2 FORECASTS OF AVIATION DEMAND

This chapter of the Master Plan identifies and evaluates aviation demand over a 20-year planning period for Portage County Regional Airport (POV or "the Airport"). As part of the Master Plan effort for POV, projecting future aviation activity at the Airport is one of the most important steps in the planning process, as future plans are based on projected operations and based aircraft. Future airfield and facility need will be directly impacted by the projected aviation activity levels presented in this chapter.

To develop the most realistic forecasts possible, an understanding of current and historical airport operations, industry trends, and economic conditions within the Airport's catchment area (i.e., market) is necessary. These variables are detailed and factored into individual forecast scenarios that will comprise the general aviation (GA) operations and based aircraft forecasts. Each scenario is then evaluated for its applicability to POV, actual and anticipated market conditions are represented, and its relative comparison to the Federal Aviation Administration (FAA)-provided POV Terminal Area Forecast (TAF). From this effort, a "recommended forecast" is presented, which will serve as the basis for conducting subsequent demand/capacity analyses and identification of future facility requirements.

The assumptions, methodologies, and data used to create the projections are presented and analyzed in the sections to follow. The specific activity elements to be forecasted are limited to passenger and operational activity that directly affect the terminal and immediately adjacent land use associated with passenger and general aviation (GA) activity. As such, the evaluations presented in this chapter include:

- ✈ General Aviation Operations
    - o TAF Based Growth Analysis
    - o Historical Trend Analysis
    - o Econometric Analysis
    - o Operations Per Based Aircraft (OPBA) Analysis
    - o Regional Market Share Analysis
- ✈ General Aviation Based Aircraft
    - o TAF Based Growth Analysis
    - o FAA Aerospace Forecast Analysis
    - o Historic Trend
    - o Regional Market Share Analysis
- ✈ Fleet Mix Forecasts
    - o Based Aircraft
    - o Operations
- ✈ Determination of Critical Airport

2.1 IMPACTS OF COVID-19

In January of 2020, COVID-19 (commonly referred to as Coronavirus) began impacting the aerospace industry and air travel. According to FAA and industry sources, the impacts of COVID on the Aerospace system have been split in terms of types of users. Although impacted by the virus outbreak, GA users were not as impacted as commercial operators. While travel restrictions were placed on the commercial industry and routes, route restrictions were not placed on civil aviation.

Business and travel restrictions have had an impact on itinerant GA travel; however, recreational flying during the pandemic has been largely stable. In addition, during 2020, GA pilots began assisting with COVID-19 relief efforts by aiding in the delivery of personal protective equipment to medical facilities.

General Aviation Aircraft Shipment Reports, published by the General Aviation Manufacturers Association (GAMA)[1&2], indicates aircraft shipments in the United States declined from 1,771 aircraft in 2019 to 1,552 aircraft in 2020; however, the number of single-engine piston aircraft remained relatively stable with approximately a 3.0 percent increase in shipments, showing a stability trend among smaller aircraft users.

Due to the impacts of COVID-19 on the aviation industry, it was important to analyze and become familiar with historical activity trends at POV prior to 2020 to determine the level of impact on the Airport's activity and further determine recovery efforts.

POV does not support commercial service activity; therefore, the Airport was not heavily impacted like other airports in the region. According to airport personnel, due to limited activity and most activity at POV being comprised of based aircraft operators and recreational users, airport operations remained relatively steady throughout the COVID period. According to the FAA Terminal Area Forecast (TAF), historical operations increased from 9,621 operations in 2010 to 18,624 operations in 2019.

2.2   FORECAST DATA SOURCES

Information factored into the planning and forecasting efforts includes trends in GA operations and anticipated changes in the aircraft fleet mix at POV, if any. The data and assumptions used to define baseline conditions and future activity trends are derived from the following data sources:

- ✈ Airport Management: Airport management representatives typically provide the most accurate historical data and future assumptions regarding the Airport, including operations and based aircraft activity, fleet mix transitions, and anticipated service growth.
- ✈ FAA Terminal Area Forecast (TAF): TAF activity estimates are derived by the FAA from national estimates of aviation activity. These elements are derived by the FAA from airports based upon multiple market and forecast factors. The FAA considers local and national economic conditions, as well as trends within the aviation industry, when developing each forecast.
- ✈ FAA Aerospace Forecast (Fiscal Years 2021-2041): This forecast provides an overview of aviation industry trends and expected growth over a 20-year period. For the purposes of this forecast, national growth rates for active general aviation and air taxi aircraft are used as a comparison for the basis of determining the growth of the POV based aircraft and GA fleet mix.
- ✈ Airport Master Record (Form 5010): The form is used to collect, maintain, and disseminate timely information about an airport and is accessible via the FAA's Airport Data and Information Portal (ADIP). Information includes, but is not limited to, based aircraft and operations, communications, navigation aids (NAVAIDs), weather, runways, contact information, etc.

