Chapter 2 Aviation Demand Forecasts

The definition of demand that may reasonably be expected to occur during the useful life of an airport's key components (e.g., runways, taxiways, terminal buildings, etc.) is an important factor in facility planning. In airport master planning, this involves projecting potential aviation activity for at least a 20-year timeframe. Aviation demand forecasting for Powell Municipal Airport (POY) will primarily consider based aircraft, aircraft operations, peak activity periods, and the critical aircraft.

The Federal Aviation Administration (FAA) has oversight responsibility to review and approve aviation forecasts developed in conjunction with airport planning studies. The FAA reviews individual airport forecasts with the objective of comparing them to its *Terminal Area Forecasts* (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 that 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 forecast 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, *Airport Master Plans*, outlines seven standard steps involved in the forecast process:

1. **Identify Aviation Activity Measures**: Determine the levels and types of aviation activities likely to impact facility needs. For general aviation, this typically includes based aircraft and operations.

2. **Review Previous Airport Forecasts**: These may include the FAA's TAF, state or regional system plans, and previous master 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 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;
   - 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 any certainty; therefore, it is important to remember that forecasts should serve only as guidelines, and planning must remain flexible enough to respond to a range of unforeseen developments.

The following forecast analysis for the airport was produced following these basic guidelines. Existing forecasts are examined and compared against current and historical activity. The 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 airport management to make planning adjustments, as necessary, to maintain a viable, efficient, and cost-effective facility.

The forecasts for this master plan will utilize a base year of 2023 with a long-range forecast out to 2043.

NATIONAL AVIATION TRENDS

Each year, the FAA updates and publishes a national aviation forecast. Included in this publication are forecasts for large air carriers, regional/commuter air carriers, general aviation, and FAA workload measures. The forecasts are prepared to meet the budget and planning needs of the FAA and provide information that can be used by state and local authorities, the aviation industry, and the general public. The current edition upon preparation of this chapter was *FAA Aerospace Forecast – Fiscal Years 2023-2043*, published in May 2023. The FAA primarily uses the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets. The following discussion is summarized from the *FAA Aerospace Forecast*.

Since its deregulation in 1978 and the Great Recession of 2007-2009, the U.S. commercial air carrier industry has been characterized by boom-to-bust cycles. The volatility associated with these cycles was thought by many to be a structural feature of an industry that was capital intensive but cash poor; however, the Great Recession of 2007-2009 marked a fundamental change in the operations and finances of U.S. airlines. Since the end of the recession in 2009, U.S. airlines have revamped their business models to minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel-efficient aircraft. To increase operating revenues, carriers initiated new services that customers were willing to purchase and started charging separately for services that were historically bundled in the price of a ticket. The industry experienced an unprecedented period of consolidation, with three major mergers occurring within five years. The results of these efforts were impressive: 2019 marked the eleventh consecutive year of profitability for the U.S. airline industry.

The COVID-19 pandemic in 2020 effectively ended those boom years, with airline activity and profitability plummeting almost overnight. In response, airlines cut capacity and costs, and most were able to weather the storm. Some small regional carriers ceased operations as a result of the pandemic, but no mainline carriers did. Some segments of aviation were less impacted: cargo activity surged, boosted by consumer purchases, and general aviation generally maintained pre-pandemic levels of activity. By the middle of 2021, leisure travel began to rebound with the introduction of vaccines and the lifting of some local restrictions. Two new low-cost carriers were formed and one regional carrier that had ceased operations in 2020 was revived. By the third quarter of 2021, industry profitability neared the breakeven point, and by the end of 2022, U.S. airlines reported that business demand had recovered to 70-80 percent of pre-pandemic levels. Higher fares accompanied the strong rebound in leisure demand, leading to positive financial results. The top nine U.S. passenger carriers posted operating and net profits, proving strong success for the new business models air carriers utilized to weather the pandemic.

The business changes airlines implemented due to the pandemic will shape the industry long after recovery is complete. Airlines retired older, less fuel-efficient aircraft and encouraged voluntary employee separations. This has led to airlines seeking newer aircraft investments while meeting the current demand for the rebuilding of business and international travel, which has lagged behind leisure traffic during the recovery. There is confidence that U.S. airlines can generate solid returns on capital and sustained profits; however, over the long term, aviation demand will be driven by economic activity as the growing U.S. and world economies provide the basis for aviation growth.

ECONOMIC ENVIRONMENT

According to the FAA forecast, the annual gross domestic product (GDP) of the U.S. is expected to increase by 1.8 percent over the next 20 years. U.S. carriers posted an unexpected profit in 2022, and the FAA expects carriers to remain profitable over the next few years as demand rises, despite higher fares which offset the raised labor and fuel costs. As yields stabilize and carriers return to levels of capacity consistent with their fixed costs and shed excess debt, consistent profitability should continue. Over the long term, a competitive and profitable aviation industry is anticipated, characterized by increasing demand for air travel, and airfares are expected to grow more slowly than overall inflation, reflecting growing U.S. and global economies.

Prior to the COVID-19 pandemic, the U.S. economy was recovering from the most serious economic downturn and slow recovery since the Great Depression. Demand for aviation is fundamentally driven by economic activity; as economic growth picks up, so will growth in aviation activity. Overall, the FAA forecast calls for annual passenger growth over the next 20 years to average 2.7 percent. Oil prices surged to $93 per barrel in 2022, largely due to the Russian invasion of Ukraine, after averaging $55 per barrel over the five-year period from 2016 to 2021. Prices are expected to ease over the next two years before slowly climbing to $113 per barrel by the end of the forecast period in 2043.

FAA GENERAL AVIATION FORECASTS

The long-term outlook for general aviation (GA) is promising, as growth at the high end of the segment offsets continuing retirements at the traditional low end. The active general aviation fleet is forecasted to remain relatively stable between 2023 and 2043, increasing by just 0.2 percent. While steady growth in both GDP and corporate profits results in continued growth of the turbine and rotorcraft fleets, the largest segment of the fleet (fixed-wing piston aircraft) continues to shrink over the forecast period.

The FAA forecasts the fleet mix and hours flown for single-engine piston (SEP) aircraft; multi-engine piston (MEP) aircraft; turboprops; business jets; piston and turbine helicopters; and light sport, experimental, and other aircraft (e.g., gliders and balloons). The FAA forecasts active aircraft, not total aircraft. An active aircraft is one that is flown at least one hour during the year. From 2010 through 2013, the FAA undertook an effort to have all aircraft owners re-register their aircraft. This effort resulted in a 10.5 percent decrease in the number of active general aviation aircraft, mostly in the piston category. **Table 2A** shows the primary general aviation demand indicators, as forecast by the FAA.

TABLE 2A | FAA General Aviation Forecast

Demand Indicator	2023	2043	CAGR
General Aviation Fleet			
Total Fixed-Wing Piston	136,290	118,975	-0.7%
Total Fixed-Wing Turbine	26,645	39,740	2.0%
Total Helicopters	10,320	13,870	1.5%
Total Other (experimental, light sport, etc.)	35,840	43,810	1.0%
Total General Aviation Fleet:	**209,095**	**216,395**	**0.2%**
General Aviation Operations			
Local	14,801,816	16,622,293	0.6%
Itinerant	15,077,947	16,704,132	0.5%
Total General Aviation Operations:	**29,879,763**	**33,326,425**	**0.5%**

CAGR = compound annual growth rate (2023-2043)

Source: FAA Aerospace Forecast – FY 2023-2043

General Aviation Fleet Mix

For 2023, the FAA estimates there are 136,290 piston-powered fixed-wing aircraft in the national fleet. That number is forecasted to decline by 0.7 percent by 2043, resulting in 118,975 aircraft. This includes a decline of 0.7 percent in SEP aircraft and a decline of 0.2 percent in MEP aircraft.

Total turbine aircraft are forecasted to grow at an annual rate of 2.0 percent through 2043. The FAA estimates there are 26,645 fixed-wing turbine-powered aircraft in the national fleet in 2023 and there will be 39,740 by 2043. Turboprops are forecasted to grow by 0.8 percent annually, while business jets are projected to grow by 2.7 percent annually through 2043.

Total helicopters are projected to grow by 1.5 percent annually in the forecast period. There are an estimated 10,320 total helicopters in the national fleet in 2023, and that number is expected to grow to a total of 13,870 by 2043. This includes annual growth rates of 0.5 percent for piston helicopters and 1.8 percent for turbine helicopters.

The FAA also forecasts experimental aircraft, light sport aircraft (LSA), and others. Combined, there are an estimated 35,840 other aircraft in 2023, which are forecasted to grow to 43,810 by 2043 for an annual growth rate of 1.0 percent.

General Aviation Operations

The FAA also forecasts total operations based on activity at control towers across the United States. Operations are categorized as air carrier, air taxi/commuter, general aviation, and military. While the fleet size remains relatively level, the number of general aviation operations at towered airports is projected to increase from 29.9 million in 2023 to 33.3 million in 2043, with an average increase of 0.5 percent per year as growth in turbine, rotorcraft, and experimental hours offsets a decline in fixed-wing piston hours. This includes annual growth rates of 0.6 percent for local general aviation operations and 0.5 percent for itinerant general aviation operations. **Exhibit 2A** presents the historical and forecasted U.S. active general aviation aircraft and operations.

General Aviation Aircraft Shipments and Revenue

On an annual basis, the General Aviation Manufacturers Association (GAMA) publishes an aviation industry outlook, which documents past and current trends and provides an assessment of the future condition of the general aviation industry. **Table 2B** presents historical data related to general aviation aircraft shipments.

Worldwide shipments of general aviation airplanes increased in the year 2022, with a total of 2,818 units delivered around the globe, compared to 2,646 units in 2021 – the second year in a row to experience an increase after the drop during 2020, when only 2,408 units were delivered. Worldwide general aviation billings were the highest in 2014. In 2022, an increase in new aircraft shipments generated more than $22 billion, compared to $21.6 billion in the previous year. North America continues to be the largest market for general aviation aircraft and leads in the manufacturing of piston, turboprop, and jet aircraft. The Asia-Pacific region is the second largest market for piston-powered aircraft, while Latin America is the second leading in the turboprop market and Europe leads in business jet deliveries.

TABLE 2B | Annual General Aviation Airplane Shipments

Manufactured Worldwide and Factory Net Billings						
Year	Total	Single-Engine Piston	Multi-Engine Piston	Turboprop	Jet	Net Billings ($ million)
2002	2,677	1,591	130	280	676	11,778
2003	2,686	1,825	71	272	518	9,998
2004	2,962	1,999	52	319	592	12,093
2005	3,590	2,326	139	375	750	15,156
2006	4,054	2,513	242	412	887	18,815
2007	4,277	2,417	258	465	1,137	21,837
2008	3,974	1,943	176	538	1,317	24,846
2009	2,283	893	70	446	874	19,474
2010	2,024	781	108	368	767	19,715
2011	2,120	761	137	526	696	19,042
2012	2,164	817	91	584	672	18,895
2013	2,353	908	122	645	678	23,450
2014	2,454	986	143	603	722	24,499
2015	2,331	946	110	557	718	24,129
2016	2,268	890	129	582	667	21,092
2017	2,324	936	149	563	676	20,197
2018	2,441	952	185	601	703	20,515
2019	2,658	1,111	213	525	809	23,515
2020	2,408	1,164	157	443	644	20,048
2021	2,646	1,261	148	527	710	21,603
2022	2,818	1,366	158	582	712	22,866

Source: GAMA 2022 Annual Report

Business Jets | Business jet deliveries increased from 710 units in 2021 to 712 units in 2022. The North American market accounted for 67.6 percent of business jet deliveries, which is a 1.7 percent increase in market share compared to 2021.

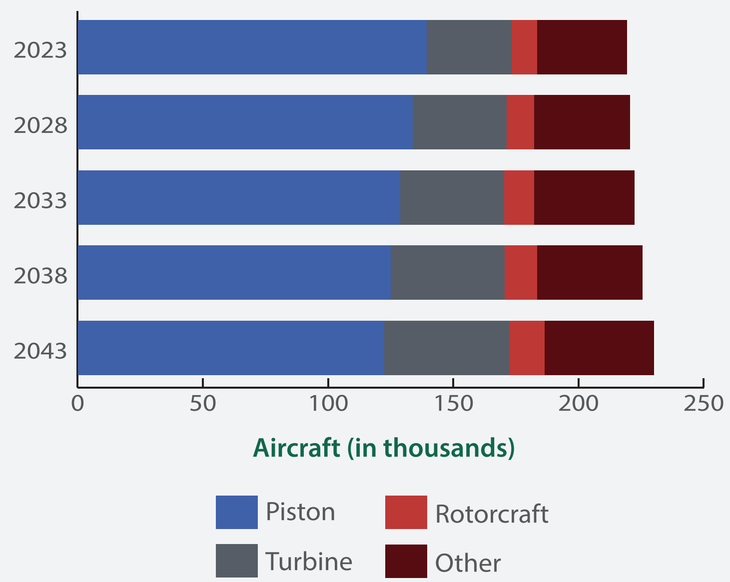
Turboprops | Turboprop shipments increased from 527 in 2021 to 582 in 2022. North America's market share of turboprop aircraft increased by 3.1 percent in the last year. The Europe, Middle East and Africa, and Asia-Pacific market shares decreased, while the Latin America market share increased.

Pistons | In 2022, piston airplane shipments increased to 1,524 units from 1,409 units in the prior year. North America's market share of piston aircraft deliveries rose 1.2 percent from the year 2021. The Europe, Latin America, and Middle East and Africa regions experienced a positive rate in market shares during the past year, while the Asia-Pacific market saw a decline.

