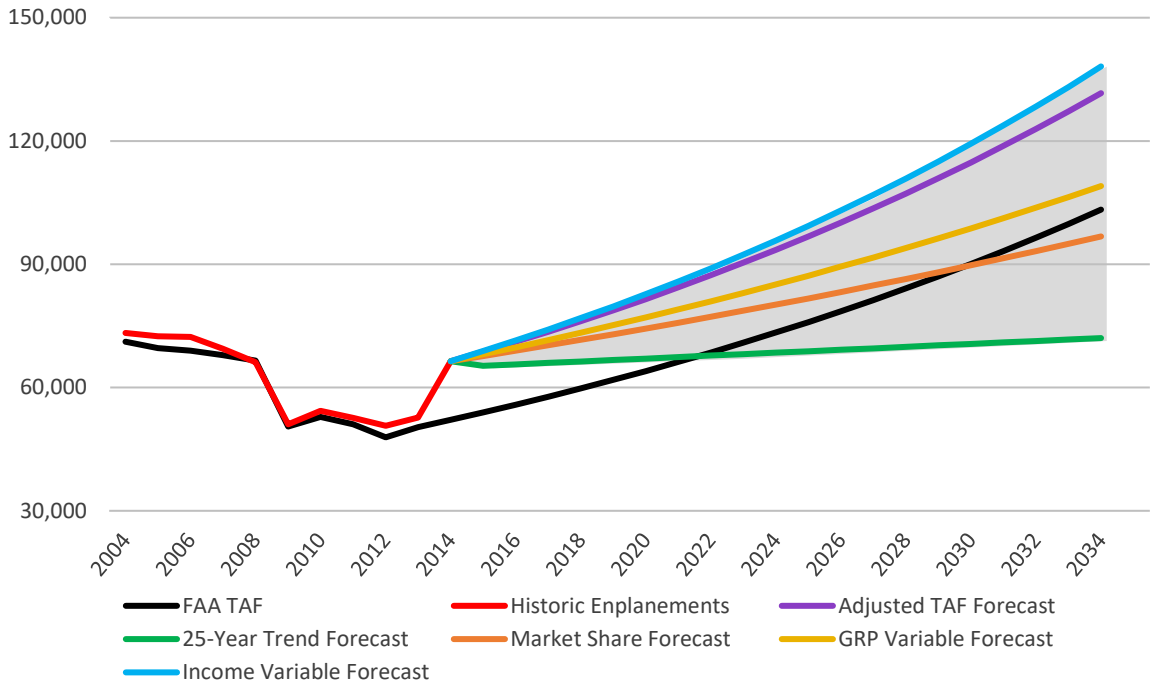
- Possible future improvements to instrument approach procedures currently being studied by the Airport, which may reduce the frequency of flight cancellations/diversions;
- Planned future addition of hotels and other tourist accommodations in the Wood River Valley, which may increase demand for commercial aircraft seats; and
- Potential recapture of passenger leakage to Boise.

Table B4 **PASSENGER ENPLANEMENTS FORECAST COMPARISON**

Year	FAA Terminal Area Forecast[1]	Adjusted Terminal Area Forecast[2]	25-Year Trend Forecast	Market Share Analysis	Gross Regional Product Variable 2.51%[3]	Per Capita Income Variable 3.73%[4]
2014*	52,130	**66,409**	66,409	66,409	66,409	66,409
2019	61,847	**78,797**	66,705	72,962	75,172	79,753
2024	73,378	**93,496**	68,480	80,162	85,092	95,779
2029	87,063	**110,936**	70,255	88,072	96,321	115,025
2034	103,297	**131,630**	72,031	96,763	109,031	138,138
CAGR 2014-2034	*3.48%*	*3.48%*	*0.41%*	*1.90%*	*2.51%*	*3.73%*

*** 2014 enplanements were adjusted to account for artificially reduced enplanements associated with Airport closure from April 29 to May 21, 2014. Actual enplanements were 65,376.**
1. FAA Terminal Area Forecast (TAF), issued February 2014.
2. Adjusted TAF calculated using 2014 enplanements and 2013 TAF projected growth rate.
3. Gross Regional Product growth rate from Woods and Poole data for Hailey Micropolitan Statistical Area, 2014-2035.
4. Per Capita Income Variable growth rate from Woods and Poole data (in current dollars) for Hailey Micropolitan Statistical Area, 1995-2013.

Chart B2 **PASSENGER ENPLANEMENTS FORECASTS**



SOURCE: **Mead & Hunt analysis.**

4.2. Peak Passenger Activity Forecasts

Forecasts of annual passenger activity may not adequately describe the complex needs of airport facilities. Annual metrics are only useful when activity tends to be evenly distributed over the hours, days, and months of the year. However, with its seasonal schedule, SUN experiences peak periods during tourist seasons when activity far surpasses annual averages. For this reason, it is important to identify existing and forecast future peak period activity levels.

It should be noted that if planning is made contingent on the absolute busiest periods of activity, it can lead to overestimation, overspending, and inefficiencies. As a result, these peak activity forecasts focus on the average day during the peak months for passenger activity, rather than the peak day of the peak months. It is also important to note that future airline route schedules are unpredictable and change frequently, and that the number of peak hourly passengers are highly dependent on these schedules.

Monthly, daily, and hourly peak passenger activity forecasts were developed from the preferred enplanement forecast recommended in the previous section. Assumptions implicit in the peak passenger forecasts include the following:

- Peak month passengers in 2014 were 15.6% of total estimated annual passengers (August). This ratio is held constant throughout the 20-year forecast period to determine peak month passengers for each forecast year.
- Peak month average day passengers were derived by dividing peak month enplanements by 31 (days in the peak month).
- Peak hour average day passengers are estimated at 29.0% of total daily enplanements, based on August 2014 commercial service schedule.

The resulting peak passenger activity forecasts for SUN are presented in **Table B5**. These forecasts indicate strong future growth in peak hourly passengers, nearly doubling from 204 in 2014 to 384 in 2034. However, destinations and/or airlines added at SUN in the future will likely follow the traditional operational pattern for mountain resort communities, with departures packed into the morning hours. This may result in a more demanding peak hour than indicated by this peak passenger activity forecast.