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1 General Aviation Manufactures Association. "General Aviation Aircraft Shipment Report." 16 May 2020. https://gama.aero/wp-content/uploads/2019ShipmentReport03162020.pdf

2 General Aviation Manufactures Association. "General Aviation Aircraft Shipment Report." 24 February 2021. https://gama.aero/wp-content/uploads/2020ShipmentReport-02242021.pdf

✈ Woods & Poole Economics, Inc.: This independent firm specializes in developing long-term economic and demographic projections. The data includes every state, Metropolitan Statistical Area (MSA), and county in the United States (U.S.) and contains historical data from 1969 through 2018, as well as projections from 2019 through 2050.

2.3 SERVICE AREA

Based on FAA guidelines within the National Plan of Integrated Airport Systems (NPIAS), POV is categorized as a Local GA airport, which provides communities with access to local and regional markets. As such, an airport's market, or service area, is defined as the area in which an airport captures the majority percentage of airport users. To determine the service area for POV, an evaluation using socioeconomic factors was conducted to identify which airports the local area population is most likely to use, based on the proximity of other airports in the region, drive-time, and demographics. For the purposes of this forecast, the service area for POV traffic is primarily Portage County (see Vicinity Map in Section 1). Nearby NPIAS airports within 45 nautical miles that are comparable in size and operation to POV are listed in Table 2-1.

Table 2-1 – Nearby NPIAS Airports

Airport (Identifier)	NPIAS Role	Nautical Miles (nm) from POV	Approximate Drive Time
Akron Fulton International (AKR)	Regional GA	14.2 nm	30 minutes
Cuyahoga County (CGF)	National Reliever	23.8 nm	45 minutes
Geauga County (7G8)	Local GA	16.7 nm	35 minutes
Kent State University (1G3)	Local GA	8.2 nm	25 minutes
Lake County Executive (LNN)	Regional Reliever	29.1 nm	55 minutes
Medina Municipal (1G5)	Local Reliever	23.7 nm	45 minutes
Northeast Ohio Regional (HZY)	Basic GA	42.2 nm	1 hour, 15 minutes
Wadsworth Municipal (3G3)	Local GA	26.1 nm	45 minutes
Warren (62D)	Unclassified GA	15.1 nm	30 minutes

Source: FAA NPIAS 2021-2025, Google Maps, CHA, 2021.

2.4 SOCIOECONOMIC DATA

The factors that have the greatest impact on the growth prospects of an airport are the socioeconomic characteristics such as population, employment, and personal per capita income present within the airport's catchment area. The economic and demographic growth patterns in the catchment area for POV will have major impacts on future demand for air service at the Airport. In February 2021, Woods & Poole Economics, Inc. provided historical socioeconomic data, as well as short- and long-term projections, for Portage County, the State of Ohio, and the United States. It is important to note that 2018 represents the last year of historical data; therefore, data from 2019 to 2050 are estimates.

2.4.1   Population

Portage County is the 18th most populous county in Ohio. In 2010, the county had a population of 161,386. The population grew to 162,594 by 2015 and had an estimated population of 162,648 in 2020, thus indicating an average annual growth rate (AAGR) of 0.1% for the last 10 years and a total growth of approximately 0.8%.

The population of Portage County is projected to grow at a rate of 0.3% between 2021 and 2029, then diminish to a growth rate of 0.1% by 2037 to 2040, resulting in an AAGR of approximately 0.2% throughout the 20-year forecast horizon or an overall growth of approximately 4.7% (Table 2-2, Figure 2-1).

Table 2-2 – Population (Historical & Projected)

Year	Portage County
Historical	
2010	161,386
2015	162,594
2020	162,648
AAGR 2010-2020	0.1%
Projected	
2021	163,171
2025	165,211
2030	167,404
2035	169,127
2040	170,255
AAGR 2020-2040	0.2%

Note: Woods & Poole, Inc. data is estimated.
Source: Woods & Poole Economics, Inc., CHA, 2021.