U.S. PILOT POPULATION

There were 476,346 active pilots certificated by the FAA at the end of 2022, with 482,025 active pilots projected in 2023. All pilot categories (except private and recreational-only certificates) are expected to continue to increase for the forecast length. Excluding student pilots, the number of active pilots is projected to increase by about 28,645 (up 0.3 percent annually) between 2023 and 2043. The airline transport pilot (ATP) category is forecasted to increase by 26,200 (up 0.7 percent annually). Sport pilots are predicted to increase by 2.5 percent, commercial pilots will remain steady over the forecast period, and private pilot certificates are projected to decrease at an average annual rate of 0.2 percent through 2043. The FAA has currently suspended the student pilot forecast.

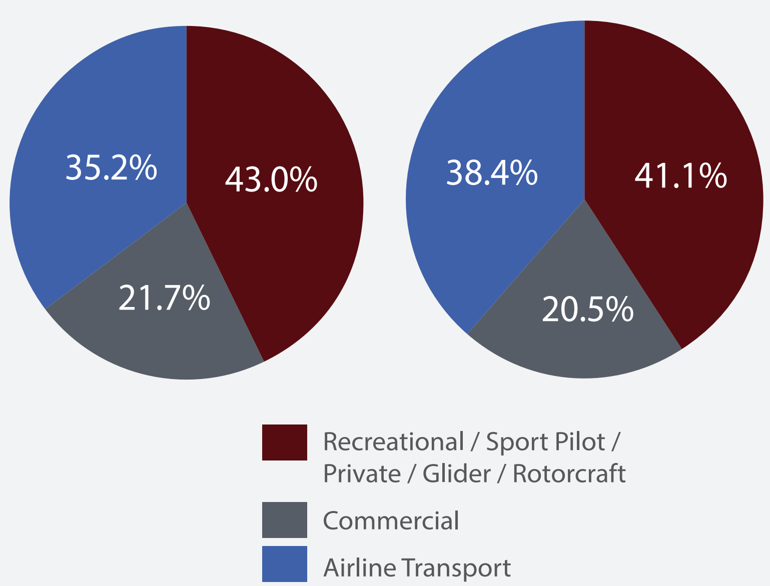
U.S. Active General Aviation Aircraft



Active Pilots By Certificate

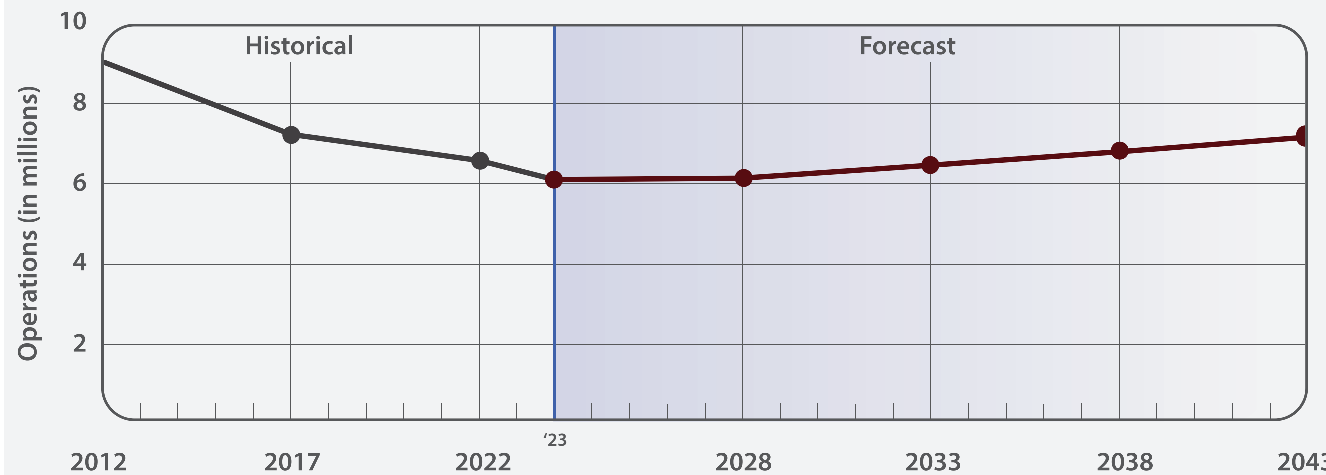
2023
Total Active Pilots:
482,025*

2043
Total Active Pilots:
510,670*

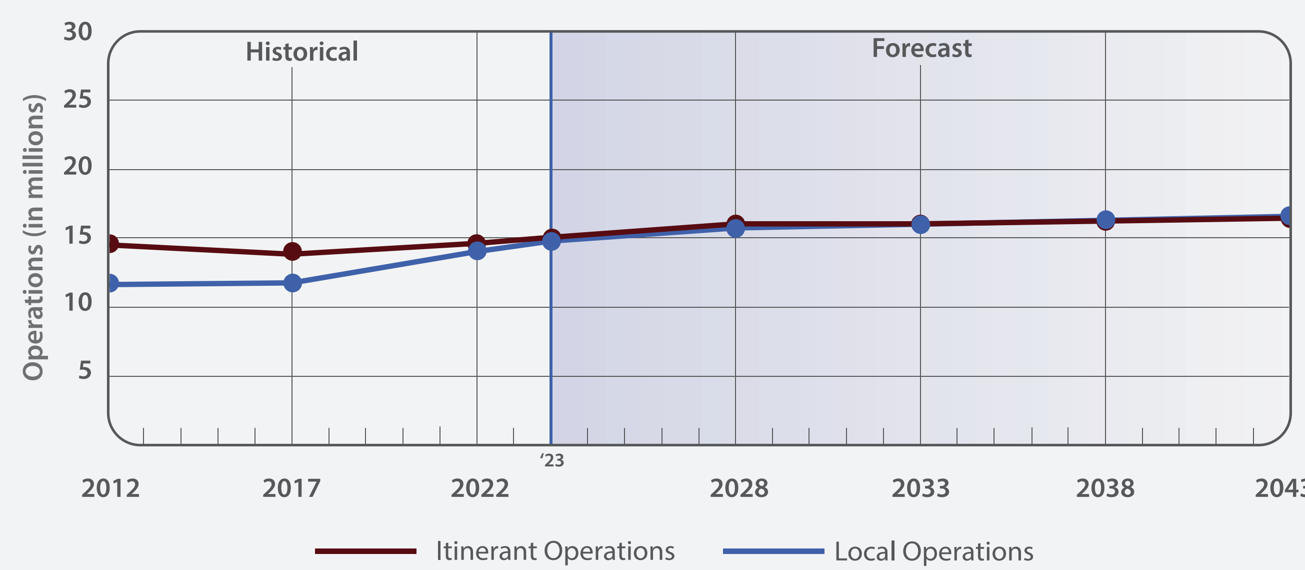


Excludes Student Pilot Certificates

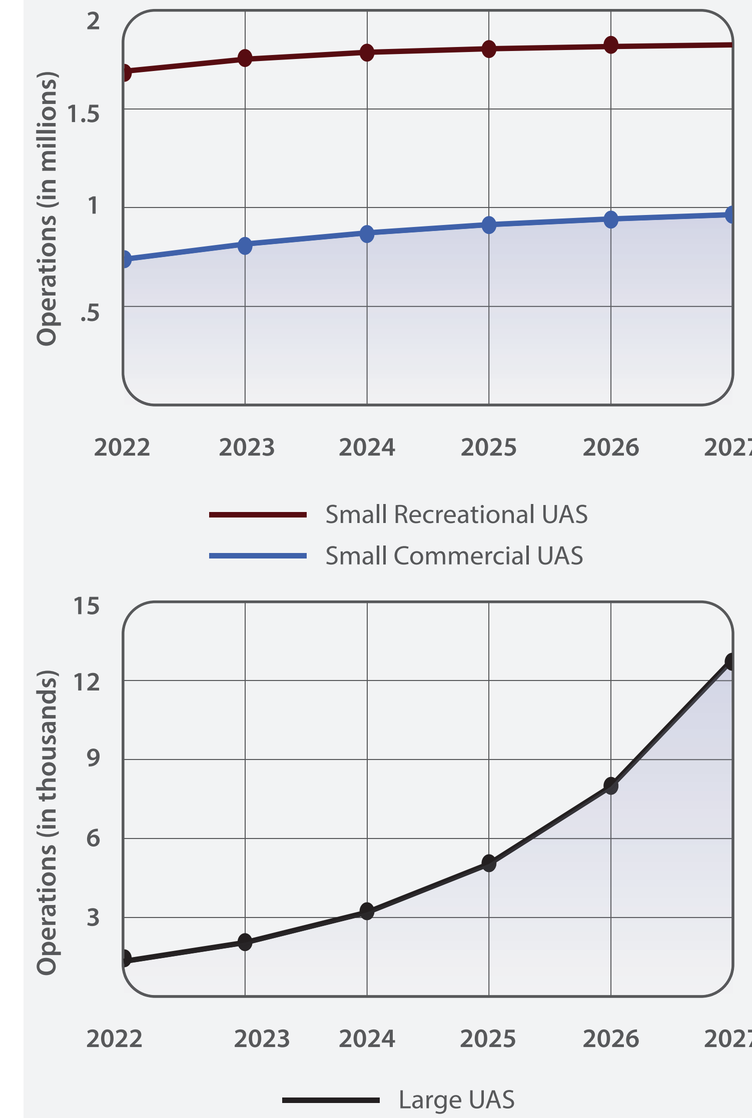
U.S. Air Taxi Operations



U.S. General Aviation Operations



UAS Fleet



*Large UAS units interpolated for 2023-2026.

Exhibit 2A
NATIONAL GENERAL AVIATION FORECASTS

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UNMANNED AIRCRAFT SYSTEMS (UAS)

Unmanned aircraft systems (UAS) have been experiencing healthy growth across the nation. A UAS is a remotely piloted aircraft that can be used for a variety of purposes, including recreational flying, business/corporate uses (such as package delivery), public services (including search and rescue support), and use in military missions. Since 2015, the FAA has required all recreational/model small UAS (those that weigh more than 0.55 pounds and less than 55 pounds) to be registered. In 2022, there were an estimated 1.69 million registered recreational UAS, which the FAA forecasts to grow to approximately 1.82 million units by 2027. Commercial/non-model small UAS also must be registered and were estimated to total around 727,000 units in 2022. The FAA forecasts this figure to grow to around 955,000 by 2027. UAS that weigh more than 55 pounds are considered large UAS and operate under separate rules. A public aircraft operator certification and a tail number are required for large UAS. In 2022, there was an active fleet of 1,206 large UAS. This number is expected to increase to 12,651 aircraft by the end of 2027.

RISKS TO THE FORECAST

While the FAA is confident that its forecasts for aviation demand and activity can be reached, they are dependent on several factors, including the strength of the global economy, security (including the threat of international terrorism), and oil prices. Higher oil prices could lead to further shifts in consumer spending away from aviation, dampening a recovery in air transport demand. The COVID-19 pandemic introduced a new risk, and although the industry has rebounded, the threat of future global health emergencies and potential economic fallout remains.

AIRPORT SERVICE AREA

The initial step in determining the aviation demand for an airport is to define its generalized service area for various segments of aviation. The service area is determined primarily by evaluating the location of competing airports, their capabilities, their services, and their relative attraction and convenience. In determining the aviation demand for an airport, it is necessary to identify the role of the airport, as well as the specific areas of aviation demand the airport is intended to serve. Powell Municipal Airport is classified as a Local General Aviation (GA) airport within the NPIAS, meaning that its primary role is to provide the community with access to local and regional markets. General aviation, which includes all segments of the aviation industry except commercial air carriers and the military, is the largest component of the national aviation system. It includes activities such as pilot training, recreational flying, and the use of sophisticated turboprop and jet aircraft for business and corporate use.

The service area for an airport is a geographic region from which an airport can be expected to attract the largest share of its activity. The definition of the service area can then be used to identify other factors, such as socioeconomic and demographic trends, that influence aviation demand at an airport. Aviation demand will be impacted by the proximity of competing airports, the surface transportation network, and the strength of general aviation services provided by an airport and competing airports.

As in any business enterprise, the more attractive the facility is in terms of service and capabilities, the more competitive it will be in the market. If an airport's attractiveness increases in relation to nearby airports, so will the size of its service area. If facilities and services are adequate and/or competitive, some level of aviation activity might be attracted to an airport from more distant locales.