Table B5 **PEAK PASSENGER ACTIVITY FORECASTS**

Year	Peak Factor	Enplanements	Deplanements	Total Passengers
2014	***Estimated***			
	Annual	66,409	66,409	132,818
	Peak Month	10,928	10,928	21,856
	Peak Month Avg. Weekday	353	353	705
	Peak Hour Avg. Weekday	**102**	**102**	**204**
2019	***Projected***			
	Annual	78,797	78,797	157,594
	Peak Month	12,292	12,292	24,585
	Peak Month Avg. Weekday	397	397	793
	Peak Hour Avg. Weekday	**115**	**115**	**230**
2024	***Projected***			
	Annual	93,496	93,496	186,992
	Peak Month	14,585	14,585	29,171
	Peak Month Avg. Weekday	470	470	941
	Peak Hour Avg. Weekday	**136**	**136**	**272**
2029	***Projected***			
	Annual	110,936	110,936	221,872
	Peak Month	17,306	17,306	34,612
	Peak Month Avg. Weekday	558	558	1,117
	Peak Hour Avg. Weekday	**162**	**162**	**324**
2034	***Projected***			
	Annual	131,630	131,630	263,260
	Peak Month	20,534	20,534	41,069
	Peak Month Avg. Weekday	662	662	1,325
	Peak Hour Avg. Weekday	**192**	**192**	**384**

SOURCE: **US DOT T-100 Database, Mead & Hunt.**

4.3. Commercial Passenger Fleet Mix and Operations Forecasts

Commercial operations and fleet mix are important to consider in facility planning, as commercial aircraft size, performance, and operational levels are the basis for the design of airside facilities such as runways, taxiways, and aprons. The nature of commercial operations also affects the passenger terminal, as it should be designed to efficiently serve the type of aircraft operating at the airport.

The "dual path" nature of this Master Plan requires that existing operational constraints are accounted for, while simultaneously planning for the potential relocation of the Airport in the future. To this end, two separate forecasts were developed for commercial passenger fleet mix and operations to identify planning needs for each possible scenario. As mentioned previously, the Replacement Airport EIS was terminated in 2013, and the FAA approved six Modifications of Standards (MOS's) in November 2013 that stipulate specific airfield improvements at the existing site while imposing restrictions on aircraft types and operating procedures. Therefore, the constrained and unconstrained scenarios to be used in these forecasts will be based upon the continuation and the discontinuation of those MOS aircraft operating restrictions, respectively. The dual scenario analysis does not apply to passenger enplanements, as the enplanement forecasts simply reflect demand and have been assumed to be unaffected by aircraft type, size, operations, and flight schedules.

These commercial passenger fleet mix and operations forecasts are representative of the following two potential conditions:

1) A "**constrained**" forecast that represents the continuation of existing physical conditions and aircraft use restrictions should the Airport continue to operate at its current site throughout the 20-year planning period without changes to the current airfield layout.

2) A "**less constrained**" forecast that represents a future scenario in which the Airport could be reconfigured, expanded, or relocated to address current operational restrictions. This forecast presumes that a new site with more advantageous terrain and a larger footprint could better accommodate projected commercial aviation activity, up to a reasonable point of lowered restriction over the next 20 years.

Characteristics of potential future regional aircraft at SUN are compared to the current regional aircraft fleet in **Table B6**. This table also summarizes characteristics of larger narrow-body jet aircraft that serve similar tourist markets – however, these aircraft are shown for comparison purposes only and are not expected to be considered at the existing Airport site due to local constraints.

Commercial passenger service at SUN is currently provided with a combination of CRJ-700 regional jet aircraft and Q-400 turboprop aircraft. However, industry analysts expect that airlines will phase out the CRJ-700 over the next 10 years in favor of larger aircraft, such as the Embraer E-175 and the CRJ-900. Despite these expected fleet changes, it is likely that SUN will be one of the last destinations for the CRJ-700 such that operations by this aircraft will not be eliminated entirely from the SUN commercial fleet during the 20-year planning period. However, as passenger load factors continue to increase, airlines will either need to add more flights or transition to larger aircraft at SUN such as the CRJ-900, E-175, E-175-E2, and MRJ-90.

Table B6 **EXISTING AND POTENTIAL FUTURE COMMERCIAL AIRCRAFT FLEET TECHNICAL SPECIFICATIONS**

Aircraft Type	Wingspan	Maximum Takeoff Weight (lbs)	Typical Number of Seats	Meets Current Operational Restrictions?	Expected First Delivery
Current Commercial Aircraft at SUN					
Bombardier CRJ-700	76' 3"	72,750	70	**Yes**	Currently in Service
Bombardier Q-400	93' 3"	64,500	76	**Yes**	Currently in Service
Potential Future Commercial Aircraft (Existing Airline Fleet)					
Bombardier CRJ-900	81' 7"	80,500	88*	**Yes**	Currently in Service
Embraer E-170	85' 4"	79,340	70	**Yes**	Currently in Service
Embraer E-175	85' 4"	82,700	78	**Yes**	Currently in Service
Embraer E-190	94' 3"	105,360	98	**No**	Currently in Service
Embraer E-195	94' 3"	107,560	108	**No**	Currently in Service
* Although operationally capable of an 88-seat configuration, the CRJ-900 is not currently flown by regional airlines with a greater than 76-seat configuration due to pilot contract scope clauses.					
Potential Future Commercial Aircraft (Future Airline Fleet)					
Embraer E175-E2***	101' 8"	97,730	88	**TBD****	2020
Embraer E190-E2	110' 7"	125,400	106	**No**	2018
Embraer E195-E2	110' 7"	131,000	132	**No**	2019
Mitsubishi MRJ-70	95' 9"	81,240	78	**Yes**	2017
Mitsubishi MRJ-90***	95' 9"	87,303	92	**Yes**	2017
Bombardier CS100	115' 1"	130,000	110	**No**	2015
Bombardier CS300	115' 1"	143,999	135	**No**	2016
** Currently published performance and dimensional specifications for the E175-E2 are slightly above current SUN operational restrictions; however, it is possible that future variants may meet restrictions. If future variants do not meet restrictions, there is potential that the E175-E2 may receive a manufacturer's operational certification, or "placard", for operations below 95,000 pounds at SUN, as well as a special control tower operational procedure to mitigate for the aircraft wingspan. However, an operational certification for the E175-E2 would require cooperation of both the airline and the aircraft manufacturer, while a special operational procedure would require approval from the FAA.					
*** SkyWest Airlines currently has 100 orders each of the E175-E2 and MRJ-90.					
Comparison Narrow-Body Jet Aircraft					
Airbus A319	111' 11"	166,000	134	**No**	Currently in Service
Airbus A320	111' 11"	172,000	164	**No**	Currently in Service
Boeing 737-800	117' 5"	174,200	175	**No**	Currently in Service
Boeing 757-200	124' 10"	250,000	200	**No**	Currently in Service