Figure 2-1 – Portage County Population (Historical & Projected)
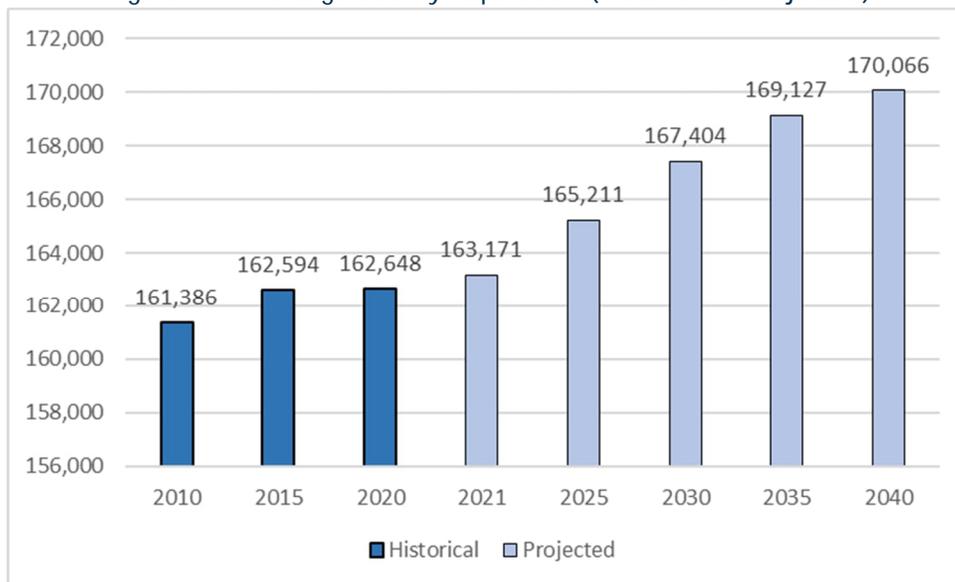
Note: Woods & Poole, Inc. data is estimated.
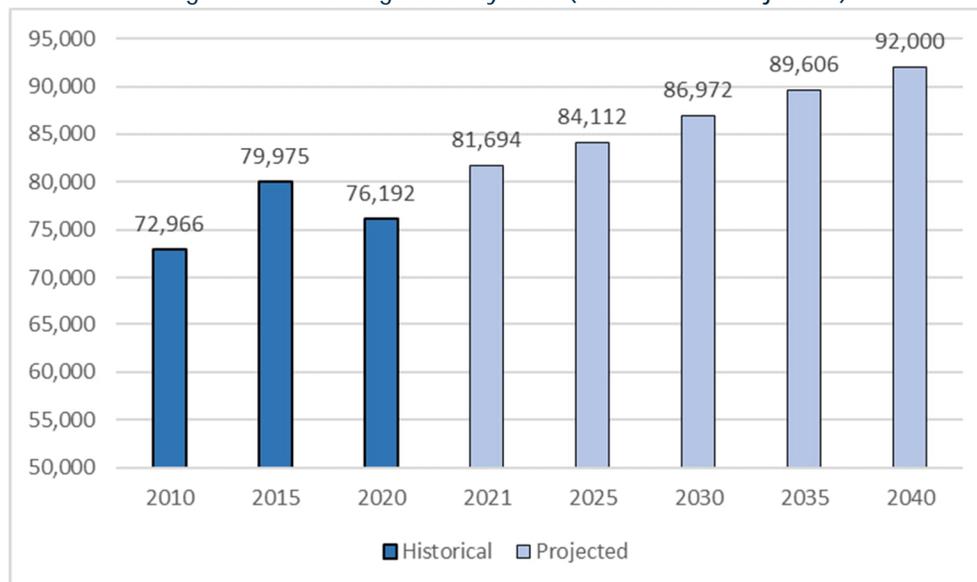Source: Woods & Poole Economics, Inc., CHA, 2021.

2.4.2   Jobs

In 2010, Portage County had approximately 73,000 jobs, about 1% of all jobs found in the State of Ohio. By 2020, the county had approximately 76,000 jobs with an AAGR rate of 0.5%, a total growth rate of approximately 4%, and retaining about 1% of all jobs found in the state. Significant industries in the county include manufacturing, which is being spurred by ongoing development near the Airport; as well as education (such as Kent State University and Northeast Ohio Medical University [NEOMED]). The number of jobs in Portage County is projected to increase by an AAGR of 1% throughout the 20-year forecast horizon, resulting in an overall growth of about 21% and retaining 1% of all jobs found in the state (Table 2-3, Figure 2-2).

Table 2-3 – Jobs (Historical & Projected)

Year	Portage County
Historical	
2010	72,966
2015	79,975
2020	76,192
AAGR 2010-2020	0.5%
Projected	
2021	81,694
2025	84,112
2030	86,972
2035	89,606
2040	92,000
AAGR 2020-2040	1%

Note: Woods & Poole, Inc. data is estimated.
Source: Woods & Poole Economics, Inc., CHA, 2021.

Figure 2-2 – Portage County Jobs (Historical & Projected)

Note: Woods & Poole, Inc. data is estimated.
Source: Woods & Poole Economics, Inc., CHA, 2021.

2.4.3 Personal Income Per Capita

From 2010 to 2020, personal income per capita within Portage County grew by an AAG of approximately 3.4%, for a total growth of nearly 40% over the 10-year period. Over the next 20 years, personal income is projected to continue increasing by an AAGR of approximately 5%, or by about 136% throughout the 20-year forecast horizon (Table 2-4, Figure 2-3); it is important to note that the dollar values depicted account for inflation to better depict and compare trends in income.

Table 2-4 – Personal Income Per Capita (Historical & Projected)

Year	Portage County
Historical	
2010	$34,068
2015	$40,476
2020	$47,449
AAGR 2010-2020	3.4%
Projected	
2021	$47,948
2025	$56,198
2030	$70,309
2035	$88,763
2040	$112,206
AAGR 2020-2040	4.5%

Note: Woods & Poole, Inc. data is estimated.
Source: Woods & Poole Economics, Inc., CHA, 2021.