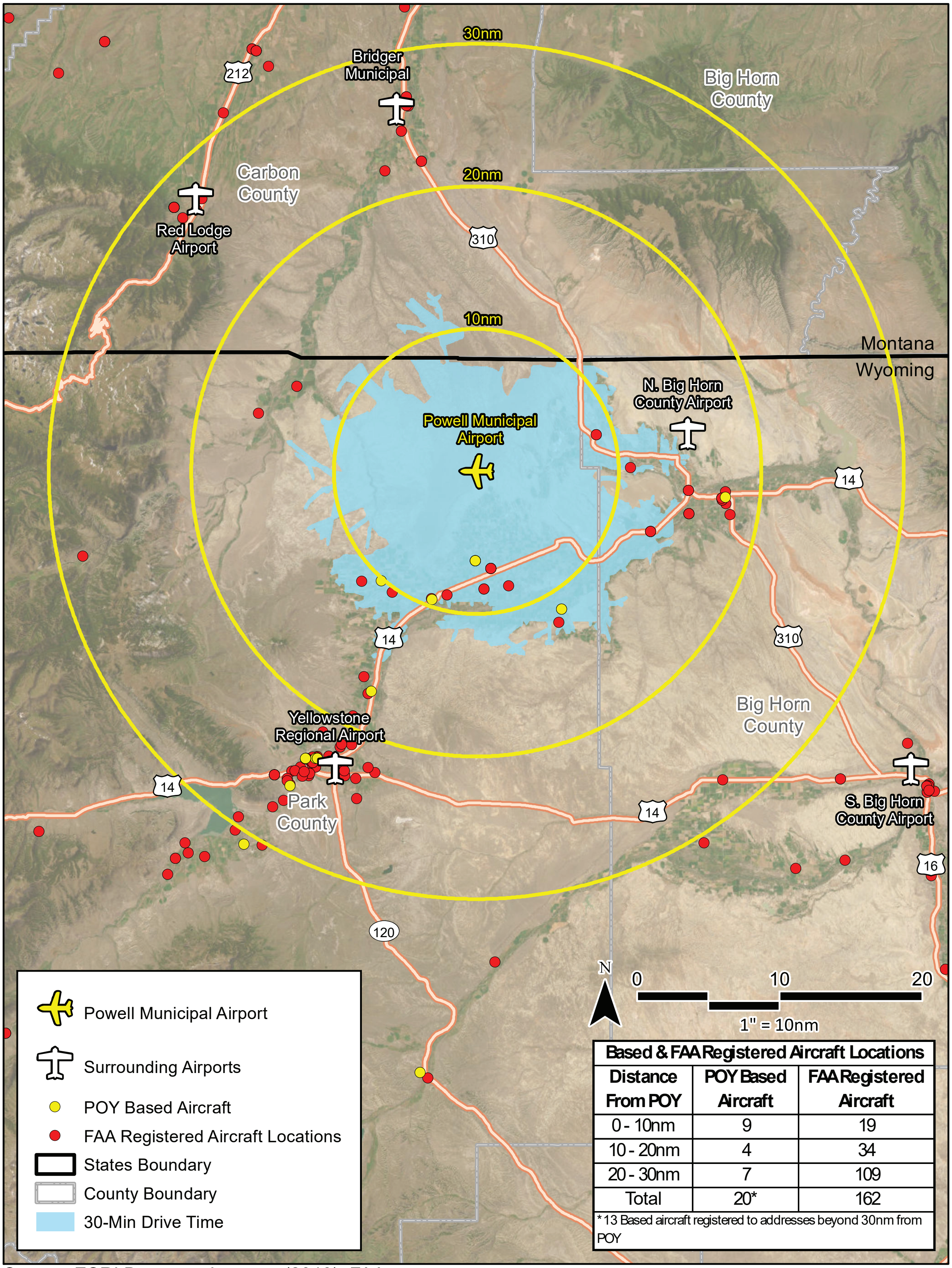
As a Local GA airport, Powell Municipal Airport's service area is driven by aircraft owners/operators and where they choose to base their aircraft. The primary consideration of aircraft owners/operators when choosing where to base their aircraft is convenience (i.e., easy access and proximity to the airport). As a general rule, an airport's service area can extend up to and beyond 30 miles. The proximity and level of general aviation services are largely a defining factor when describing the general aviation service area. A description of nearby airports was previously completed in Chapter One, as presented on Exhibit 1F. There are four public-use airports within 30 nautical miles (nm) of Powell Municipal Airport that provide varying levels of services and amenities:

- North Big Horn County Airport (U68)
- Yellowstone Regional Airport (COD)
- Bridger Municipal Airport (6S1)
- Red Lodge Airport (RED)

When discussing the general aviation service area, two primary demand segments need to be addressed. The first component to determine is the airport's ability to attract based aircraft; the most effective method is to examine the number of registered aircraft owners in proximity to the airport. As previously mentioned, aircraft owners typically choose to base at airports near their homes or businesses. Based on the current registered aircraft data (presented on **Exhibit 2B**), there are 162 registered aircraft within 30 nm of Powell Municipal Airport. These include aircraft registered in Park and Big Horn Counties in Wyoming, as well as Carbon County in Montana. Of these 162 aircraft, 33 (or approximately 20 percent) are based at the airport, according to airport records.

The second demand segment to consider is itinerant aircraft operations. In most instances, pilots will opt to utilize airports nearer their intended destinations; however, this is also dependent on the airport's capabilities in accommodating aircraft operators. As a result, airports that offer better services and facilities are more likely to attract itinerant operators in the region.

With several competing airports in the region, Powell Municipal Airport's primary service area is defined by its convenience to its users and its ability to compete for based aircraft. From a convenience perspective, the 30-minute drive time is primarily located within Park County. In terms of competition from other airports, the only other airport in Park County is Yellowstone Regional Airport, which is included as a Primary Commercial Service – Nonhub airport in the NPIAS and offers a single 8,268-foot runway and an array of services and amenities for both GA and commercial users. Yellowstone Regional Airport is a notable competitor of POY and will likely limit demand potential and result in leakage; however, other public-use airports located in proximity to POY provide shorter runways and fewer services. As such, with convenience being the primary driver for demand, the primary service area for Powell Municipal Airport is established as Park County, from which the airport currently draws the majority of its based aircraft owners. Neighboring counties can be expected to function as secondary service areas from which POY could also attract some users.



Based & FAA Registered Aircraft Locations

Distance From POY	POY Based Aircraft	FAA Registered Aircraft
0 - 10nm	9	19
10 - 20nm	4	34
20 - 30nm	7	109
Total	20*	162

* 13 Based aircraft registered to addresses beyond 30nm from POY

Source: ESRI Basemap Imagery (2019), FAA Registered Aircraft Database, BasedAircraft.com

Exhibit 2B
AIRPORT SERVICE AREA

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth; however, the judgment of the forecast analyst, based on professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast. The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include trend line/time series projections, correlation/regression analysis, and market share analysis. The forecast analyst may elect not to use certain techniques, depending on the reasonableness of the forecasts produced using other techniques.

Trend line/time series projections are probably the simplest and most familiar of the forecasting techniques. By fitting growth curves to historical data and extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection serves as a reliable benchmark for comparing other projections.

Correlation analysis provides a measure of direct relationship between two separate sets of historical data. If there is a reasonable correlation between the data sets, further evaluation using regression analysis may be employed.

Regression analysis measures statistical relationships between dependent and independent variables, yielding a correlation coefficient. The correlation coefficient (Pearson's "r") measures the association between the changes in the dependent variable and the independent variable(s). If the r^2 value (coefficient determination) is greater than 0.95, it indicates good predictive reliability. A value less than 0.95 may be used, but with the understanding that the predictive reliability is lower.

Market share analysis involves a historical review of the airport activity as a percentage, or share, of a larger regional, state, or national aviation market. A historical market share trend is determined, providing an expected market share for the future. These shares are then multiplied by the forecasts of the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections but can provide a useful check on the validity of other forecasting techniques.

Forecasts will age, and the further a forecast is from the base year, the less reliable it may become, particularly due to changing local and national conditions. Nevertheless, the FAA requires that a 20-year forecast be developed for long-range airport planning. Facility and financial planning usually require at least a 10-year view because it often takes more than five years to complete a major facility development program; however, it is important to use forecasts that do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

A wide range of factors is known to influence the aviation industry and can have significant impacts on the extent and nature of aviation activity in both the local and national markets. Historically, the nature and trend of the national economy has had a direct impact on the level of aviation activity. Recessionary periods have been closely followed by declines in aviation activity. Nevertheless, trends emerge over time and provide the basis for airport planning.

Future facility requirements, such as hangar, apron, and terminal needs, are derived from projections of various aviation demand indicators. Using a broad spectrum of local, regional, and national socioeconomic and aviation information, and analyzing the most current aviation trends, forecasts are presented for the following aviation demand indicators:

- Based aircraft
- Based aircraft fleet mix
- General aviation operations
- Air taxi and military operations
- Operational peaks

EXISTING FORECASTS

Consideration is given to any forecasts of aviation demand for the airport that have been completed in the recent past. For Powell Municipal Airport, the previous forecasts reviewed are those in the FAA *Terminal Area Forecast* (TAF) and the 2016 *Wyoming State Aviation System Plan* (WYSASP), which used a base year of 2015.

FAA TERMINAL AREA FORECAST

The FAA publishes the TAF for each airport included in the NPIAS on an annual basis. The TAF is a generalized forecast of airport activity that is 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 January 2024 and is based on the federal fiscal year (October–September).

As presented in **Table 2C**, the TAF projects general aviation activity at the airport to remain static over the next 20 years, which is the common practice by the FAA for airports not served by an airport traffic control tower (ATCT). Given that there is currently no commercial service activity at Powell Municipal Airport, the TAF does not reflect any existing and/or forecast air carrier operations; however, the TAF does reflect 300 air taxi operations over the forecast period. Operations are projected to be dominated by local and itinerant GA operations, which are estimated to account for 94 percent of the total operations over the planning period. Based aircraft are also projected to remain flat at 25 aircraft over the next 20 years, which is also the common forecasting practice by the FAA in conducting its TAF for non-towered general aviation airports. As previously noted, although the TAF projections are static and present no real forecast growth, the FAA will require a comparison of the new forecasts developed for this master plan to the TAF.

TABLE 2C | 2023 FAA Terminal Area Forecast – Powell Municipal Airport

	2023	2028	2033	2043	CAGR 2023-2043
ANNUAL OPERATIONS					
Itinerant					
Air Carrier	0	0	0	0	0.0%
Air Taxi	300	300	300	300	0.0%
General Aviation	900	900	900	900	0.0%
Military	4	4	4	4	0.0%
Total Itinerant Operations:	**1,204**	**1,204**	**1,204**	**1,204**	**0.0%**
Local					
General Aviation	3,600	3,600	3,600	3,600	0.0%
Military	0	0	0	0	0.0%
Total Local Operations:	**3,600**	**3,600**	**3,600**	**3,600**	**0.0%**
Total Annual Operations:	**4,804**	**4,804**	**4,804**	**4,804**	**0.0%**
BASED AIRCRAFT					
Based Aircraft	25	25	25	25	0.0%
Total Based Aircraft:	**25**	**25**	**25**	**25**	**0.0%**

Source: FAA TAF, February 2023

PREVIOUS FORECASTS

Another forecast of aviation activity at Powell Municipal Airport was previously prepared within the 2016 WYSASP, as shown in **Table 2D**. The WYSASP, which used a base year of 2015, forecasted total operations to grow from 3,385 in 2015 to 3,806 by 2035, and based aircraft to increase slightly from 16 to 18 over the 20-year plan period. In terms of based aircraft, the airport has exceeded these projections, with 33 validated based aircraft at the time of this writing (January 2024). Based on recent activity trends at Powell Municipal Airport and in the region, along with the time that has passed since the preparation of these previous forecasts, it is necessary to develop new forecasts utilizing the most recent information available.

TABLE 2D | Previous Forecasts – Powell Municipal Airport

Year	Itinerant Operations	Local Operations	Total Operations	Based Aircraft
2016 *Wyoming State Aviation System Plan* Update (2015 Base Year)				
2015	1,400	1,985	3,385	16
2035	NA	NA	3,805	18

Source: 2016 WYSASP

GENERAL AVIATION FORECASTS

The following forecast analysis examines each of the aviation demand categories expected at Powell Municipal Airport over the next 20 years. Each segment will be examined individually, and then collectively, to provide an understanding of the overall aviation activity at the airport through 2043. Forecasts for airport activities include the following:

- Service area registered aircraft
- Based aircraft
- Based aircraft fleet mix
- General aviation operations – local and itinerant
- Air taxi operations
- Peaking conditions
- Critical aircraft

The remainder of this chapter will examine historical trends with regard to these areas of general aviation and will project future demand for these segments of general aviation activity at the airport. These forecasts, once approved by the FAA, will become the basis for planning future airside and landside facilities.

REGISTERED AIRCRAFT FORECASTS

The most basic indicator of general aviation demand at an airport is the total number of aircraft based at the facility; however, before a projection of based aircraft can be developed, it is important to first ascertain the number (or pool) of aircraft in the market area from which POY based aircraft will be generated. The methodology for identifying the market pool is to offer an examination and forecast of registered aircraft in the airport's service area. As previously detailed, the primary service area for Powell Municipal Airport is Park County.

Table 2E presents the historical registered aircraft for Park County for 2003 through 2023. These figures are derived from the FAA aircraft registration database, which categorizes aircraft registrations by county based on the zip code of the aircraft owner. Although this information generally provides a correlation to based aircraft, it is not uncommon for some aircraft to be registered in the county but be based at an airport outside the county, or vice versa.

TABLE 2E | Historical Registered Aircraft – Park County

Year	Single-Engine Piston	Multi-Engine Piston	Turboprop	Jet	Helicopter	Other[1]	Total
2003	70	3	3	0	0	8	84
2004	72	2	2	0	0	9	85
2005	71	4	3	0	0	13	91
2006	65	4	1	0	0	13	83
2007	72	5	1	1	0	13	92
2008	79	5	2	1	0	13	100
2009	82	5	2	1	0	15	105
2010	93	6	3	2	2	15	121
2011	94	4	3	2	2	16	121
2012	89	6	5	2	2	12	116
2013	88	6	4	1	2	11	112
2014	85	2	4	1	2	11	105
2015	83	3	3	1	2	9	101
2016	85	4	2	1	2	10	104
2017	85	4	4	1	2	11	107
2018	85	4	6	1	2	10	108
2019	88	3	4	2	1	9	107
2020	88	2	4	2	2	10	108
2021	92	1	5	2	1	11	112
2022	93	1	4	2	1	9	110
2023	91	2	3	2	1	8	107

[1]The "other" aircraft category includes aircraft such as UAS, gliders, electric aircraft, balloons, and dirigibles.