SOURCE: **Aircraft Manufacturers, Mead & Hunt.**

Given current operational restrictions, airlines have an effective maximum capacity of 88 seats at SUN, as the CRJ-900 is largest aircraft currently in the regional airline fleet (in terms of seats) that meets SUN operational weight requirements of below 95,000 pounds. Furthermore, many new regional passenger aircraft expected to join the regional fleet within the next five to ten years – including the Embraer E190-E2, E-195-E2, and the Bombardier C-Series – will be unable to operate at the SUN under the current operational weight restrictions.

It is important to note that the following fleet mix forecast scenarios assume that all potential future commercial aircraft identified in Table B6 can operate at the current site without increases in runway length, improvements in approach procedures, or expansions to commercial parking aprons; these assumptions may or may not be valid. The only constraints considered in development of the fleet mix forecasts are current operating restrictions at SUN in terms of aircraft weight and wingspan.

The "constrained" fleet mix scenario for SUN (Scenario 1) assumes that the Airport will continue to be limited to aircraft with a capacity of 88 seats or less throughout the 20-year planning period. This scenario considers the potential of the 92-seat MRJ-90 entering SUN's commercial fleet mix at some point in the future. This scenario further assumes that aircraft in the 78-88 seat range will grow in importance at SUN as the CRJ-700 is phased out by the airlines. Under Scenario 1, departing seats per flight would increase from 67.7 in 2014 to 75.8 in 2034, after which this figure would likely stabilize due to the effective maximum seat capacity imposed by the operational restrictions at SUN.

The "less constrained" fleet mix scenario (Scenario 2) assumes that the Airport will be reconfigured, expanded, or relocated at some point during the 20-year planning period when commercial passenger service trends dictate. **It is important to note that the likelihood of this scenario is dependent on future community consensus that service by aircraft with greater than 92 seats and/or longer range is necessary for the Airport to function successfully.** This scenario allows for future service by existing regional aircraft with a capacity of 92 seats or greater. This scenario considers the potential of the 106-seat E190-E2, the 132-seat E195-E2, and the 135-seat CS300 entering SUN's commercial fleet at some point in the future – however it assumes that these aircraft will not play a major role at SUN within the 20-year planning due to uncertainties regarding their likely routes. This scenario further assumes that aircraft in the 78-88 seat and 92 seats or greater ranges will grow in importance at SUN as the CRJ-700 is phased out by the airlines; however, it also assumes that SUN will be one of the last destinations for the CRJ-700 such that operations by this aircraft will not be eliminated entirely from the SUN commercial fleet during the 20-year planning period. Under Scenario 2, departing seats per flight would track closely with Scenario 1 through the first five years, then diverge from Scenario 1 as operational restrictions at SUN are modified at some point beyond the five-year planning period, allowing for aircraft types with 92 seats or greater to join the fleet.

Because Scenario 1 involves continued service by smaller regional jet aircraft due to the effective maximum seat capacity imposed by current operating restrictions, passenger load factors are forecasted to rise faster for this scenario than for Scenario 2. The overall passenger load factor is expected to increase from an estimated 68.6% in 2014 to 78.0% in 2034 under Scenario 1, while the overall load factor is expected to increase to 74.0% under Scenario 2.

Forecasts of commercial passenger operations (takeoffs and landings) for both scenarios are presented in **Table B7**. These forecasts were calculated based on the preferred passenger enplanement forecast presented in Section 4.1, and the fleet mix scenarios, projected available seats, and projected load factors described above. Because all future scheduled passenger airline operations are expected to occur on aircraft with greater than 60 seats, all of these operations are considered "air carrier" operations per FAA definitions.

Table B7 **PASSENGER AIRLINE OPERATIONS FORECASTS**

Year	Enplanements	Passenger Airline Departures	Average Seats per Departure	Passenger Load Factor	Passenger Airline Operations
Historical					
2008	66,564	3,335	38.5	53.9%	**6,670**
2009	50,540	2,634	35.7	57.0%	**5,268**
2010	52,861	2,515	38.3	59.5%	**5,030**
2011	51,033	2,214	37.3	61.3%	**4,428**
2012	47,882	1,805	38.5	68.3%	**3,610**
2013	50,377	1,959	39.2	65.8%	**3,918**
2014*	66,409	1,420	67.7	68.6%	**2,840**
Scenario 1 Forecast					
2019	78,797	1,614	68.8	71.0%	**3,228**
2024	93,496	1,804	70.7	73.3%	**3,608**
2029	110,936	2,014	72.8	75.7%	**4,029**
2034	131,630	2,226	75.8	78.0%	**4,453**
CAGR (2014-2034)	*3.48%*	*2.27%*			***2.27%***
Scenario 2 Forecast					
2019	78,797	1,613	68.8	71.0%	**3,226**
2024	93,496	1,774	72.8	72.4%	**3,548**
2029	110,936	1,981	76.0	73.7%	**3,961**
2034	131,630	2,110	84.3	74.0%	**4,220**
CAGR (2014-2034)	*3.48%*	*2.00%*			***2.00%***

SOURCE: **US DOT T-100 Database, Mead & Hunt.**
*** 2014 enplanements, departures, and total operations were adjusted to account for artificially reduced enplanements associated with Airport closure from April 29 to May 21, 2014.**

The Scenario 1 commercial operations forecast predicts steady growth in operations that accelerates over the planning period as airlines reach the effective allowable maximum seat capacity at SUN and must increase capacity by increasing flight frequencies to accommodate demand. The Scenario 2 commercial operations forecast predicts slower growth in commercial operations as airlines are free to transition to aircraft better suited to increasing passenger loads without increasing flight frequencies.