Figure 2-3 – Portage County Personal Income Per Capita (Historical & Projected)
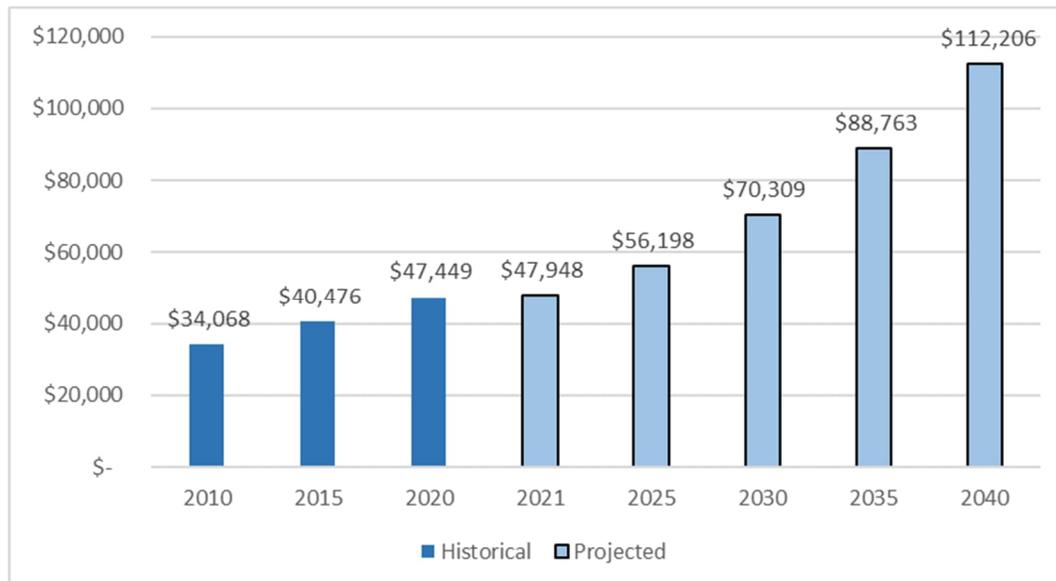
Note: Woods & Poole, Inc. data is estimated.
Source: Woods & Poole Economics, Inc., CHA, 2021.

2.5 GENERAL AVIATION FORECAST

General aviation (GA) includes all segments of the aviation industry except commercial air carriers/regional/commuter services, scheduled cargo, and military operations. GA represents the largest percentage of civil aircraft in the U.S. and accounts for the most operations handled by towered and non-towered airports. GA activities include flight training, sightseeing, recreational, aerial photography, law enforcement, and medical flights, as well as business, corporate, and personal travel via air taxi charter operations.

2.5.1 GA Based Aircraft

Various methodologies are utilized when developing the GA based aircraft forecast; existing GA based aircraft by type are detailed in Table 2-5. To determine the most reasonable scenario for POV, it is necessary to compare and eliminate those forecasts that do not support the key factors and variables that comprise the specific direction of the Airport and its market. This section provides the methodologies to be used and the methodologies to be analyzed for developing the forecasts of GA based aircraft at POV. The following methodologies were used to determine the recommended based aircraft forecast:

- ✈ FAA TAF-Based Growth Forecast
- ✈ FAA Aerospace Forecast Analysis
- ✈ Econometrics Analysis

The results are summarized in Table 2-8.

Table 2-5 – Existing GA Based Aircraft

Aircraft Type	Count
Single-Engine	66
Multi-Engine	5
Rotorcraft	2
Total GA Based Aircraft	73

Source: POV, CHA, 2022.

2.5.1.1 TAF-Based Growth Analysis

The TAF Based Growth analysis is a straightforward forecasting methodology that applies the AAGR presented in the TAF to an actual based aircraft count at the airport and projects the number of based aircraft throughout the forecast period. In other words, the TAF growth is applied to an actual 2020 based aircraft count and projected throughout the forecast period. The FAA's TAF does not depict any changes in the number of based aircraft at POV within the forecast period; moreover, when applying the AAGR, the growth in based aircraft remains static. Therefore, this forecast scenario was not chosen to represent the recommended based aircraft forecast.

2.5.1.2   FAA Aerospace Forecast Analysis

This forecasting approach analyzes data in the FAA Aerospace Forecasts (FY 2021-2041), such as annual GA aircraft projections by category, then projects growth for based aircraft at the Airport based on these growth rates. This assumes that the Airport's GA based aircraft will grow at the FAA-projected national rates, with the Airport maintaining its respective share of the fleet mix throughout the forecast period.

Table 2-6 – FAA National AAGR for GA Aircraft Types Based at POV

Period	Single-Engine	Multi-Engine	Piston Rotorcraft	Light Sport Aircraft
AAGR 2020-2021	-0.92%	-0.61%	0.16%	14.92%
AAGR 2021-2040	-0.91%	-0.40%	0.86%	4.01%

Source: FAA Aerospace Forecast (Fiscal Years 2021-2041), POV, CHA, 2021.