Source: FAA Aircraft Registration Database

The registered aircraft in the service area show a somewhat stagnant trend over the last several years, with the historical high of 121 registered aircraft recorded in 2010 and 2011. As previously stated, the FAA required aircraft owners to re-register their aircraft during this timeframe, which likely accounts for the decrease that followed in subsequent years. Since then, registered aircraft in Park County have been generally steady over the last 10 years. The most recent count for 2023 shows 107 reported registrations in the county.

Although there are no recently prepared forecasts for Park County regarding registered aircraft, projections have been prepared for this study using market share and ratio projection methods. Several regression forecasts were also considered, including single- and multi-variable regressions examining the correlation of registered aircraft with the service area population, employment, income, and gross regional product, as well as with U.S. active general aviation aircraft. None of the regressions produced a strong correlation (r^2 value over 0.9); therefore, the regression forecasts were not considered further.

Table 2F presents several projections of registered aircraft for the service area, with a goal of presenting a planning envelope that shows a range of projections based on historical trends. The first set of forecasts is based on market share, which considers the relationship between registered aircraft located in Park County and active aircraft within the United States. The next set of projections is based on a ratio of the number of aircraft per 1,000 county residents.

TABLE 2F | Registered Aircraft Projections – Park County

Year	Service Area Registrations	U.S. Active Aircraft	Market Share of U.S. Aircraft	Service Area Population	Aircraft per 1,000 Residents
2014	105	204,408	0.0514%	29,133	3.60
2015	101	210,031	0.0481%	29,140	3.47
2016	104	211,794	0.0491%	29,462	3.53
2017	107	211,757	0.0505%	29,505	3.63
2018	108	211,749	0.0510%	29,575	3.65
2019	107	210,981	0.0507%	29,492	3.63
2020	108	204,140	0.0529%	29,664	3.64
2021	112	209,194	0.0535%	30,142	3.72
2022	110	209,140	0.0526%	30,518	3.60
2023	107	209,095	0.0512%	30,711	3.48
Constant Market Share of U.S. Active Aircraft – Low Range (CAGR 0.17%)					
2028	107	209,510	0.0512%	31,643	3.39
2033	108	210,455	0.0512%	32,331	3.33
2043	111	216,395	0.0512%	33,913	3.27
Increasing Market Share of U.S. Active Aircraft – Mid Range (CAGR 0.40%)					
2028	111	209,510	0.0532%	31,643	3.52
2033	113	210,455	0.0538%	32,331	3.50
2043	116	216,395	0.0535%	33,913	3.42
Increasing Market Share of U.S. Active Aircraft – High Range (CAGR 0.97%)					
2028	112	209,510	0.0534%	31,643	3.53
2033	117	210,455	0.0556%	32,331	3.62
2043	130	216,395	0.0600%	33,913	3.83
Constant Ratio Projection per 1,000 County Residents – Low Range (CAGR 0.50%)					
2028	110	209,510	0.0526%	31,643	3.48
2033	113	210,455	0.0535%	32,331	3.48
2043	118	216,395	0.0546%	33,913	3.48
Increasing Ratio Projection per 1,000 County Residents – Mid Range (CAGR 0.65%)					
2028	111	209,510	0.0530%	31,643	3.51
2033	114	210,455	0.0544%	32,331	3.54
2043	122	216,395	0.0563%	33,913	3.60
Increasing Ratio Projection per 1,000 County Residents – High Range (CAGR 0.82%) – SELECTED FORECAST					
2028	112	209,510	0.0535%	31,643	3.54
2033	116	210,455	0.0553%	32,331	3.60
2043	126	216,395	0.0582%	33,913	3.72

Sources: FAA Aircraft Registration Database; FAA Aerospace Forecast – FY 2023-2043; Woods & Poole, 2023; Coffman Associates analysis

Market Share Projections

- *Constant Market Share* | This forecast maintains the 2023 market share of county residents (0.0512 percent) through the planning period. The result is essentially no growth in registrations in the short and intermediate terms, followed by the addition of four aircraft by the long term. This results in 111 registered aircraft projected for 2043 and a compound annual growth rate (CAGR) of 0.17 percent.

- *Increasing Market Share* | Two increasing market share forecasts were also considered. The first evaluated a mid-range market share forecast based on a return to the county's record high market share, which occurred in 2021 with 0.0535 percent. This produced a CAGR of 0.40 percent, or 116 registered aircraft in the county by 2043. A high-range scenario was also considered, which increased the market share to 0.0600 percent, resulting in 130 registered aircraft in Park County by the end of the planning period at a CAGR of 0.97 percent.

Ratio Projections

- *Constant Ratio* | In 2023, there were 3.48 registered aircraft per 1,000 county residents. Carrying this ratio forward through the plan years results in slow growth in the number of registrations in the county over the next 20 years, with 118 aircraft projected by 2043.

- *Increasing Ratio* | Mid- and high-range increases were also projected. The mid-range projection results in 122 registered aircraft by 2043, which equates to a CAGR of 0.65 percent. The high-range projection, which is based on a return to the historical high ratio of 3.72, results in 126 aircraft by 2043 at a CAGR of 0.82 percent.

Selected Forecast

Each of the registered aircraft forecasts offers a projection of what aircraft registrations in the service area could look like over the next 20 years, with the constant market share providing the low-end projection and the high-range increasing market share forecast making up the top end of the planning envelope, as shown on **Exhibit 2C**. Even though county registrations have been generally steady, the service area population is expected to grow, as is the number of aircraft in the national fleet; therefore, it is not unreasonable to expect growth in aircraft registrations in Park County over the next 20 years. Within the range of forecasts described above, the high-range ratio projection is considered the most reasonable registered aircraft forecast due to projected increases in population and national aircraft registrations. At a CAGR of 0.82 percent, this forecast yields moderate growth in aircraft registrations in the county, with 126 registered aircraft projected for the service area by 2043.

The registered aircraft projection is one data point to be used in the development of a based aircraft forecast. The following section will present several potential based aircraft forecasts, as well as the selected based aircraft forecast, to be utilized in this study.

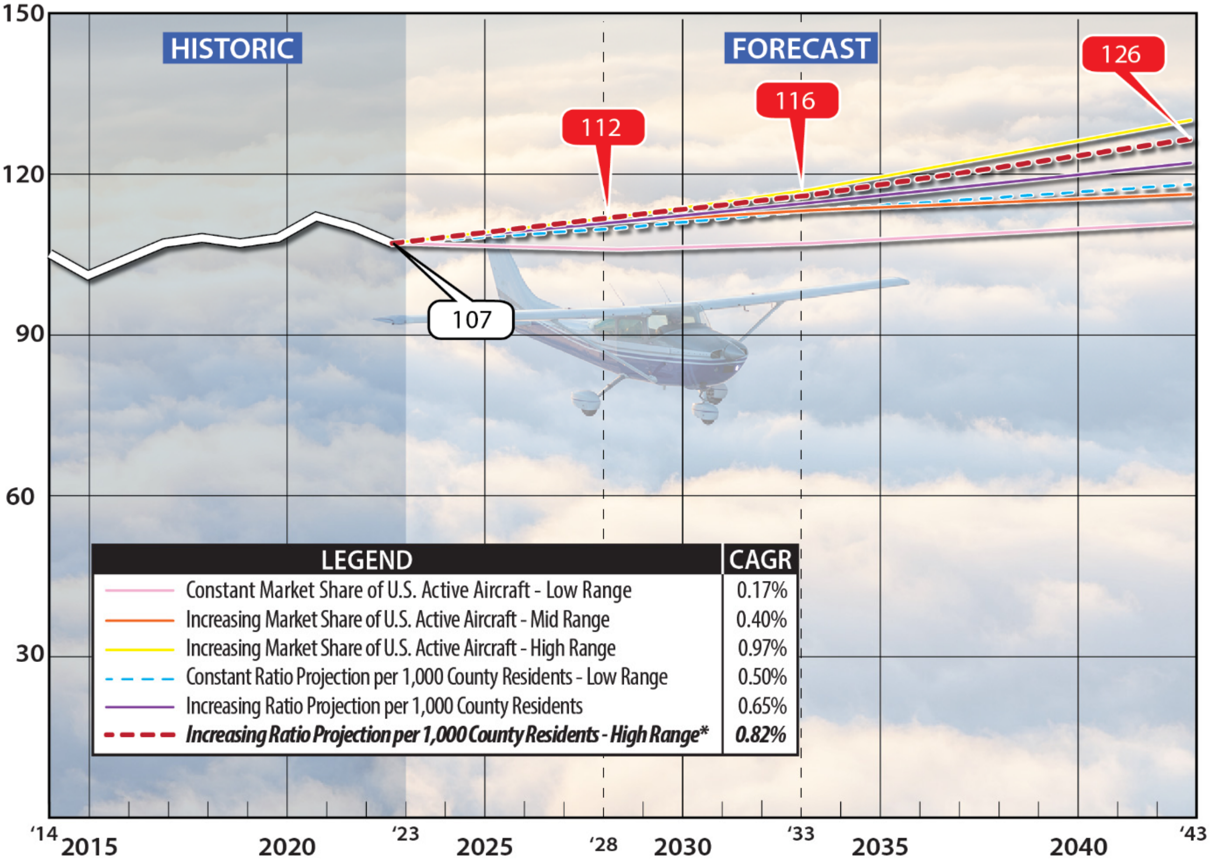


Exhibit 2C – Registered Aircraft Forecasts

BASED AIRCRAFT FORECAST

Determining the number of based aircraft at an airport can be a challenging task. Aircraft storage can be somewhat transient in nature, meaning aircraft owners can and do move their aircraft. Some aircraft owners may store their aircraft at an airport for only part of the year. For many years, the FAA did not require airports to report their based aircraft counts, nor did they validate based aircraft at airports; however, this has changed in recent years, and now the FAA mandates that airports report their based aircraft levels. These counts are recorded in the National Based Aircraft Inventory program and maintained and validated by the FAA to ensure accuracy.

According to the FAA's database, Powell Municipal Airport has 27 based aircraft, a count which was most recently validated in December 2023. This differs slightly from the FAA TAF count of 25 based aircraft, as well as airport records provided that indicate 33 aircraft are based at POY. These records detail 27 single- and multi-engine aircraft, along with six gliders, which likely accounts for the discrepancy between the TAF count and validated count within the FAA database. For planning purposes, a base year total of 33 based aircraft will be used.[1]

[1] Since the publication of this chapter and subsequent approval by the FAA of the selected forecasts, one additional aircraft is included within the airport's records of based aircraft. This aircraft is categorized as a fixed-wing, single-engine UAS.

Like the registered aircraft forecasts, several projections have been made for based aircraft at Powell Municipal Airport, including market share and ratio projections, as well as forecasts that consider the growth rate detailed in the FAA's TAF. The market share is based on the airport's percentage of based aircraft as compared to registered aircraft in the service area, while the ratio projection is based on the number of based aircraft per 1,000 county residents. The growth rate projection considers the FAA's TAF projection for the State of Wyoming. The results of these analyses are detailed in **Table 2G** and depicted graphically on **Exhibit 2D**.

TABLE 2G | Based Aircraft Forecasts for Powell Municipal Airport

Year	POY Based Aircraft	Service Area Registrations	Market Share	Service Area Population	Aircraft Per 1,000 Residents
2023	33	107	30.8%	30,711	1.07
Constant Market Share – Low Range (CAGR 0.82%)					
2028	35	112	30.8%	31,643	1.09
2033	36	116	30.8%	32,331	1.11
2043	39	126	30.8%	33,913	1.15
Increasing Market Share – Mid Range (CAGR 1.16%)					
2028	35	112	31.4%	31,643	1.11
2033	37	116	31.9%	32,331	1.15
2043	42	126	33.0%	33,913	1.23
Increasing Market Share – High Range (CAGR 1.88%)					
2028	37	112	32.6%	31,643	1.16
2033	40	116	34.4%	32,331	1.24
2043	48	126	38.0%	33,913	1.41
Constant Ratio per 1,000 Residents (CAGR 0.50%)					
2028	34	112	30.3%	31,643	1.07
2033	35	116	29.8%	32,331	1.07
2043	36	126	28.9%	33,913	1.07
Increasing Ratio per 1,000 Residents – Mid Range (CAGR 1.26%) – SELECTED FORECAST					
2028	35	112	31.6%	31,643	1.12
2033	38	116	32.3%	32,331	1.16
2043	42	126	33.6%	33,913	1.25
Increasing Ratio per 1,000 Residents – High Range (CAGR 2.19%)					
2028	37	112	33.3%	31,643	1.18
2033	42	116	35.8%	32,331	1.29
2043	51	126	40.4%	33,913	1.50
FAA TAF Statewide Growth Rate (CAGR 0.39%)					
2028	34	112	30.0%	31,643	1.06
2033	34	116	29.4%	32,331	1.06
2043	36	126	28.2%	33,913	1.05

Sources: Based aircraft records; FAA TAF, 2024; Woods & Poole, CEDDS, 2023; Coffman Associates analysis