In accordance with the "dual path" approach, the Master Plan will not recommend one commercial passenger operations forecast as the preferred forecast. Rather, the Scenario 1 forecast will be used to determine facility needs in the event operational restrictions at the Airport remain the same, while the Scenario 2 forecast will determine facility needs in the event the decision is made to reconfigure, expand, or relocate the Airport in order to increase the size of the regional commercial fleet.

4.4. Air Taxi and Commuter Operations Forecast

Knowledge regarding air taxi and commuter operations is used primarily to ensure that proper apron space is available to accommodate parking of these aircraft during peak times. Air taxi and commuter operations have been forecasted separately from scheduled commercial passenger service operations to facilitate ease and accuracy of calculation and comparison to the TAF, and because the air taxi market represents a different user base with its own characteristics and trends. As shown in **Table B8**, air taxi/commuter operations declined significantly in 2014 due to Delta's transition from the EMB120 Brasilia to the CRJ700 in January 2014, which resulted in a decrease in commuter operations and an increase in air carrier operations over previous years. Air taxi and commuter operations were forecasted based on the growth in air taxi and commuter operations at airports with control towers forecasted in the *FAA Aerospace Forecast Fiscal Years 2014-2034*. Air taxi and commuter operations have been forecasted to grow 0.6% per year from 2014-2024 and fall 0.1% per year from 2024-2034 as regional jets with fewer than 50 seats exit the industry.

Table B8 **AIR TAXI AND COMMUTER OPERATIONS FORECAST**

Year	FAA TAF [1]	Air Taxi/Commuter Operations Forecast[2]
2004	13,276	-
2005	14,025	-
2006	14,224	-
2007	13,162	-
2008	12,119	-
2009	10,120	-
2010	10,138	-
2011	9,489	-
2012	8,760	-
2013	8,349	-
2014	**8,507**	**5,185***
Projected		
2019	9,334	5,342
2024	10,242	5,505
2029	11,240	5,477
2034	12,336	5,450
CAGR 2014-2034	*1.88%*	*0.25%*

SOURCE: Mead & Hunt analysis.

*** 2014 base year data compiled from 2014 FAA Terminal Area Forecast (TAF), subtracting 2013 Delta SLC operations obtained from U.S. Department of Transportation T-100 data to account for Delta's transition from the Embraer 120 Brasilia to the CRJ700 on its SLC routes.**

1. FAA TAF data for the category of Air Taxi & Commuter. 2013 and 2014 figures are FAA-projected estimates using 2012 as a base year.

2. Projected air taxi/commuter operations were estimated by applying the *FAA Aerospace Forecast Fiscal Years 2014-2034*, Table 32, forecast growth in air taxi/commuter operations at airports with FAA and contract traffic control service of 0.60% for 2014-2024 and -0.10% for 2024-2034.

5. General Aviation Forecasts

General aviation (GA) is defined as all civil aircraft operations except commercial operations. The following sections describe the GA forecasts developed for the Master Plan, which include:

- **Based aircraft forecasts;**
- **Based aircraft fleet mix forecasts; and**
- **General aviation operations forecasts.**

5.1. Based Aircraft Forecast

Facility planning for based aircraft revolves around providing adequate apron and hangar storage space, as well as FBO services, to meet the needs of operators who wish to base their aircraft at SUN. Although demand for hangar and apron space at SUN does not currently exceed the existing supply, there are nonetheless only a few available hangars at the present time and GA apron space is limited during peak events. Given the affluent community, high real estate values, and large amount of business jet traffic at the Airport, the demand for business jet hangar space is high at the Airport. However, physical features, availability of land, and community desires and expectations are likely to limit hangar development and therefore based aircraft. These based aircraft projections will help estimate future demand for based aircraft facilities, but do not necessarily represent the amount of based aircraft facilities that may be attainable or desirable on the part of the Airport and the community.

In 2014, there were 157 aircraft based at the Airport. This number was determined by Airport staff, in coordination with the Fixed Base Operator (FBO), Atlantic Aviation, based on the number of aircraft that are present at the Airport more than 90 days out of the year. This based aircraft definition was used because it represents peak demand for aircraft storage hangars and tie-downs at the Airport, which varies seasonally to a much greater extent than airports in non-resort markets.

These based aircraft forecasts were prepared using many of the same methods used to project passenger enplanements. A market share forecast, an adjusted FAA TAF forecast, and three socioeconomic variable forecasts (based on Gross Regional Product (GRP), Per Capita Income, and Population) have been compared with the TAF, and a preferred forecast was selected. The growth rate and linear trend methodologies were not used to forecast based aircraft because a) there is no reliable historical based aircraft records with which to project future growth, and b) the number of based aircraft at any given airport does not typically display a historical relationship with time. The based aircraft forecasts are shown in **Table B9** and **Chart B3**. The multipliers used for the forecasts are as follows:

- **Market Share Forecast –** This forecast assumes that the ratio of 2014 SUN based aircraft to the projected 2014 national total active general aviation fleet will remain consistent throughout the planning period.
- **Adjusted Terminal Area Forecast (TAF)** – Projects an annual growth rate of 1.54% in accordance with the FAA TAF projected based aircraft for 2014-2034.
- **Socioeconomic Variable Forecasts –** Growth rates for socioeconomic indicators in the Hailey Micropolitan Statistical Area were used to project the number of based aircraft at SUN as follows:
    - **Gross Regional Product (GRP) Variable Forecast** – projects an annual growth rate of 2.51% in accordance with projected GRP growth.