As shown in Table 2-6, national trends for general aviation aircraft reflect the transition from smaller GA aircraft, such as single- and multi-engine aircraft, to other aircraft types such as turboprops and jets. Unlike national trends, based aircraft at POV have been consistent and have been comprised of mostly single- and multi-engine aircraft rather than the larger airframes. Although POV could see these larger airframes within the planning horizon, single-engine and multi-engine piston aircraft are anticipated to remain as the primary based aircraft at the Airport; therefore, this forecast scenario was not chosen to represent the recommended based aircraft forecast.

2.5.1.3   Econometrics Analysis

Econometric analyses were conducted that examined GA based aircraft activity to find a direct relationship between the number of based aircraft and the socioeconomic conditions found in Portage County, including population, number of jobs, and personal income per capita (Section 2.4). The purpose of these analyses is to determine if a correlation exists that may assist in projecting future activity.

After conducting each analysis, it was determined that the number of jobs and personal income per capita had a more indirect impact than direct impact on based aircraft growth. However, the population-based econometric factor was found to have a direct impact on based aircraft growth. It is important to note, however, that while population-based econometrics have a more direct impact, quantitatively, the ongoing economic development in the immediate vicinity will also have a significant impact on future Airport activity growth.

2.5.1.4   Static Regional Market Share Analysis

The market share forecast methodology assumes that based aircraft and airport operations will grow at a proportional rate as compared to that of the state, region, or nation, thus maintaining its relative share of aircraft activity throughout the forecast period.

To understand how POV compares to regional growth trends, a market share forecast was developed, comparing it to the nine GA airports seen in Table 2-1. The forecast scenario was developed using TAF growth rates for based aircraft and operations. The growth rates were then applied to the POV baseline data. While COVID-19 related impacts were not significant at GA airports such as POV, these still yielded certain drops in activity in the short-term recovery period. Table 2-7 provides a summary of this forecast.

Table 2-7 – Static Regional Market Share Forecast (Based Aircraft)

Year	Total Regional Based AC	% Market Share	Forecasted POV Based AC
2020	763		73
2025	809		80
2030	851	9.57%	88
2035	900		96
2040	945		105
AAGR 2020-2040	1.1%	0.0%	1.8%
Growth 2020-2040	23.9%	0.0%	30.61%

Source: FAA 2020 TAF, CHA, 2021.

It is also important to note that while there is currently minimal jet traffic, discussions with POV and its tenants have indicated that potential Airport users plan to operate small (up to AAC/ADG B-II) jet aircraft at the Airport within the near term[3]. As a result, for planning purposes, it was assumed that up to three jets would be operating daily at POV by the year 2025, with the growth rate of the FAA Aerospace Forecast for jet aircraft applied.

2.5.1.5   Summary of GA Based Aircraft Forecasts

Based on factors noted above, the Population-Based Econometric scenario was chosen to represent the recommended GA Based Aircraft forecast.

Table 2-8 – Based Aircraft Forecast Comparisons

Year	TAF	TAF-Based	Regional Market Share	FAA Aerospace	Econometric Analysis		
					Population	Jobs	Personal Income per Capita
2020	73	73	73	73	73	73	73
2021	73	73	73	72	73	78	74
2025	73	73	80	70	77	84	89
2030	73	73	88	67	78	86	111
2035	73	73	96	64	80	90	141
2040	73	73	105	62	80	92	177
AAGR 2020-2040	0.0%	0.0%	1.8%	-0.8%	0.5%	1.2%	4.5%
Growth 2020-2040	0.0%	0.0%	30.61%	-15.2%	10.2%	26.2%	142.0%

Source: FAA 2020 TAF, FAA Aerospace Forecast (Fiscal Years 2021-2041), Woods and Poole Economics, Inc., POV, CHA, 2021.

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3 Refer to Appendix B for Letters of Intent and correspondence with Airport users obtained during this Master Plan Study.

2.5.2 GA Operations Forecast

Like the GA based aircraft forecasts, several methodologies exist that could be used to forecast GA operations. To determine the most plausible and reasonable scenario for POV, it is necessary to compare and eliminate those forecasts that do not support the key factors and variables that comprise the specific operational direction of the Airport, including:

- ✈ TAF-Based Growth Analysis
- ✈ Historical Trend Analysis
- ✈ Econometric Analysis
- ✈ Operations Per Based Aircraft (OPBA) Analysis

The results of these forecasts are summarized in Table 2-11.