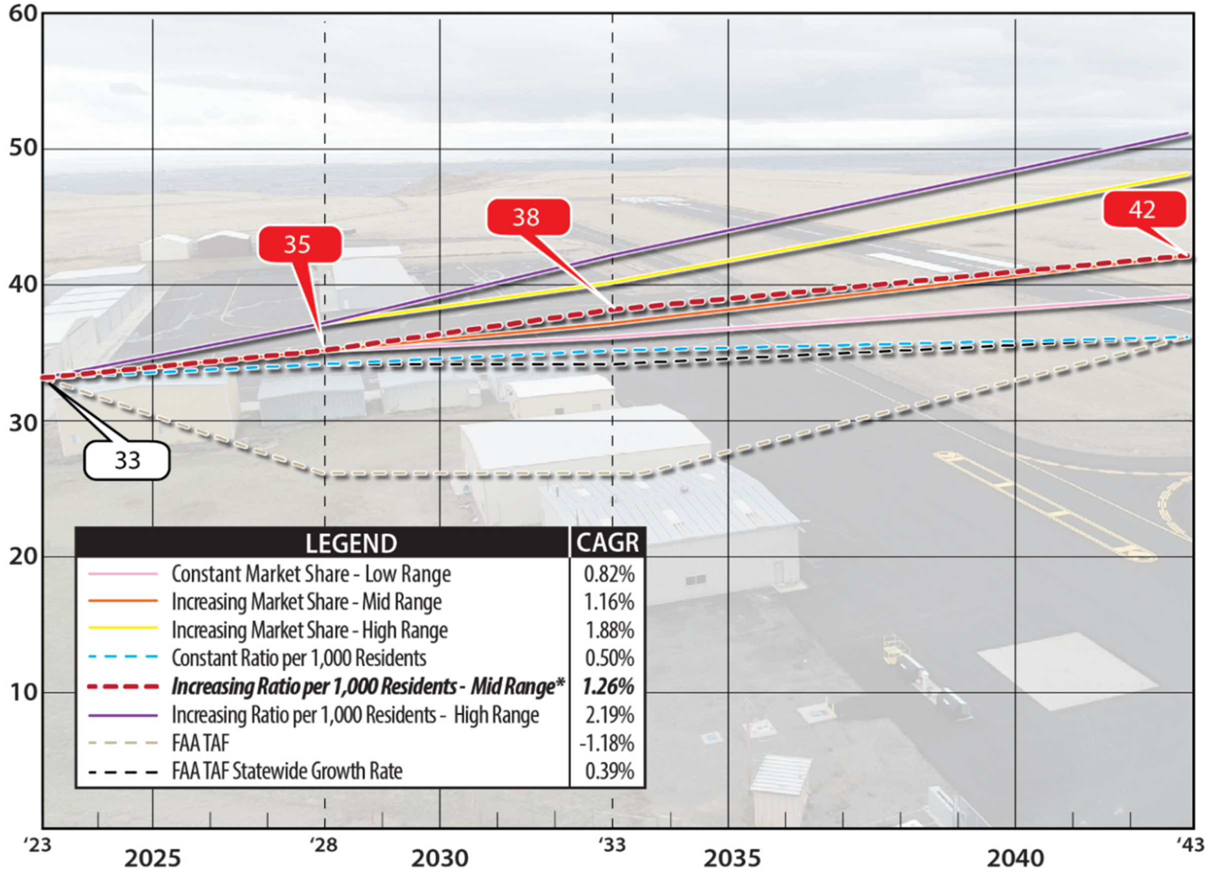


Exhibit 2D – Based Aircraft Forecasts

Market Share Projections

- *Constant Market Share* | In 2023, the airport had 33 based aircraft, which equates to 30.8 percent of the market share of registered aircraft in Park County. Carrying this percentage throughout the plan years results in a small increase in based aircraft, reflective of a 0.82 percent CAGR. This projection yields 39 based aircraft by 2043.

- *Increasing Market Share* | Two increasing market share forecasts were also evaluated. The mid-range scenario considered a 33.0 percent market share by 2043 and resulted in an increase in based aircraft to 42, or a 1.16 percent CAGR, by the end of the planning period. The high-range market share forecast evaluated a stronger growth scenario that considered Powell Municipal Airport holding 38.0 percent of the market share by the end of the planning period. This resulted in 48 based aircraft by 2043 at a CAGR of 1.88 percent.

Ratio Projections

- *Constant Ratio* | In 2023, the ratio of based aircraft per 1,000 county residents stood at 1.07. Maintaining this at a constant through 2043 resulted in very slow growth in based aircraft, with just three additional based aircraft by the end of the planning period.

- *Increasing Ratio* | Mid- and high-range growth scenarios were also evaluated. The mid-range scenario is based on a ratio of 1.25 based aircraft per 1,000 residents by 2043. Applying this figure to the end of the planning period results in 42 based aircraft at the airport by 2043 at a CAGR of 1.26 percent. The high-range scenario considers more aggressive growth, with 1.50 based aircraft per 1,000 residents by the end of the planning period. Applying this ratio produces 51 based aircraft by 2043.

As a point of comparison, the FAA TAF was also considered. The TAF for Powell Municipal Airport shows no growth in based aircraft, with the count flatlined at 25 throughout the planning period; this results in a negative CAGR when considering the actual count of based aircraft in 2023. On a broader scale, the TAF for the State of Wyoming was also examined and the statewide growth rate for based aircraft of 0.39 percent was applied. This resulted in 36 based aircraft at Powell Municipal Airport by the end of the planning period.

Selected Forecast

The forecasts produce a planning envelope ranging from 25 (FAA TAF for POY) to 51 based aircraft on the airport by 2043. Historically, there has been clear demand for aircraft storage space at the airport, and all hangars are currently occupied, with three individuals on a waiting list. Combined with favorable trends in aircraft ownership both locally and nationally, it is reasonable to assume a somewhat robust growth rate for based aircraft at POY; therefore, the mid-range increasing ratio forecast has been selected as the preferred projection. With a CAGR of 1.26 percent, this forecast results in an increase of nine based aircraft by the end of the planning period, for a total of 42 aircraft based at POY by 2043.

Based Aircraft Fleet Mix Forecast

It is important to have an understanding of the current and projected based aircraft fleet mix at an airport to ensure the planning of proper facilities in the future. The forecast mix of based aircraft was determined by comparing existing and forecast U.S. general aviation fleet trends to the fleet mix at POY. The national trend in general aviation is toward a greater percentage of larger, more sophisticated aircraft as part of the national fleet. Powell Municipal Airport is capable of accommodating all types of general aviation aircraft, from small piston-powered aircraft up to small- and mid-size business jet aircraft.

As indicated in **Table 2H**, single-engine piston aircraft presently make up the majority of the fleet mix at the airport, comprising 79 percent of the aircraft based at the airport. There is also one multi-engine piston currently based at POY, as well as six aircraft categorized as "other," all of which are gliders. The other aircraft category can also include ultralight, home-built, and UAS (unmanned aircraft system) aircraft.

The FAA predicts piston-powered aircraft will decline in numbers nationwide, with aircraft ownership trends shifting to more sophisticated turboprops and jets; however, it is anticipated that piston aircraft will continue to comprise the majority of the fleet mix at Powell Municipal Airport, with slow growth in turbine aircraft. The table details the based aircraft fleet mix projections for the airport over the next 20 years. Single-engine pistons are projected to increase from the 26 currently based at the airport to 32 by 2043. The multi-engine piston is expected to phase out by the end of the planning period, in line with national trends, while a turboprop, jet, and helicopter are each anticipated to be added to the fleet mix by 2043. The "other" category is also expected to increase by one aircraft.

TABLE 2H | Total Based Aircraft Fleet Mix

	EXISTING		FORECAST					
Aircraft Type	**2023**	**%**	**2028**	**%**	**2033**	**%**	**2043**	**%**
Single-Engine Piston	26	79%	28	80%	29	76%	32	76%
Multi-Engine Piston	1	3%	1	3%	1	3%	0	0%
Turboprop	0	0%	0	0%	1	3%	1	2%
Jet	0	0%	0	0%	0	0%	1	2%
Helicopter	0	0%	0	0%	0	0%	1	2%
Other	6	18%	6	17%	7	18%	7	17%
Totals	**33**	**100%**	**35**	**100%**	**38**	**100%**	**42**	**100%**

Sources: Airport records; Coffman Associates analysis

OPERATIONS FORECASTS

Operations at Powell Municipal Airport are classified as either general aviation, air taxi, or military. General aviation operations include a wide range of activity, from recreational use and flight training to business and corporate uses. Air taxi operations are those conducted by aircraft operating under Title 14 Code of Federal Regulations (CFR) Part 135, otherwise known as for-hire or on-demand activity. Military operations include those operations conducted by various branches of the U.S. military.

Aircraft operations are further classified as local and itinerant. A local operation is a takeoff or landing performed by an aircraft that operates within sight of an airport, or which executes simulated approaches or touch-and-go operations at an airport. Generally, local operations are characterized by training activity. Itinerant operations are those performed by aircraft with a specific origin or destination away from an airport. Typically, itinerant operations increase with business and commercial use because business aircraft are primarily used to transport passengers from one location to another.

Because Powell Municipal Airport is not equipped with an ATCT, precise operational (takeoff and landing) counts are not available. Sources for estimated operational activity at the airport include the FAA Form 5010, *Airport Master Record*, the FAA TAF, and the 2016 WYSASP. The 2024 FAA TAF indicates a total of 4,804 operations in 2023, as does Form 5010 which shows 4,804 operations for the 12-month period ending June 30, 2022. In both estimates, local operations comprise the greater share, at 75 percent of total operations. Air taxi operations are estimated at 300 annually in both the TAF and Form 5010. On a more local level, the WYSASP provided an estimate of 3,385 total operations with a base year of 2015, with the majority (1,985 operations) assumed to be local in nature. It should be noted that these numbers match the FAA's 2023 TAF, and the WYSASP was likely used as the source for the TAF.

Additional calculations to estimate annual operations were also conducted for comparison purposes. The first, Equation 15 in the FAA's *Model for Estimating General Aviation Operations at Non-Towered Airports Using Towered and Non-Towered Airport Data*, factors in regional population and based aircraft data to develop a baseline operational count. When these data were input, the result was 11,060 annual operations.

The second calculation multiplies validated based aircraft by an estimated number of operations per based aircraft (OPBA), as outlined in Airport Cooperative Research Program (ACRP) Report 129, *Evaluating Methods for Counting Aircraft Operations at Non-Towered Airports*. In FAA Order 5090.5, the FAA recommends using a multiplier of 350 OPBA for local GA airports. This resulted in an estimated 11,550 total annual operations.

In summary, the following are estimates of annual operations, as derived from various sources:

- FAA Form 5010 – 4,804 annual operations
- 2024 FAA TAF – 4,804 annual operations
- 2016 WYSASP – 3,385 annual operations
- FAA Equation 15 – 11,060 annual operations
- OPBA with 350 multiplier – 11,550 annual operations

Based on activity levels in the region and at similar airports, the FAA TAF estimation of 4,804 annual operations is considered to be most likely in line with, or a good proximation of, actual operations. As such, the following figures will be carried forward for use as the base year count:

- 900 annual itinerant GA operations (18.7% of total)
- 3,600 annual local GA operations (74.9% of total[2])

General Aviation Operations Forecast

Market Share Projections

Table 2J presents three market share forecasts for local and itinerant GA operations, based on the airport's current market share of total U.S. itinerant GA operations. In 2023, the airport held a 0.006 percent market share of national itinerant operations and 0.024 percent of the market share for local operations. The first forecast carries this figure forward as a constant through the planning period, resulting in 1,000 itinerant operations and 4,040 local operations by 2043, for respective CAGRs of 0.53 percent and 0.58 percent.

TABLE 2J | Operations Forecasts – Market Share

Year	POY GA Itinerant	U.S. GA Itinerant	Market%	POY GA Local	U.S. GA Local	Market%
2023	900	15,077,947	0.006%	3,600	14,801,816	0.024%
Constant Market Share – Low Range						
2028	960	16,067,702	0.006%	3,830	15,767,731	0.024%
2033	970	16,274,397	0.006%	3,900	16,043,229	0.024%
2043	1,000	16,704,132	0.006%	4,040	16,622,293	0.024%
CAGR	**0.53%**	–	–	**0.58%**	–	–
Increasing Market Share – Mid Range						
2028	1,040	16,067,702	0.006%	4,140	15,767,731	0.026%
2033	1,140	16,274,397	0.007%	4,520	16,043,229	0.028%
2043	1,340	16,704,132	0.008%	5,320	16,622,293	0.032%
CAGR	**2.01%**	–	–	**1.97%**	–	–
Increasing Market Share – High Range						
2028	1,200	16,067,702	0.007%	4,450	15,767,731	0.028%
2033	1,460	16,274,397	0.009%	5,160	16,043,229	0.032%
2043	2,000	16,704,132	0.012%	6,650	16,622,293	0.040%
CAGR	**4.07%**	–	–	**3.12%**	–	–

Sources: FAA Aerospace Forecast – FY 2023-2043; Coffman Associates analysis

[2] The FAA TAF also estimates 300 air taxi operations annually, comprising 6.2 percent of the total. Additional information on current and projected air taxi operations will be detailed in a later section.

As growth in both itinerant and local operations is expected to occur nationally, two increasing market share forecasts were also developed. The first considers a slower growth scenario, with an increase to 1,340 itinerant operations and 5,320 local operations by 2043. This produced respective CAGRs of 2.01 percent and 1.97 percent. A faster growth scenario evaluated market shares at 0.012 percent for itinerant operations and 0.040 percent for local operations. This resulted in 2,000 itinerant operations by 2043 at a CAGR of 4.07 percent and 6,650 local operations at a CAGR of 3.12 percent.