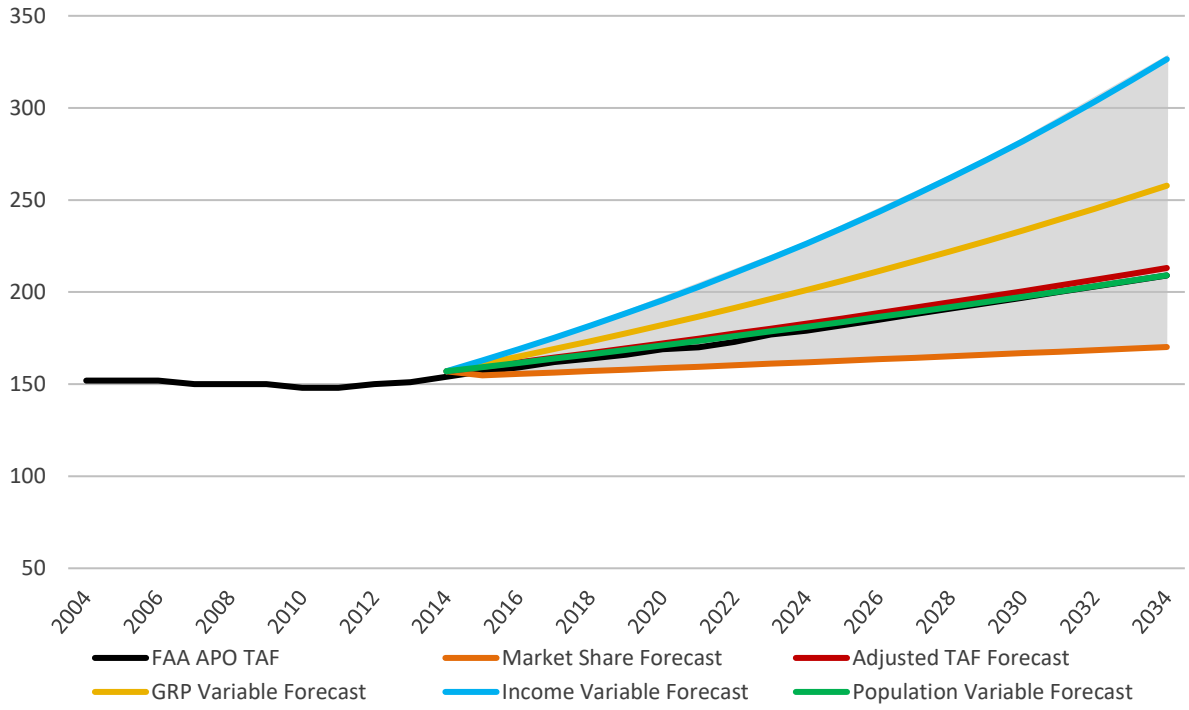
- **Per Capita Income Variable Forecast** – projects an annual growth rate of 3.73% in accordance with historical per capita income growth.
- **Population Variable Forecast** – projects an annual growth rate of 1.44% in accordance with historical population growth. It should be noted that a recent amendment to the Blaine County Comprehensive Plan projects a slower rate of population growth than is used in this forecast.

Table B9 **BASED AIRCRAFT FORECASTS**

Year	FAA Terminal Area Forecast (TAF)	Market Share Analysis[1]	Adjusted Terminal Area Forecast (TAF) 1.54%[2]	Gross Regional Product Variable 2.51%[3]	Per Capita Income Variable 3.73%[4]	Population Variable 1.44%[5]
2014*	**154**	**157**	**157**	**157**	**157**	**157**
2019	166	158	169	178	189	169
2024	179	162	183	201	226	181
2029	194	166	197	228	272	195
2034	209	170	213	258	326	209
CAGR 2014-2034	*1.54%*	*0.40%*	*1.54%*	*2.51%*	*3.73%*	*1.44%*

SOURCE: Mead & Hunt analysis.
1. Market Share growth rate calculated based on the 2014 ratio of SUN based aircraft to projected national active GA fleet throughout the planning period; national figures were obtained from the *FAA Aerospace Forecast*.
2. Adjusted TAF growth rate from the 2014-2034 Terminal Area Forecast (TAF) for based aircraft.
3. Gross Regional Product growth rate from Woods and Poole data for Hailey Micropolitan Statistical Area, 2014-2035.
4. Per Capita Income Variable growth rate from Woods and Poole data (in current dollars) for Hailey Micropolitan Statistical Area, 1995-2013.
5. Population Variable growth rate from Woods and Poole data for Hailey Micropolitan Statistical Area, 1995-2013.

Chart B3 **BASED AIRCRAFT FORECASTS**



SOURCE: **Mead & Hunt analysis.**

The preferred based aircraft forecast is the Adjusted TAF forecast. It was selected as the preferred forecast because it reflects the steady, conservative growth scenario presented by the TAF, which is in a mid-range when compared with the other scenarios presented above, but uses an accurate 2014 baseline aircraft count. The mid-range forecast offered by the Adjusted TAF forecast also supports the need to be conservative in translating anticipated based aircraft demand into estimated future hangar and apron space facility requirements with regards to the limited space for such expansion at the existing Airport site. The other forecasts were ruled out for the following reasons:

- **The FAA TAF forecast was ruled out because the 2014 base year aircraft count not accurate.**
- **The Per Capita Income Variable forecast was ruled out because high-income earners skew the per capita figure on the high end.**
- **The Market Share forecast was ruled out because based aircraft demand is higher at SUN than at the average U.S. airport.**
- **The GRP Variable forecast predicts a lower growth rate than the Per Capita Income Variable Forecast, but is still representative of fairly aggressive growth in based aircraft that is unjustified based on foreseeable conditions.**
- **The Population Variable Forecast was ruled out because it is consistent with the Adjusted TAF forecast, which is the preferred forecast.**

5.2. Based Aircraft Fleet Mix Forecast

Knowledge regarding the mix of based aircraft types at an airport plays an important role in assessing hangar and apron storage, because different aircraft have different space requirements for parking and taxiing. The FAA has reported that a strong market for business jets will drive GA activity in upcoming years. In the near-term, high fuel prices and economic concerns are dampening the GA industry, but the long-term outlook remains favorable as SUN continues to grow and the resort-based community economy remains stable throughout the planning period. Jet aircraft for general aviation purposes nation-wide are gaining ground compared with single- and multi-engine aircraft. However, single-engine aircraft are projected to remain a strong presence at SUN, due to their use to access the rugged natural areas in the Airport vicinity. Based on these factors, the relative percentages of based aircraft type are expected to remain constant throughout the planning period. A summary of the base year and projected based aircraft fleet mix is presented in **Table B10**.