Before conducting any GA operations forecast analysis, the FAA 2022 TAF must be adjusted to reflect GA operations at the Airport accurately. According to the FAA, the "Air Taxi & Commuter" category of FAA-reported operations data includes both scheduled Air Carrier operations with 60-seats or less (i.e., all 50-seat regional jet operations) and Part 135 business and charter operations. As the Airport does not provide scheduled Air Carrier service nor have Part 135 business and charter operations, any operations counted in these categories must be adjusted as itinerant GA operations, as shown in Table 2-9. Note that this total does not reflect the static forecast of 144 Military operations, annually.

Table 2-9 – 2021 TAF Adjusted GA Operations

Year	Itinerant Operations		Adjusted Itinerant Operations		Local GA Operations	Total Adjusted GA Operations
	Air Taxi & Commuter	GA	Air Taxi & Commuter	GA		
2010	1,330	4,750	0	6,080	3,325	9,405
2011	1,330	4,750	0	6,080	3,325	9,405
2012	1,330	4,750	0	6,080	3,325	9,405
2013	0	4,750	0	4,750	3,325	8,075
2014	0	4,750	0	4,750	3,325	8,075
2015	0	4,750	0	4,750	3,325	8,075
2016	780	4,750	0	5,530	3,325	8,855
2017	780	4,750	0	5,530	3,325	8,855
2018	120	8,760	0	8,880	9,600	18,480
2019	120	8,760	0	8,880	9,600	18,480
2020	120	8,760	0	8,880	9,600	18,480
2021-2040	120	8,760	0	8,880	9,600	18,480

Source: FAA 2021 TAF, CHA, 2021.

2.5.2.1   TAF-Based Growth Analysis

Like the TAF-Based Growth analysis for based aircraft, the FAA's projected average annual growth for general aviation operations from FY 2020 through 2040 was determined and then applied to actual airport-reported data and extrapolated through 2040.

The 2020 TAF estimates that GA operations at POV will be static, thus remaining at 18,480 operations throughout the forecast period. Because the Airport is not at capacity and based aircraft are projected to increase, the level of operations likely will not remain static, as based aircraft are a driver of operations; therefore, this scenario was not chosen to represent the recommended GA operations forecast.

2.5.2.2   Historical Trend Analysis

Historical trend is a time trend analysis that uses the airport's historical GA activity as a metric to provide future growth projections. The 2020 TAF indicates GA operations remained relatively static at 9,405 operations, 8,075 operations, 8,855 operations, and 18,480 operations from 2010 to 2020. Due to the lack of accurate historical operations data for POV, the Historical Trend Analysis was deemed inappropriate to forecast future operations; therefore, this scenario was not chosen to represent the recommended GA operations forecast.

2.5.2.3   Econometric Analysis

Econometric analyses were conducted that examined GA activity to find a direct relationship between the number of GA operations and the socioeconomic conditions found in Portage County, including population, number of jobs, and personal income per capita (Section 2.4). The purpose of the econometrics analyses is to determine if a correlation exists that may assist in projecting future activity.

It was determined that the number of jobs and personal income per capita had more of an indirect impact than a direct impact on operational growth. However, the population econometric factor was found to impact operational growth directly, and therefore, was chosen to represent the recommended GA operations forecast. As noted earlier, however, certain aspects such as local job creation and economic development are also taken into consideration when preparing and determining recommended forecasts.

2.5.2.4   Operations Per Based Aircraft (OPBA) Analysis

Operations per based aircraft (OPBA) forecasts involve a relatively straightforward forecasting methodology that assumes a total number of annual operations conducted is representative of the number of aircraft based at the Airport. This methodology is often used at airports where based aircraft are large contributors to GA activity, such as POV.

In 2020, the Airport had approximately 253 operations per based aircraft (18,480 GA operations divided by 73 based aircraft). As shown in the recommended based aircraft forecast (population-based econometric analysis), POV is projected to have 80 based aircraft in 2040. Based on the OPBA analysis, assuming 253 operations for each of the 80 based aircraft in 2040, the Airport will have approximately 20,357 GA operations at the end of the forecast period, or approximately 10% more GA operations. The operations from 2021 through 2040 are a result of a statistical interpolation using a compound annual growth rate (CAGR).

2.5.2.5   Static Regional Market Share Analysis

This forecast scenario uses the same baseline TAF data as the based aircraft Static Regional Market Share Analysis, as well as the same nine comparison airports (1G3, 1G5, 7G8, AKR, BJJ, BKL, CGF, HZY, and YNG). The forecast scenario was developed using TAF growth rates for based aircraft and operations. The growth rates were then applied to the POV baseline data. Table 2-10 provides a summary of this forecast.

Table 2-10 – Regional Market Share Forecast (Operations)

Year	Total Regional Operations	% Market Share	Forecasted POV Operations
2020	342,230		18,624
2025	360,609		19,183
2030	365,614	3.0%	19,758
2035	371,016		20,351
2040	376,881		20,961
AAGR 2020-2040	0.5%	0.0%	0.6%
Growth 2020-2040	10.1%	0.0%	11.2%

Source: FAA 2020 TAF, CHA, 2021.

2.5.2.6   Summary of GA Operations Forecast

The Population-Based Econometric analysis is believed to be the most reasonable scenario for projecting GA operations at POV.