Other Projections

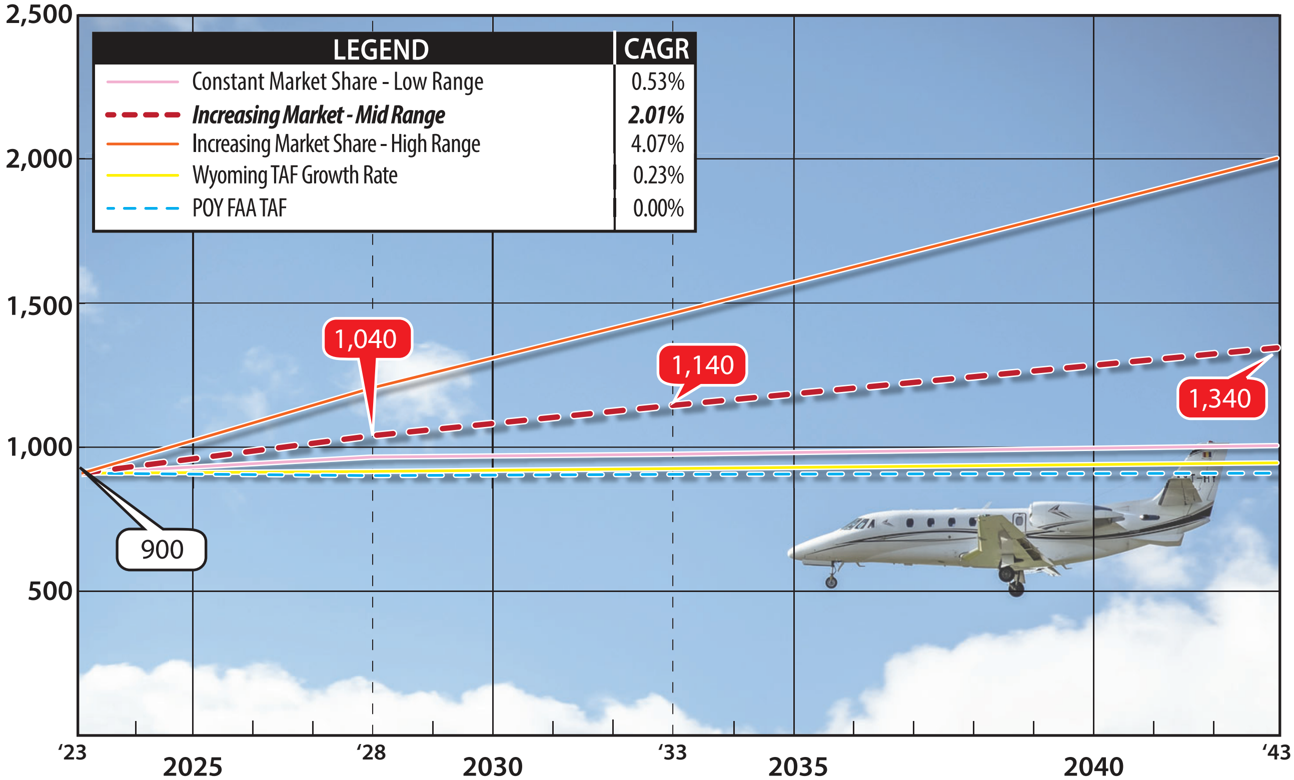
Lastly, projections presented in the FAA TAF and the Wyoming TAF growth rate were considered and the TAF projections were included primarily for comparison purposes. The TAF estimates both itinerant and local operations at Powell Municipal Airport to remain flatlined at 900 (itinerant) and 3,600 (local) operations over the course of the planning period. The statewide TAF growth rate for itinerant operations is estimated at 0.23 percent, which results in 940 itinerant operations at Powell Municipal Airport by 2043 when applied to the base year count. The Wyoming TAF growth rate for local operations is estimated at 0.86 percent, which results in 4,270 local operations by 2043 when applied to the base year count.

Exhibit 2E presents graphs of the itinerant and local GA operation projections, while **Table 2K** summarizes each forecast. In terms of itinerant operations, the forecasts present a planning envelope ranging from 900 (FAA TAF) to 2,000 itinerant operations (high-range market share forecast). Local operations show a very similar scenario, ranging from 3,600 (FAA TAF) to 6,650 (high-range market share forecast) local operations. With growth in itinerant and local operations anticipated both nationally and regionally, it is reasonable to assume a moderate increase in this type of traffic over the next 20 years. As such, the mid-range increasing market share forecast is the selected projection for each operational category. For itinerant operations, this is reflective of a 2.01 percent CAGR, or 1,340 operations by the end of the planning period. For local operations, the result is 5,320 operations at a CAGR of 1.97 percent. Overall, this represents a conservative, yet realistic, growth scenario.

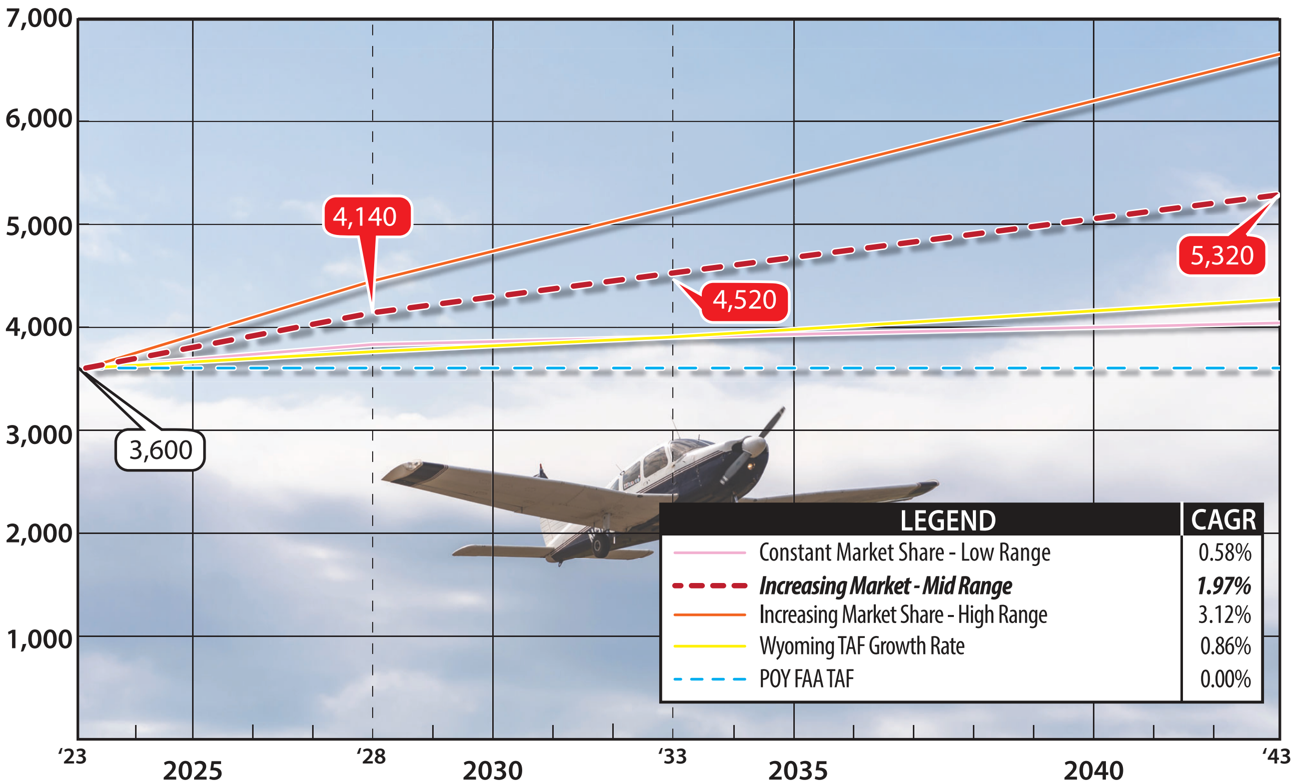
TABLE 2K | POY Operations Forecast Summary

Projections	2028	2033	2043	CAGR
Itinerant GA				
Constant Market – Low Range	960	970	1,000	0.53%
Increasing Market – Mid Range – SELECTED FORECAST	**1,040**	**1,140**	**1,340**	**2.01%**
Increasing Market – High Range	1,200	1,460	2,000	4.07%
Wyoming TAF Growth Rate	910	920	940	0.22%
POY FAA TAF	900	900	900	0.00%
Local GA				
Constant Market - Low Range	3,830	3,900	4,040	0.58%
Increasing Market – Mid Range – SELECTED FORECAST	**4,140**	**4,520**	**5,320**	**1.97%**
Increasing Market – High Range	4,450	5,160	6,650	3.12%
Wyoming TAF Growth Rate	3,760	3,920	4,270	0.86%
POY FAA TAF	3,600	3,600	3,600	0.00%

ITINERANT OPERATIONS



LOCAL OPERATIONS



CAGR: Compound Annual Growth Rate * Selected forecasts shown in bold

Exhibit 2E
GENERAL AVIATION OPERATIONS FORECASTS

Air Taxi Operations Forecast

The air taxi category, which is a subset of the itinerant operations category, is comprised of operations that are conducted by aircraft operating under 14 CFR Part 135. Part 135 operations are for-hire or on-demand and include charter and commuter flights, air ambulance, or fractional ownership aircraft operations. The FAA projects a 0.8 percent CAGR increase in air taxi operations between 2023 and 2043. The primary reasons for this increase are the technological advancements of the electric vertical takeoff and landing aircraft (eVTOL) and the continued national growth in the business jet segment of the air taxi category.

TABLE 2L | Historical and Projected Air Taxi Operations

Year	Air Taxi Operations
2014	72
2015	36
2016	43
2017	123
2018	56
2019	40
2020	72
2021	65
2022	34
2023	61
Air Taxi Operations Forecast	
2028	100
2033	100
2043	100

Source: AirportIQ

Historical air taxi records at Powell Municipal Airport were not available. The FAA TAF and Form 5010 report 300 air taxi operations, respectively. AirportIQ, a company that records Part 135 operations, was consulted to determine a more accurate air taxi count. Over the last 10 years, air taxi operations at POY (as reported by AirportIQ) have fluctuated somewhat, as can be seen in **Table 2L**. In 2023, there were 61 air taxi operations as reported by AirportIQ. For this reason, and due to the generally low number of this type of operation, a flat count of 100 air taxi operations will be considered for each of the plan years.

Military Operations Forecast

Military aircraft can and do utilize civilian airports across the country, including Powell Municipal Airport; however, it is inherently difficult to project future military operations due to their national security nature and the fact that missions can change without notice. Thus, it is typical for the FAA to use a flat-line number for military operations. At POY, the FAA TAF accounts for just four military operations. As such, this planning study will not include military operations projections in the total operations count for the forecast years.

Peak Period Forecasts

Peaking characteristics play an important role in determining airport capacity and facility requirements. Because Powell Municipal Airport does not have a control tower, the generalized peaking characteristics of other non-towered general aviation airports have been used for the purposes of this study. The peaking periods used to develop the capacity analysis and facility requirements are described below.

- Peak month – the calendar month in which traffic activity is the highest
- Design day – the average day in the peak month, derived by dividing the peak month by the number of days in the month
- Design hour – the average hour within the design day
- Busy day – the busiest day of a typical week in the peak month

For the purposes of this study, the peak month for total operations was estimated at 10 percent of the annual operations. By 2043, the estimated peak month is projected to reach 676 operations. The design day is estimated by dividing the peak month by the number of days in the month (31) and the busy day is calculated at 1.25 times the design day. The design hour is then calculated at 15 percent of the design day. These projections are included in **Table 2M**.

TABLE 2M | Peak Period Forecasts – Powell Municipal Airport

	2023	2028	2033	2043
Annual	4,565	5,280	5,760	6,760
Peak Month	457	528	576	676
Design Day	15	17	19	22
Design Hour	2	3	3	3
Busy Day	18	21	23	26

Source: Coffman Associates analysis

FORECAST SUMMARY

This chapter has outlined the various activity levels that might be reasonably anticipated over the planning period. **Exhibit 2F** presents a summary of the aviation forecasts prepared in this chapter. The base year for these forecasts is 2023, with a 20-year planning horizon to 2043. The primary aviation demand indicators are based aircraft and operations. Based aircraft are forecasted to increase from 33 in 2023 to 42 by 2043 (1.26 percent CAGR). Total operations at Powell Municipal Airport are forecasted to increase from 4,565[3] in 2023 to 6,760 by 2043 (1.98 percent CAGR).

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 forecasts of aviation demand tend to fall within the planning envelope over time. The forecasts developed for this master planning effort are considered reasonable for planning purposes. The need for additional facilities will be based on these forecasts; however, if demand does not materialize as projected, implementation of facility construction can be slower. Likewise, if demand exceeds these forecasts, the airport may accelerate construction of new facilities.

FORECAST COMPARISON TO THE FAA TAF

Historically, forecasts have been submitted to the FAA for evaluation and to be compared to the TAF. The FAA preferred that forecasts differ by less than 10 percent in the five-year period and less than 15 percent in the 10-year period. Where the forecasts differ, supporting documentation was necessary to justify the difference.

TABLE 2N | Comparison of Master Plan Forecasts to the FAA TAF

	BASE YEAR	2028	2033	2043
Total Operations				
Master Plan Forecast	4,565	5,300	5,800	6,800
TAF	4,804	4,804	4,804	4,804
% Difference	5.10%	9.82%	18.79%	34.40%
Based Aircraft				
Master Plan Forecast	33	35	38	42
TAF	25	25	25	25
% Difference	27.59%	33.33%	41.27%	50.75%

Table 2N presents a summary of the selected forecasts and a comparison to the FAA TAF. The direct comparison between the master plan forecasts and the TAF is presented at the bottom of the table. The master plan forecast is within the TAF tolerance

[3] The base year operations total is derived from the FAA TAF estimate for local and itinerant general aviation operations and itinerant military operations; air taxi operations are sourced from AirportIQ.