Table B10 **BASED AIRCRAFT FLEET MIX FORECAST**

Year	Single-Engine	%	Multi-Engine	%	Jet	%	Heli-copter	%	Other	%	Total
2014*	**92**	**58.60%**	**17**	**10.83%**	**47**	**29.94%**	**1**	**0.64%**	**0**	**0.00%**	**157**
2019	99	58.60%	18	10.83%	51	29.94%	1	0.64%	0	0.00%	169
2024	107	58.60%	20	10.83%	55	29.94%	1	0.64%	0	0.00%	183
2029	115	58.60%	21	10.83%	59	29.94%	1	0.64%	0	0.00%	197
2034	125	58.60%	23	10.83%	64	29.94%	1	0.64%	0	0.00%	213
CAGR 2014-2034	*1.54%*		*1.54%*		*1.54%*		*0.00%*		*0.00%*		*1.54%*

SOURCE: **Mead & Hunt analysis.**
*** 2014 base year data compiled from Airport Management records.**

5.3. General Aviation Operations Forecast

GA operations represent a large portion of total aircraft operations at SUN, and are therefore important to consider when planning for peak activity needs. GA operations have generally declined at SUN in recent years, from 30,801 in 2004 to 20,310 in 2014, according to the FAA TAF. This decline reflects national travel behavior trends with respect to GA. The cost of operation and ownership of aircraft has increased, which has impacted operations and hours flown nationally, though GA operations at SUN are limited by airspace capacity given the surrounding terrain and resulting weather conditions, as well as limited available aircraft storage space.

The estimated 2014 TAF was used as the baseline, as it provides the best approximation reflecting a continuation of operational levels from 2008 to 2013 (in the 17,000 to 23,000 operations range). Although GA operations have declined historically, this forecast projects an increase of 1.54% in accordance with the preferred based aircraft growth rate identified in Section 5.1. This forecasting method was used because GA operations levels tend to be closely tied to based aircraft levels. Although the overall GA industry in the U.S. has been in decline for several years, the ratio of operations per based aircraft at SUN increased during 2013 and 2014, which may indicate a trend towards returning to pre-recession levels. Consequently, a GA operations forecast that maintains the 2014 ratio of operations per based aircraft is considered appropriate for future planning purposes. The forecast for GA operations is presented and compared to the TAF in **Table B11** and **Chart B4**.

Table B11 **GENERAL AVIATION OPERATIONS FORECAST**

Year	FAA TAF [1]	Operations per Based Aircraft Forecast[2]	Preferred Based Aircraft Forecast	Ratio of GA Operations to Based Aircraft[3]
Historical				
2004	30,801	-	-	-
2005	28,727	-	-	-
2006	26,036	-	-	-
2007	33,940	-	-	-
2008	22,780	-	-	-
2009	18,180	-	-	-
2010	20,150	-	-	-
2011	17,917	-	-	-
2012	17,377	-	-	-
2013	20,320	-	-	-
2014	**20,310**	**20,310**	**157**	**129**
Projected				
2019	21,327	21,921	**169**	**129**
2024	22,402	23,660	**183**	**129**
2029	23,539	25,538	**197**	**129**
2034	24,738	27,564	**213**	**129**
CAGR 2014-2034	*0.99%*	*1.54%*	*1.54%*	*N/A*

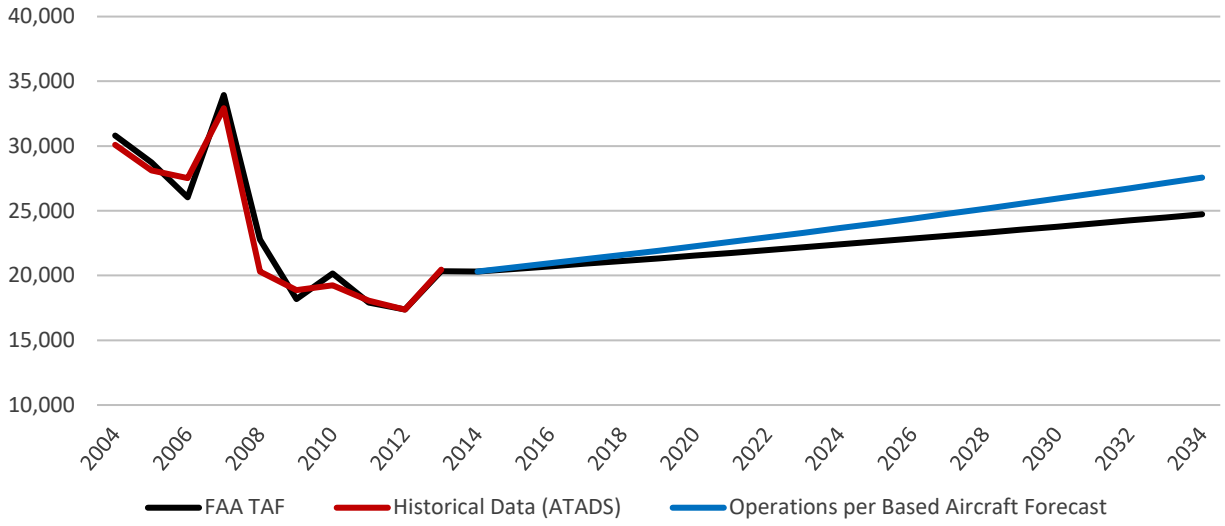
SOURCE: **Mead & Hunt analysis.**

1. Combined FAA TAF data for the categories of Itinerant GA and Local Civil operations.

2. Estimated based on continuation of 2014 baseline ratio of operations to based aircraft throughout the study period.

3. GA operations divided by preferred based aircraft forecast.

Chart B4 **GENERAL AVIATION OPERATIONS FORECAST**



SOURCE: **Mead & Hunt Analysis.**

6. Other Forecasts

6.1. Military Operations Forecast

Due to their infrequency, military operations are not a significant driver at facility needs at SUN; however, they do occur occasionally and therefore should be taken into account as part of facility planning. Local military operations consist mostly of training and reconnaissance flights, while itinerant military operations consist mostly of those required for special events and emergencies. Military operations are driven more by Federal policy decisions than by economic conditions. As a percentage of total annual aircraft operations, the number of military operations at SUN has historically fluctuated, and has been generally increasing over the past ten years, from 30 operations in 2004 to 145 operations in 2014, according to the FAA TAF. Given that the Department of Defense does not publicly share information about projected military operations, these operations are assumed to remain constant at the 2014 level of 145 operations throughout the planning period as projected by the FAA TAF.

6.2. Local and Itinerant General Aviation Operations Forecast

Local operations are conducted by aircraft operating in the traffic pattern within sight of the air traffic control tower; aircraft departing or arriving from flight in local practice areas; or aircraft executing practice instrument operations at the Airport. All operations other than local operations are defined as itinerant. Local operations are typically conducted by users based at the Airport, while itinerant operations are conducted by both based and transient users. As a result, the two types of operations have different implications for required airport facilities.