Table 2-11 – GA Operations Forecast Comparisons

Year	2020 TAF Operations (Adjusted)	Regional Market Share	Econometric Analysis			OPBA
			Population	Jobs	Personal Income per Capita	
2020	18,480	18,624	18,480	18,480	18,480	18,480
2021	18,480	19,065	18,539	19,814	18,674	18,539
2025	18,480	19,183	18,539	20,401	21,888	19,531
2030	18,480	19,758	19,020	21,095	27,383	19,780
2035	18,480	20,351	19,216	21,734	34,571	20,229
2040	18,480	20,961	19,344	22,314	43,701	20,357
AAGR 2020-2040	0.0%	0.6%	0.2%	0.9%	4.4%	0.5%
Growth 2020-2040	0.0%	11.2%	4.7%	20.7%	136.5%	10.2%

Source: FAA 2020 TAF, Woods and Poole Economics, Inc., POV, CHA, 2021.

2.6 MILITARY OPERATIONS FORECAST

Military activity is often included in the based aircraft and operations projections but is not forecast in the same manner as general aviation activity since the number, location, and activity levels are not a function of the anticipated market and economic conditions but are rather a function of military decisions, national security priorities, and budget pressures that cannot be predicted over the course of the forecast period. For forecasting purposes, military based aircraft and operations typically remain static at baseline year levels throughout the forecast.

As previously discussed, military operations are assumed to remain static at 2020 activity levels throughout the forecast horizon, as military operations cannot be forecast in the same manner as general aviation activity levels. Military activity levels are depicted in Table 2-12.

Table 2-12 – Recommended Military Forecast

Year	Itinerant Operations	Local Total Operations	Total Military Operations
2020	144	0	144
2040	144	0	144

Source: FAA TAF, CHA, 2021.

2.7 RECOMMENDED FORECAST SUMMARY

As mentioned, the population-based econometric analysis was chosen to represent both the recommended GA based aircraft forecast and GA operations forecast for POV.

To determine the breakdown of GA operations by itinerant versus local, an average five-year split was applied to each forecast year. On average, over the past five years, GA activity has consisted of approximately 53.8% itinerant and 46.2% local operations. It was assumed that this average would continue throughout the forecast. The recommended GA operations forecast, with the applied split between itinerant and local operations, is depicted in Table 2-13.

The following table presents a summary of the recommended GA activity forecasts for based aircraft and operations, along with military activity, as detailed in the previous sections.

Table 2-13 – Recommended Forecast Summary

Year	Based Aircraft	Operations				
		GA Itinerant	GA Local	Total GA	Military	Total Operations
2020	73	9,944	8,536	18,480	144	18,624
2021	73	9,976	8,563	18,539	144	18,683
2025	77	10,101	8,670	18,771	144	18,915
2030	78	10,235	8,785	19,020	144	19,164
2035	80	10,340	8,876	19,216	144	19,360
2040	80	10,409	8,935	19,344	144	19,488
AAGR 2020-2040	0.5%	0.2%	0.2%	0.2%	0.0%	0.2%
Growth 2020-2040	10.2%	4.7%	4.7%	4.7%	0.0%	4.6%

Source: FAA 2020 TAF, Woods and Poole Economics, Inc., POV, CHA, 2021.

The full 20-year recommended projects can be found in Appendix A.

2.7.1 Recommended Operations Forecast vs. FAA TAF

Table 2-14 details the recommended operations forecast for POV in comparison to the FAA 2020 TAF forecast. The recommended forecast predicts operations to be approximately 1.6% higher than the TAF in five years and approximately 2.9% above the TAF in 10 years, both of which are within the acceptable ranges provided in AC 150/5070-6B, Airport Master Plans.

Table 2-14 – FAA Appendix C: Comparing Airport Planning and TAF Forecasts

Appendix C Comparing Airport Planning and TAF Forecasts				
Operations	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Base Yr.	2020	18,480	18,624	0.0%
Base Yr. + 5 Yrs.	2025	18,915	18,624	1.6%
Base Yr. + 10 Yrs.	2030	19,164	18,624	2.9%
Base Yr. + 15 Yrs.	2035	19,360	18,624	4.0%
Base Yr. + 20 Yrs.	2040	19,488	18,624	4.6%

Source: FAA 2020 TAF, Woods and Poole Economics, Inc., POV, CHA, 2021.

2.8 AIRCRAFT FLEET MIX

The collection of aircraft using an airport, referred to as the aircraft fleet mix, determines the type and size of facilities required to accommodate airport activity. Fleet mix forecasts for both based aircraft and total operations were developed for POV. One of the key themes presented in this section is the historically slow growth at the Airport. Aside from a lack of current adequate passenger facilities and declines in aviation trends at the national level, issues with airfield infrastructure, particularly runway length, have hindered the Airport's historical operations growth. Improvements to the runway and airfield infrastructure at the Airport may address this shortcoming and allow for the additional use of turbine and jet aircraft operations at POV.