	BASE YEAR	2028	2033	2043
ANNUAL OPERATIONS				
Itinerant				
Air Carrier	0	0	0	0
Other Air Taxi	61	100	100	100
General Aviation	900	1,040	1,140	1,340
Military	4	0	0	0
Total Itinerant Operations	***965***	***1,140***	***1,240***	***1,440***
Local				
General Aviation	3,600	4,140	4,520	5,320
Total Local Operations	***3,600***	***4,140***	***4,520***	***5,320***
TOTAL ANNUAL OPERATIONS	***4,565***	***5,300***	***5,800***	***6,800***
BASED AIRCRAFT				
Single Engine	26	28	29	32
Multi-Engine	1	1	1	0
Turboprop	0	0	1	1
Jet	0	0	0	1
Helicopter	0	0	0	1
Other	6	6	7	7
TOTAL POY BASED AIRCRAFT	***33***	***35***	***38***	***42***
PEAKING				
Total Annual Operations	4,565	5,280	5,760	6,760
Peak Month	457	528	576	676
Design Day	15	17	19	22
Design Hour	2	3	3	3
Busy Day	18	21	23	26

Total Based Aircraft Fleet Mix

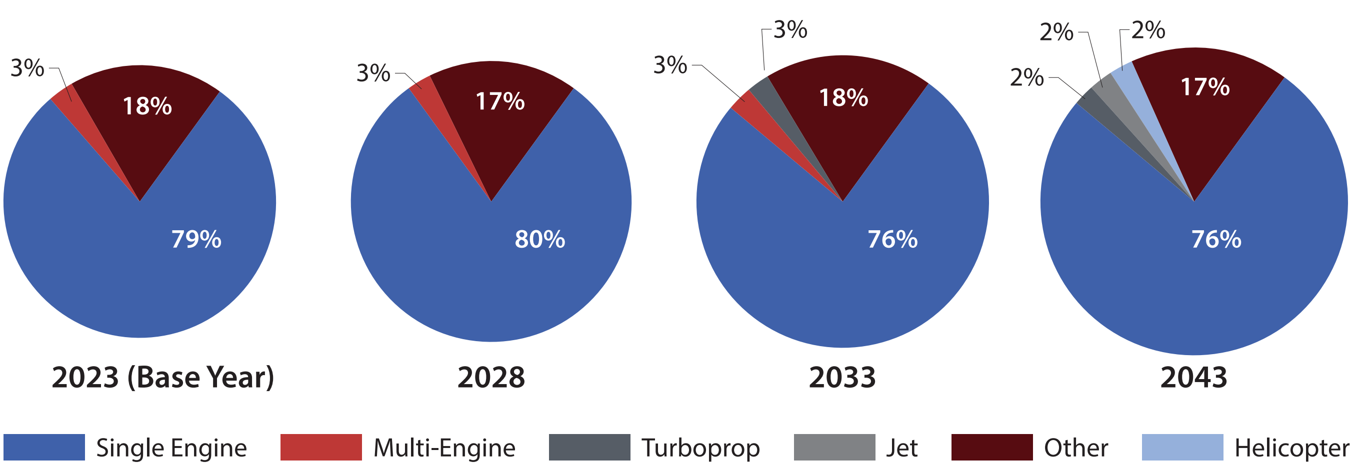


Exhibit 2F
FORECAST SUMMARY

for operations for the five-year forecast, but outside the tolerance for the 10-year period. For based aircraft, the master plan forecast is outside the tolerance for both the five- and 10-year periods. This is primarily due to the TAF count being flatlined for both total operations and based aircraft. Additionally, in terms of based aircraft, the actual count at POY exceeds that which is reported in the TAF, creating a discrepancy in the base year, and contributing to a larger difference in the near and mid-term comparison.

AIRCRAFT/AIRPORT/RUNWAY CLASSIFICATION

The FAA has established several aircraft classification systems that group aircraft types based on their performance (approach speed in landing configuration) and design characteristics (wingspan and landing gear configuration). These classification systems are used to determine the appropriate airport design standards for specific airport elements, such as runways, taxiways, taxilanes, and aprons.

AIRCRAFT CLASSIFICATION

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily on the characteristics of the aircraft that are currently using or are expected to use an airport. The critical aircraft is used to define the design parameters for an airport. The critical aircraft may be a single aircraft type or a composite aircraft representing a collection of aircraft with similar characteristics. The critical aircraft is classified by three parameters: aircraft approach category (AAC), airplane design group (ADG), and taxiway design group (TDG). FAA AC 150/5300-13B, *Airport Design*, describes the following airplane classification systems, the parameters of which are presented on **Exhibit 2G**.

Aircraft Approach Category (AAC) | The AAC is a grouping of aircraft based on a reference landing speed (V_{REF}), if specified, or if V_{REF} is not specified, 1.3 times stall speed (V_{SO}) at the maximum certificated landing weight. V_{REF}, V_{SO}, and the maximum certificated landing weight are values established for the aircraft by the certification authority of the country of registry.

The AAC generally refers to the approach speed of an aircraft in landing configuration. The higher the approach speed, the more restrictive the applicable design standards. The AAC, depicted by a letter (A through E), is the aircraft approach category and relates to aircraft approach speed (operational characteristics). The AAC generally applies to runways and runway-related facilities, such as runway width, runway safety area (RSA), runway object free area (ROFA), runway protection zone (RPZ), and separation standards.

Airplane Design Group (ADG) | The ADG is depicted by a Roman numeral (I through VI) and is a classification of aircraft that relates to aircraft wingspan or tail height (physical characteristics). When the aircraft wingspan and tail height fall in different groups, the higher group is used. The ADG influences design standards for taxiway safety area (TSA), taxiway object free area (TOFA), taxilane object free area, apron wingtip clearance, and various separation distances.

Taxiway Design Group (TDG) | The TDG is a classification of airplanes based on outer-to-outer main gear width (MGW) and cockpit to main gear (CMG) distance. The TDG relates to the undercarriage dimensions of the critical aircraft. The TDG is classified by an alphanumeric system (1A, 1B, 2A, 2B, 3, 4, 5, 6, and 7).

AIRCRAFT APPROACH CATEGORY (AAC)

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

AIRPLANE DESIGN GROUP (ADG)

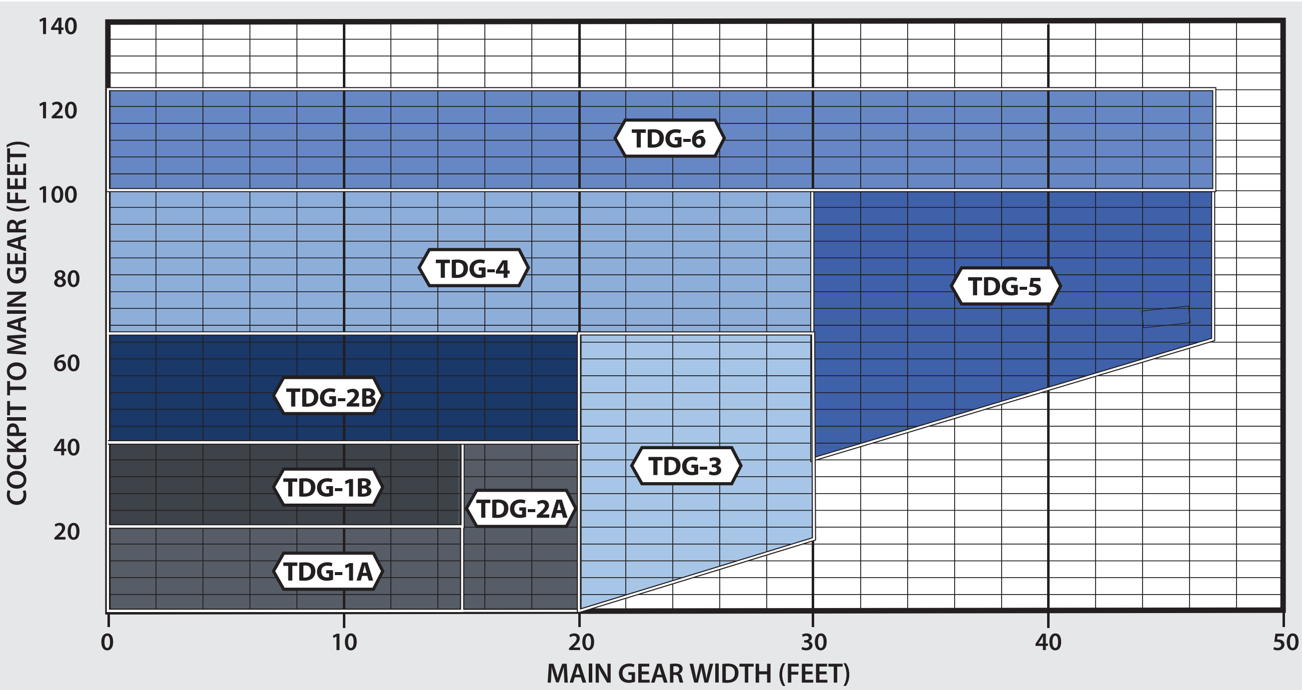
Group #	Tail Height (ft)	Wingspan (ft)
I	<20	<49
II	20-<30	49-<79
III	30-<45	79-<118
IV	45-<60	118-<171
V	60-<66	171-<214
VI	66-<80	214-<262

VISIBILITY MINIMUMS

RVR* (ft)	Flight Visibility Category (statute miles)
VIS	3-mile or greater visibility minimums
5,000	Not lower than 1-mile
4,000	Lower than 1-mile but not lower than ¾-mile
2,400	Lower than ¾-mile but not lower than ½-mile
1,600	Lower than ½-mile but not lower than ¼-mile
1,200	Lower than ¼-mile

***RVR**: Runway Visual Range

TAXIWAY DESIGN GROUP (TDG)



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

Exhibit 2G
AIRCRAFT CLASSIFICATION PARAMETERS

A-I

Aircraft	TDG
Beech Baron 55	1A
Beech Bonanza	**1A**
Cessna 150, 172	1A
Eclipse 500	1A
Piper Archer, Seneca	1A

B-I

Aircraft	TDG
Beech Baron 58	**1A**
Beech King Air 90	1A
Cessna 421	1A
Cessna Citation CJ1 (525)	1A
Cessna Citation 1(500)	2A
Embraer Phenom 100	1B

A/B-II *12,500 lbs. or less*

Aircraft	TDG
Beech Super King Air 200	**2A**
Cessna 441 Conquest	1A
Cessna Citation CJ2 (525A)	2A
Pilatus PC-12	1A

B-II *over 12,500 lbs.*

Aircraft	TDG
Beech Super King Air 350	2A
Cessna Citation CJ3(525B), V (560)	2A
Cessna Citation Bravo (550)	1A
Cessna Citation CJ4 (525C)	**1B**
Cessna Citation Latitude/Longitude	1B
Embraer Phenom 300	1B
Falcon 10, 20, 50	1B
Falcon 900, 2000	2A
Hawker 800, 800XP, 850XP, 4000	1B
Pilatus PC-24	1B

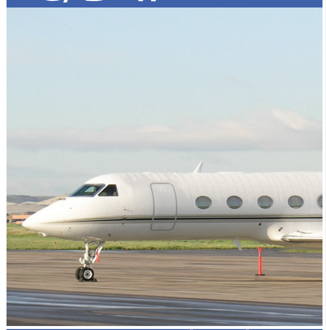
A/B-III

Aircraft	TDG
Bombardier Dash 8	3
Bombardier Global 5000, 6000, 7000, 8000	**2B**
Falcon 6X, 7X, 8X	2B

C/D-I

Aircraft	TDG
Lear 25, 31, 45, 55, **60**	**1B**
Learjet 35, 36 (D-I)	1B

C/D-II



Aircraft	TDG
Challenger 600/604/ 800/850	1B
Cessna Citation VII, X+	1B
Embraer Legacy 450/500	1B
Gulfstream IV, 350, 450 (D-II)	**2A**
Gulfstream G200/G280	1B
Lear 70, 75	1B

C/D-III *less than 150,000 lbs.*

Aircraft	TDG
Gulfstream V	2A
Gulfstream G500, 550, 600, 650 (D-III)	**2B**

C/D-III *over 150,000 lbs.*

Aircraft	TDG
Airbus A319-100, 200	3
Boeing 737 -800, 900, BBJ2 (D-III)	**3**
MD-83, 88 (D-III)	4

C/D-IV

Aircraft	TDG
Airbus A300-100, 200, 600	5
Boeing 757-200	4
Boeing 767-300, **400**	**5**
MD-11	6

D-V

Aircraft	TDG
Airbus A330-200, 300	5
Airbus A340-500, 600	6
Boeing 747-100 - 400	5
Boeing 777-300	6
Boeing 787-8, 9	**5**

TDG - Taxiway Design Group

Note: Aircraft pictured is identified in bold type.

Exhibit 2G (continued)
AIRCRAFT REFERENCE CODES

The taxiway design elements determined by the application of the TDG include taxiway width, taxiway edge safety margin, taxiway shoulder width, taxiway fillet dimensions, and, in some cases, the separation distance between parallel taxiways/taxilanes. Other taxiway elements, such as the taxiway safety area (TSA), taxiway/taxilane object free area (TOFA), taxiway/taxilane separation to parallel taxiway/taxilanes or fixed or movable objects, and taxiway/taxilane wingtip clearances, are determined solely based on the wingspan (ADG) of the critical aircraft utilizing those surfaces. It is appropriate for taxiways to be planned and built to different TDG standards, based on expected use.

The reverse side of **Exhibit 2G** summarizes the classification of the most common aircraft in operation today. Generally, recreational and business piston and turboprop aircraft will fall in AAC A and B, and ADG I and II. Business jets typically fall in AAC B and C, while the larger commercial aircraft will fall in AAC C and D.