All air carrier, air taxi, and commuter operations are, by definition, itinerant. It is not possible to make predictions about the local/itinerant split for military operations, so these are assumed to remain at 2014 levels. GA operations are therefore the only category in which change in the local and itinerant proportions is significant to airport planning.

A summary of the GA operations forecast, broken down by local and itinerant operations, is shown in **Table B12**. The local-itinerant split for GA operations from 2004 to 2014 averaged 11.1% local and 88.9% itinerant. The local and itinerant GA operations forecast assumes these average percentages will remain the same throughout the planning period.

Table B12 **LOCAL AND ITINERANT GENERAL AVIATION OPERATIONS FORECAST**

Year	General Aviation Operations	% Local	Local Operations	% Itinerant	Itinerant Operations
Historical					
2004	30,801	15.5%	4,788	84.5%	26,013
2005	28,727	12.2%	3,510	87.8%	25,217
2006	26,036	12.9%	3,368	87.1%	22,668
2007	33,940	19.0%	6,461	81.0%	27,479
2008	22,780	7.6%	1,731	92.4%	21,049
2009	18,180	7.8%	1,410	92.2%	16,770
2010	20,150	8.7%	1,744	91.3%	18,406
2011	17,917	5.7%	1,016	94.3%	16,901
2012	17,377	7.7%	1,335	92.3%	16,042
2013	20,320	13.8%	2,812	86.2%	17,508
2014*	20,310	10.9%	2,205	89.1%	18,105
Ave. % 2004-2014	-	*11.1%*	-	*88.9%*	-
Projected					
2019	21,921	*11.1%*	2,433	*88.9%*	19,488
2024	23,660	*11.1%*	2,626	*88.9%*	21,034
2029	25,538	*11.1%*	2,835	*88.9%*	22,703
2034	27,564	*11.1%*	3,060	*88.9%*	24,504
CAGR 2014-2034	*1.54%*	-	*1.54%*	-	*1.54%*

SOURCE: Mead & Hunt analysis; historical data compiled from FAA Terminal Area Forecast (TAF).
*** Estimated.**

6.3. Instrument Operations Forecast

Forecasting instrument operations will help the Airport ensure that future airport facilities accommodate equipment needs and standards associated with instrument approach and departure procedures. Instrument operations are those conducted under an Instrument Flight Rules (IFR) flight plan. IFR conditions apply in the airspace surrounding the Airport when visibility is less than 3 miles and/or the cloud ceiling is less than 1,000 feet. Pilots operating during IFR conditions must have an instrument rating and file an IFR flight plan. Instrument operations can be conducted in any type of aircraft equipped with appropriate instruments, whether commercial, general aviation, or military. Commercial operators typically require that flight crews file IFR flight plans for operations in all weather conditions, including Visual Flight Rules (VFR) conditions.

The instrument operations forecast was developed by multiplying the average percentage of instrument operations from 2004 through 2014 by the aggregate projected operations presented in this chapter. Historical and forecasted instrument operations are presented in **Table B13**.

Table B13 **INSTRUMENT OPERATIONS FORECAST**

Year	All Operations[1]	% IFR	IFR Operations	% VFR	VFR Operations
Historical					
2004	44,950	47.16%	21,197	52.84%	23,753
2005	43,618	52.06%	22,706	47.94%	20,912
2006	42,975	51.34%	22,065	48.66%	20,910
2007	46,809	43.13%	20,191	56.87%	26,618
2008	32,960	61.46%	20,257	38.54%	12,703
2009	29,966	60.77%	19,426	39.23%	12,540
2010	30,247	56.06%	16,957	43.94%	13,290
2011	28,513	57.29%	16,334	42.71%	12,179
2012	26,683	56.48%	15,070	43.52%	11,613
2013	29,809	50.39%	15,022	49.61%	14,787
2014	**28,480**	**60.29%**	**17,170**	**39.71%**	**11,310**
Ave. % 2004-2014	-	*54.22%*	-	*45.78%*	-
Projected - using Scenario 1 Passenger Airline Operations Forecast					
2019	30,636	*54.22%*	16,611	*45.78%*	14,025
2024	32,918	*54.22%*	17,848	*45.78%*	15,070
2029	35,189	*54.22%*	19,080	*45.78%*	16,109
2034	37,612	*54.22%*	20,394	*45.78%*	17,218
CAGR 2014-2034	*1.40%*	-	0.86%	-	2.12%
Projected - using Scenario 2 Passenger Airline Operations Forecast					
2019	30,634	*54.22%*	16,610	*45.78%*	14,024
2024	32,858	*54.22%*	17,816	*45.78%*	15,042
2029	35,121	*54.22%*	19,043	*45.78%*	16,078
2034	37,379	*54.22%*	20,267	*45.78%*	17,112
CAGR 2014-2034	*1.37%*	-	0.83%	-	2.09%

SOURCE: Mead & Hunt analysis; historical data compiled from FAA Air Traffic Activity System (ATADS).
1. Compiled from preferred forecasts for military, GA, air taxi/commuter, and air carrier operations identified in previous sections.

7. Peak Period Operations Forecasts

It is important to assess airport demand during peak periods. The peak period at SUN for airport activity overall, as well as for GA and air taxi activity specifically, is the annual Allen & Company conference, which is held in Sun Valley during the second week of July. During this peak event, a large number of GA and air taxi aircraft must be accommodated at SUN. The aircraft must be parked on the aprons on the south end of the Airport, which typically overflow and create congestion during this event. Other periods during the year that tend to have high levels of

activity are generally during the other summer months, and to a lesser degree during the winter months. These other peak periods correspond to high activity levels during both holidays and tourist events.

Assumptions for the peak period operations forecast were drawn from daily 2014 operations data reported by the airport traffic control tower. According to this data, 16 percent of annual operations occurred in the peak month (July); peak day operations accounted for seven percent of peak month operations; and peak hour operations accounted for approximately ten percent of the peak day operations. The peak period operational forecast is illustrated in **Table B14.**

Table B14 **PEAK PERIOD AIRCRAFT OPERATIONS FORECAST**

Year	Total Annual Operations[1]	Peak Month Operations	Peak Day of Peak Month Operations	Peak Hour/Peak Day Ratio	Peak Hour Operations
2014	28,480	4,557	319	10%	32
2019	30,636	4,902	343	10%	34
2024	32,918	5,267	369	10%	37
2029	35,189	5,630	394	10%	39
2034	37,612	6,018	421	10%	42

SOURCE: Mead & Hunt.
1. Compiled from preferred forecasts for military, GA, air taxi/commuter, and air carrier operations identified in previous sections.