2.8.1 Based Aircraft Fleet Mix

Using the assumptions for based aircraft from the recommended scenario, a fleet mix forecast for POV is presented in Table 2-15.

Table 2-15 – Based Aircraft Fleet Mix Forecast

Year	Single-Engine Piston	Multi-Engine Piston	Turboprop	Jet	Other	Based Aircraft
2020	66	5	0	0	2	73
2025	65	5	2	3	2	77
2030	64	5	3	3	3	78
2035	63	5	5	4	3	80
2040	63	5	5	4	3	80

Source: CHA 2022.
Note: Other indicates gliders, ultralights, and other sport aircraft.

2.8.2 Operations Fleet Mix

The operations fleet mix forecast was developed using the baseline-based aircraft data, with the static percentage fleet mix splits applied to determine baseline operations. Table 2-16 presents the operations fleet mix for POV.

Table 2-16 – Operations Fleet Mix Forecast

Year	Single-Engine Piston	Multi-Engine Piston	Turboprop	Jet	Other*	Military	Total Operations
2020	16,708	1,266	0	0	506	144	18,624
2025	15,846	1,219	488	731	488	144	18,915
2030	15,606	1,219	732	732	732	144	19,164
2035	15,133	1,201	1,201	961	721	144	19,360
2040	15,233	1,209	1,209	967	725	144	19,488

Source: CHA 2022.
*Other indicates gliders, ultralights, and other sport aircraft.

2.9   DETERMINATION OF CRITICAL AIRCRAFT

Evaluating the Airport's current fleet mix and determining the current and projected design aircraft are important aspects of the Master Plan Study. The design aircraft (commonly referred to as the "critical aircraft") determination is a key consideration in FAA decision making regarding justification for funding future airport improvement projects. The "design aircraft" or "design aircraft family" represent the most demanding aircraft or grouping of aircraft with similar characteristics (relative to AAC, ADG, TDG)[4] that are currently using or are anticipated to use an airport on a regular[5] basis. The combination of AAC and ADG defines an airport's ARC that entails the design aircraft. While the study is not limited to planning for the design aircraft, they must still be considered when planning airfield and landside facilities as they may require specific facility design accommodations.

Upon review of the FAA's Traffic Flow Management System Count (TFMSC), the dominant aircraft family, or ARC, for POV is currently A-I (Table 2-17).

Table 2-17 – Fleet Mix Breakdown by Design Group

		2019	2020	2021
AAC	A	374	246	324
	B	271	191	153
ADG	I	504	315	358
	II	141	122	119

Source: TFMSC, CHA, 2021.

The FAA NextGen Automatic Dependent Surveillance-Broadcast (ADS-B) from 9/2021 to 9/2022 was also reviewed (see Appendix C). While no aircraft performed more than 500 operations, defined as regular use for the design aircraft determination, the data is not all-inclusive. ARC B-I and B-II aircraft also represent fewer than a combined 500 annual operations, however, TFMSC and ADS-B data suggests that the Airport's most prolific aircraft type is the B-II (King Air F90, which is based at POV). There has been consistent activity over the last three to four years, from the Beechcraft King Air F90 and Piper Cheyenne.

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4 AAC (Aircraft Approach Category), ADG (Airplane Design Group), TDG (Taxiway Design Group).

5 According to FAA AC 150/5000-17, Critical Aircraft and Regular Use Determination, the terminology of "regular use" is defined as 500 annual operations, including itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or landing.

According to existing operational data, the Beechcraft King Air 90 (B-II) conducted more operations at POV than any other aircraft type in 2021. Since initiating this Master Plan effort, the Authority has received Letters of Intent from multiple operators at POV (both existing and potential), discussing their desire to operate larger B-I/B-II aircraft. These letters can be found in Appendix B.

The existing aircraft family at POV includes a mix of A-I, B-I, and B-II aircraft. Based on the operational data the existing critical aircraft was determined to be A-I. The future critical aircraft is the King Air F90, which his B-II (small). A new operator has been leasing space at POV for one of their Cessna Citation 550/560 with plans for expansion if the runway length could be improved. Other existing tenants have stated in writing they would expand and/or upgrade their aircraft at POV if the runway were improved. Based on the letters in Appendix B, it was determined the ultimate critical aircraft should be B-II large. The FAA classifies the ultimate condition as past the 20-year planning period, however, if the runway could be extended within the planning period, it would be expected that B-II jet traffic would increase substantially.

Existing POV Critical Aircraft:

- ✈ ARC A-I
- ✈ Aircraft (Piper Cherokee, Cessna 170)

Future POV Critical Aircraft:

- ✈ ARC B-II (less than 12,500 pounds)
- ✈ Aircraft (Beech King Air F90)

Ultimate POV Critical Aircraft:

- ✈ ARC B-II (greater than 12,500 pounds)
- ✈ Aircraft (Cessna 550)