AIRPORT AND RUNWAY CLASSIFICATIONS

Along with the aircraft classifications defined previously, airport and runway classifications are used to determine the appropriate FAA design standards to which the airfield facilities are to be designed and built.

Runway Design Code (RDC) | The RDC is a code that signifies the design standards to which the runway should be built. The RDC is based on planned development and has no operational component.

The AAC, ADG, and runway visual range (RVR) are combined to form the RDC of a runway. The RDC provides the information needed to determine certain design standards that apply. The first component, depicted by a letter, is the AAC and relates to aircraft approach speed (operational characteristics). The second component, depicted by a Roman numeral, is the ADG and relates to either the aircraft wingspan or tail height (physical characteristics), whichever is more restrictive. The third component relates to the available instrument approach visibility minimums, expressed by RVR values in feet of 1,200 (⅛-mile), 1,600 (¼-mile), 2,400 (½-mile), 4,000 (¾-mile), and 5,000 (1-mile). The RVR values approximate standard visibility minimums for instrument approaches to the runways. The third component is labeled “VIS” for runways that are designed for visual approach use only.

Approach Reference Code (APRC) | The APRC is a code that signifies the current operational capabilities of a runway and associated parallel taxiway with regard to landing operations. The APRC includes the same three components as the RDC: AAC, ADG, and RVR. The APRC describes the current operational capabilities of a runway under particular meteorological conditions where no special operating procedures are necessary, as opposed to the RDC, which is based on planned development with no operational component. The APRC for a runway is established based on the minimum runway-to-taxiway centerline separation.

Departure Reference Code (DPRC) | The DPRC is a code that signifies the current operational capabilities of a runway and associated parallel taxiway with regard to takeoff operations. The DPRC represents those aircraft that can take off from a runway while any aircraft are present on adjacent taxiways, under particular meteorological conditions with no special operating conditions. The DPRC is similar to the APRC but has two components: AAC and ADG. A runway may have more than one DPRC, depending on the parallel taxiway separation distance.

Airport Reference Code (ARC) | The ARC is an airport designation that signifies the airport's highest runway design code (RDC) minus the third (visibility) component of the RDC. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely at an airport. The current airport layout plan (ALP) for Powell Municipal Airport identifies the existing ARC as B-II.

CRITICAL AIRCRAFT

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily on the characteristics of the aircraft that are currently using, or are expected to use, an airport. The critical aircraft is used to define the design parameters for an airport. The critical aircraft may be a single aircraft or a composite aircraft representing a collection of aircraft classified by the three parameters: AAC, ADG, and TDG.

The first consideration is the safe operation of aircraft likely to use an airport. Any operation of an aircraft that exceeds the design criteria of an airport may result in a lesser safety margin; however, it is not the usual practice to base the airport design on an aircraft that uses the airport infrequently.

The critical aircraft is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that makes regular use of the airport. Regular use is 500 annual operations, excluding touch-and-go operations. Planning for future aircraft use is of importance because the design standards are used to plan separation distances between facilities. These future standards must be considered now to ensure that short-term development does not preclude the reasonable long-range potential needs of the airport.

According to FAA AC 150/5300-13B, *Airport Design*, "airport designs based only aircraft currently using the airport can severely limit the airport's ability to accommodate future operations of more demanding aircraft. Conversely, it is not practical or economical to base airport design on aircraft that will not realistically use the airport." Selection of the current and future critical aircraft must be realistic in nature and supported by current data and realistic projections.

AIRPORT CRITICAL AIRCRAFT

There are three elements for classifying the airport critical aircraft: the AAC, the ADG, and the TDG. The AAC and ADG are examined first, followed by the TDG.

The FAA's Traffic Flow Management System Counts (TFMSC) database captures an operation when a pilot files a flight plan and/or when a flight is detected by the National Airspace System, usually via radar. The database includes documentation of commercial traffic (air carrier and air taxi), general aviation, and military aircraft. Due to certain factors, such as incomplete flight plans, limited radar coverage, and VFR operations, the TFMSC does not account for all aircraft activity at an airport by a given aircraft type; however, the TFMSC does provide an accurate reflection of IFR activity. Operators of high-performance aircraft, such as turboprops and jets, tend to file flight plans at a high rate.

Exhibit 2H presents the TFMSC operational mix at the airport for turbine aircraft operations for the last 10 years. As can be seen, there has been limited reporting of activity by turboprops and business jets, and no single aircraft or family of aircraft has conducted 500 or more operations at the airport over the last 10 years. In 2023, the greatest number of operations in any single design family was 116 in B-II, which accounted for approximately 67 percent of logged turbine aircraft activity and was primarily conducted by Beechcraft King Air 200/300/350 and Citation V/Sovereign aircraft. The remaining operations recorded in the TFMSC were conducted by aircraft categorized as A-I/II and B-I, along with two operations conducted by a Challenger 600/604, which is a C-II aircraft.

When planning for future facilities at Powell Municipal Airport, it is necessary to consider the types of aircraft operating most frequently at the airport to identify the existing and ultimate critical aircraft. Using data sourced from the TFMSC, the majority of operations in 2023 fall into the B-II category, which has been the trend for the last 10 years. Previous planning at POY has also indicated that operations by B-II aircraft account for a significant portion of total operations, and the airport has been planned to this standard in the past. Therefore, the existing critical aircraft is thus identified as A/B-II, with the King Air 200/300/350 serving as the representative aircraft. Aircraft in this family are expected to continue to comprise the majority of operations at the airport over the planning period, so B-II has also been established as the ultimate critical aircraft.

Airport Critical Aircraft Summary

Previous planning determined both the existing and ultimate critical aircraft to be B-II, a trend which has continued at POY in recent years. Available data, as sourced from the TFMSC, confirms that the majority of logged operations are conducted by aircraft categorized as ARC B-II, such as the King Air 200/300/350. Operations by these types of aircraft are expected to increase as the national fleet mix evolves to include more turboprop and jet aircraft in the coming years. Based on historical data and FAA projections for increased turbine operations in the future, the current and future critical aircraft for Powell Municipal Airport is classified B-II-2A, represented by the King Air 200/300/350.

RUNWAY DESIGN CODE

The RDC relates to specific FAA design standards that should be met in relation to a runway. The RDC takes into consideration the AAC, the ADG, and the RVR. In most cases, the critical design aircraft is also the RDC for the primary runway.

As the primary runway, Runway 13-31 should be designed to accommodate the overall airport design aircraft. The primary runway is 6,200 feet long, 100 feet wide, and has non-precision instrument approaches with visibility minimums as low as one mile on each runway end. It has been established that the current and future critical aircraft falls within ARC B-II; therefore, when factoring in the RVR, the existing RDC for Runway 13-31 is B-II-5000, while the ultimate RDC is classified as B-II-4000, which accounts for the potential for an improved instrument approach procedure with visibility minimums not lower than ¾-mile. This possibility will be discussed in more detail in the next chapter.

Turf Runways 17-35 and 3-21 accommodate small aircraft exclusively and should each be planned to meet an RDC of A-I(Small)-VIS (visual approaches) now and in the future, if maintained.

ARC	Aircraft	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
A-I	Eclipse 400/500	0	0	0	0	0	0	0	0	2	0
	Kodiak Quest	0	0	0	0	2	4	6	0	0	0
	Lancair Evolution/Legacy	0	0	0	4	0	2	0	0	2	0
	Piper Malibu/Meridian	0	0	0	0	0	2	0	0	0	4
	Socata TBM 7/850/900	0	2	0	0	0	2	38	34	14	4
	Total	0	2	0	4	2	10	44	34	18	8
A-II	Cessna Caravan	4	0	0	0	0	0	0	0	0	0
	Pilatus PC-12	20	10	2	10	6	14	8	14	16	12
	Total	24	10	2	10	6	14	8	14	16	12
B-II	Beech 1900	0	0	0	0	0	0	0	0	0	2
	Cessna Conquest	2	2	0	0	2	0	0	2	0	2
	Citation CJ2/CJ3/CJ4	2	2	2	2	12	0	6	4	4	2
	Citation II/SP/Latitude	0	0	2	0	0	0	0	4	0	2
	Citation V/Sovereign	48	64	54	44	34	38	26	10	12	30
	Citation XLS	2	2	0	2	0	0	2	0	2	4
	Falcon 2000	0	0	0	0	0	0	0	0	4	0
	Falcon 900	0	2	0	4	2	2	0	0	0	0
	King Air 200/300/350	92	84	70	44	50	40	38	68	92	66
	King Air F90	4	0	0	2	0	0	0	0	0	2
	Phenom 300	2	0	0	0	2	4	2	4	6	6
	Swearingen Merlin	2	0	0	0	0	0	0	0	0	0
	Total	154	156	128	98	102	84	74	92	120	116
C-I	Learjet 31	2	2	0	0	0	0	0	0	0	0
	Learjet 40 Series	2	0	0	0	2	0	2	2	0	0
	Learjet 50 Series	0	0	0	0	0	4	0	0	0	0
	Learjet 60 Series	2	0	0	0	2	2	0	0	2	0
	Total	2	0	0	4	6	2	2	2	0	
C-II	Challenger 300	0	0	0	0	0	0	2	0	2	0
	Challenger 600/604	0	0	2	2	0	0	0	0	0	2
	Embraer 500/450 Legacy	0	0	0	0	0	0	0	2	0	0
	Gulfstream 100/150	2	2	0	0	0	0	0	0	0	0
	Hawker 800 (Formerly Bae-125-800)	2	0	0	0	0	0	0	0	0	0
	Total	4	2	2	2	0	0	2	2	2	2
D-I	Learjet 35/36	2	0	0	0	2	2	0	2	2	0
	Total	2	0	0	0	2	2	0	2	2	0
D-II	Gulfstream 200	0	0	0	0	0	0	0	2	0	0
	Total	0	0	0	0	0	0	0	2	0	0

Source: TFMSC 2014 through 2023 - Data normalized annually

AIRPORT REFERENCE CODE (ARC) SUMMARY

ARC CODE	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
A-I	0	2	0	4	2	10	44	34	18	8
A-II	24	10	2	10	6	14	8	14	16	12
B-I	14	26	14	28	16	24	18	38	48	36
B-II	154	156	128	98	102	84	74	92	120	116
C-I	6	2	0	0	4	6	2	2	2	0
C-II	4	2	2	2	0	0	2	2	2	2
D-I	2	0	0	0	2	2	0	2	2	0
D-II	0	0	0	0	0	0	0	2	0	0
Total	204	198	146	142	132	140	148	186	208	174

AIRCRAFT APPROACH CATEGORY (AAC)

AC	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
A	24	12	2	14	8	24	52	48	34	20
B	168	182	142	126	118	108	92	130	168	152
C	10	4	2	2	4	6	4	4	4	2
D	2	0	0	0	2	2	0	4	2	0
Total	204	198	146	142	132	140	148	186	208	174

AIRCRAFT DESIGN GROUP (ADG)

DG	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
I	22	30	14	32	24	42	64	76	70	44
II	182	168	132	110	108	98	84	110	138	130
Total	204	198	146	142	132	140	148	186	208	174

Exhibit 2H
HISTORICAL TURBOPROP AND JET OPERATIONS

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APPROACH AND DEPARTURE REFERENCE CODES

The approach and departure reference codes (APRC and DPRC) describe the current operational capabilities of each runway and the adjacent parallel taxiways, where no special operating procedures are necessary. Essentially, the APRC and DPRC describe the current conditions at an airport in runway classification terms when considering the parallel taxiway.

The parallel taxiway for Runway 13-31 is located 240 feet from the runway (centerline to centerline) at its closest point. Each runway end has non-precision instrument approaches with 1-mile visibility minimums. The APRC for Runway 13-31 is B/II/4000 and its DPRC is B/II.

AIRPORT AND RUNWAY CLASSIFICATION SUMMARY

Table 2P summarizes the airport and runway classification currently and in the future. The existing and ultimate critical aircraft are now defined by those aircraft in ARC B-II.

TABLE 2P | Airport and Runway Classifications

	Runway 13-31	Runway 17-35	Runway 3-21
	Existing & Ultimate	Existing & Ultimate	Existing & Ultimate
Airport Reference Code (ARC)	B-II	A-I(Small)	A-I(Small)
Airport Critical Aircraft	B-II-2A	A-I-1A	A-I-1A
Critical Aircraft (Typ.)	King Air 200/300/350	Cessna 182	Cessna 182
Runway Design Code (RDC)	B-II-5000 (Existing) B-II-4000 (Ultimate)	A-I(Small)-VIS	A-I(Small)-VIS
Approach Reference Code (APRC)	B/II/4000	N/A	N/A
Departure Reference Code (DPRC)	B/II	N/A	N/A
Taxiway Design Group (TDG)	2A	1A	1A

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

SUMMARY

This chapter has outlined the various activity levels that might reasonably be anticipated over the planning period, as well as the critical aircraft for the airport. Total based aircraft are forecasted to grow from 33 in 2023 to 42 by 2043. Operations are forecasted to grow from an estimated 3,346 in 2023 to 5,600 by 2043. The projected growth is driven by the FAA's positive outlook for general activity nationwide, as well as generally positive outlooks for the region.

The critical aircraft for the airport was determined by examining the FAA's TFMSC database of flight plans. For the primary runway, the current and future critical aircraft is described as B-II-2A and is best represented by a King Air 200/300/350.

The next step in the planning process is to assess the capabilities of the existing facilities to determine what upgrades may be necessary to meet future demands. The range of forecasts developed here will be utilized in the next chapter as planning horizon activity levels that will serve as milestones or activity benchmarks in evaluating facility requirements.