Forecasts were also developed for GA and air taxi fleet mix during the peak event. The identification of fleet mix for peak GA and air taxi operations will assist in determining future airport facility needs in general, as well as during peak events.

The peak GA and air taxi fleet mix forecast presented in **Table B15** were created by applying approximate fleet mix percentages to the peak period operations forecast presented above. The generalized fleet mix percentages were compiled based on discussion with Airport management and control tower staff. The Airport has historically observed that jet operations represent nearly 90% of total GA and air taxi operations during the peak day and hour in particular (i.e., during the annual peak event), as compared to the peak month overall.

Table B15 **GA AND AIR TAXI PEAK PERIOD OPERATIONS FLEET MIX FORECASTS**

Year	Total Operations	Jet	Multi-Engine	Single-Engine	Helicopter	Other
Peak Day Forecast						
2014						
GA	227	203	11	11	1	1
Air Taxi	58	52	6	0	0	0
TOTAL	285	255	17	11	1	1
2019						
GA	245	221	11	11	1	1
Air Taxi	62	56	6	0	0	0
TOTAL	307	277	17	11	1	1
2024						
GA	263	236	12	12	1	1
Air Taxi	67	60	7	0	0	0
TOTAL	330	296	19	12	1	1
2029						
GA	281	253	13	13	1	1
Air Taxi	72	65	7	0	0	0
TOTAL	353	318	20	13	1	1
2034						
GA	300	270	14	14	1	1
Air Taxi	77	69	8	0	0	0
TOTAL	377	339	22	14	1	1
Peak Hour Forecast						
2014						
GA	23	21	1	1	0	0
Air Taxi	6	5	1	0	0	0
TOTAL	29	26	2	1	0	0
2019						
GA	24	22	1	1	0	0
Air Taxi	6	5	1	0	0	0
TOTAL	30	27	2	1	0	0
2024						
GA	25	23	1	1	0	0
Air Taxi	7	6	1	0	0	0
TOTAL	32	29	2	1	0	0
2029						
GA	27	25	1	1	0	0
Air Taxi	7	6	1	0	0	0
TOTAL	34	31	2	1	0	0
2034						
GA	29	27	1	1	0	0
Air Taxi	8	7	1	0	0	0
TOTAL	37	34	2	1	0	0

SOURCE: **Mead & Hunt, SUN Airport Management, SUN Airport Traffic Control Tower.**

8. Summary

Based upon the analysis for each type of aviation activity described in this chapter, this Master Plan recommends that the following forecasts be used as the preferred forecasts. This information will be used in the next chapter to document and analyze both airside and landside facility requirements. Therefore, the forecasts of aviation activity are an important part of the information base that will be used to develop plans for the Airport and formulate implementation decisions relating to airport development.

Table B16 **SUMMARY OF PREFERRED MASTER PLAN FORECASTS**

Activity Measure	2014 (Actual/Estimated)	2019 (Projected)	2024 (Projected)	2034 (Projected)
Passenger Enplanements	66,409	78,797	93,496	131,630
Based Aircraft	157	169	183	213
Aircraft Operations				
Air Carrier	2,840	3,228	3,608	4,453
Air Taxi and Commuter	5,185	5,342	5,505	5,450
General Aviation	20,310	21,921	23,660	27,564
Military	145	145	145	145
Total Aircraft Operations	**28,480**	**30,636**	**32,918**	**37,612**

The forecasts presented in this chapter are compared with the FAA TAF limits in **Table B17**. According to FAA's June 2008 guidance, Review and Approval of Aviation Forecasts, "For all classes of airports, forecasts for total enplanements and total operations are considered consistent with the FAA's TAF" if the forecasts are within 10 percent of the TAF figures during the first five years and within 15 percent during the first ten years. "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."

Note: For purposes of comparison with the TAF, passenger airline operations forecast Scenario 1 was used because it represents the more conservative future growth scenario.

Table B17 **COMPARISON OF AVIATION ACTIVITY FORECASTS AND TAF FORECASTS, 2014-2034 (FAA FORMAT)**

Year	Airport Forecasts	TAF	AF/TAF % Difference
PASSENGER ENPLANEMENTS			
Base Year (2014)	66,409	52,130	27.4%
2019	78,797	61,847	27.4%
2024	93,496	73,378	27.4%
2029	110,936	87,063	27.4%
2034	131,630	99,824	31.9%
COMMERCIAL OPERATIONS			
Base Year (2014)	8,025	9,283	-13.6%
2019	8,570	10,110	-15.2%
2024	9,113	11,018	-17.3%
2029	9,506	12,016	-20.9%
2034	9,903	13,112	-24.5%
TOTAL OPERATIONS			
Base Year (2014)	28,480	29,738	-4.2%
2019	30,636	31,582	-3.0%
2024	32,918	33,565	-1.9%
2029	35,189	35,700	-1.4%
2034	37,612	37,995	-1.0%

SOURCE: **Mead & Hunt analysis.**

As shown in the table, the total operations forecast is within the TAF limits. However, the commercial operations and passenger enplanements forecasts are outside of the TAF limits throughout the 20-year forecast period.

Although the passenger enplanements forecast is outside of the TAF limits, the preferred Master Plan forecast uses an adjusted baseline figure to reflect actual enplanements for 2014, which is a higher and more accurate baseline number than that shown in the TAF. The preferred passenger enplanements forecast uses the same growth rate projected in the TAF, but with an adjusted baseline figure.

The commercial operations forecast presented above is also outside of the TAF limits. The projected commercial operations levels can be justified, however, because average commercial service aircraft size increased in 2014 as Delta Airlines transitioned from the 34-seat Embraer Brasilia 120 to the 65-seat CRJ-700 and reduced the frequency of their operations at SUN. The average commercial service aircraft size is expected to continue to grow throughout the 20-year forecast period. This increase in average aircraft size at SUN is causing a corresponding temporary decrease in commercial operations, due to the increase in available seats. For that reason, commercial operations are projected to be below the TAF limits throughout the forecast period.