CHAPTER TWO: AVIATION DEMAND FORECASTS

An important factor in facility planning is estimating the demand that can be reasonably expected to occur during the useful life of an airport's key components (e.g., runways, taxiways, terminal facilities, etc.). In airport master planning, this involves projecting potential aviation activity for at least a 20-year timeframe. Aviation demand forecasting for Johnson County Executive Airport (OJC) primarily considers based aircraft, aircraft operations, peak activity periods, and critical aircraft.

The Federal Aviation Administration (FAA) has oversight responsibility to review and approve aviation forecasts developed in conjunction with airport planning studies. When reviewing a sponsor's forecast (from the master plan), the FAA must ensure the forecast is based on reasonable planning assumptions, uses current data, and is developed using appropriate forecasting methods. According to the FAA, forecasts should be:

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

The forecasting process for an airport master plan consists of a series of basic steps that 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 forecasting methods, preparation of the forecasts, and documentation and evaluation of the results. FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, outlines the following standard steps involved in the forecasting process.

1. **Identify Aviation Activity Measures**: Determine the level(s) and type(s) of aviation activities likely to impact facility needs. For general aviation, these typically include based aircraft and operations.

2. **Review Previous Airport Forecasts**: These may include the FAA *Terminal Area Forecast* (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 forecasted data.

4. **Select Forecast Methods**: Several appropriate methodologies and techniques are available, including regression analysis, trend analysis, market share or ratio analysis, exponential smoothing, econometric modeling, comparison with other airports, survey techniques, cohort analysis, choice and distribution models, range projections, and professional judgment.

5. **Apply Forecast Methods and Evaluate Results**: Prepare the actual forecasts and evaluate them for reasonableness.

6. **Summarize and Document Results**: Provide supporting text and tables, as necessary.

7. **Compare Forecast Results with the FAA's TAF**: Based aircraft and total operations are considered consistent with the TAF if they meet one of the following criteria:

    - The forecasts differ by less than 10 percent in the five-year forecast period and less than 15 percent in the 10-year forecast period;
    - The forecasts do not affect the timing or scale of an airport project; or
    - The forecasts do not affect the role of the airport as defined in the current version of FAA Order 5090.5, *Formulation of the National Plan of Integrated Airport Systems and Airports Capital Improvement Program*.

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 were examined and compared against current and historical activity. The historical aviation activity was then examined, along with other factors and trends that can affect demand, with the intent 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 utilize a base year of 2026 with a long-range forecast out to 2046.

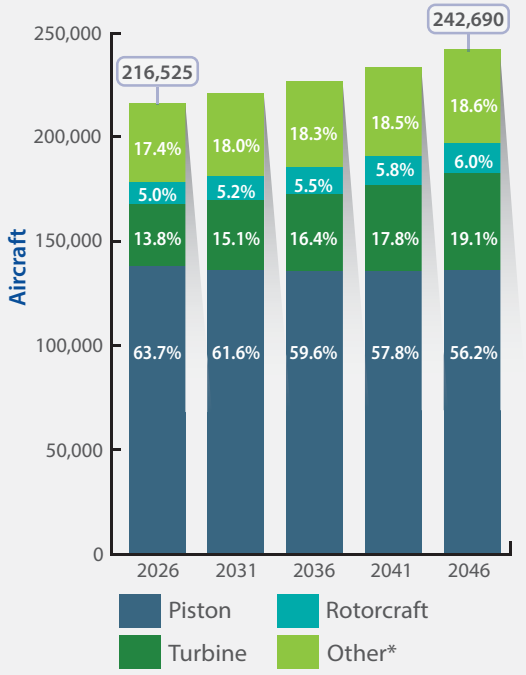
NATIONAL AVIATION TRENDS

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 (GA), 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 public. When this chapter was prepared, the current edition was *FAA Aerospace Forecast Fiscal Years* (FY) *2026–2046*. The FAA primarily uses the economic performance of the United States (U.S.) 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 a brief synopsis of highlights from the FAA's national general aviation forecasts. A summary is also shown on **Exhibit 2A**.

NATIONAL GENERAL AVIATION TRENDS

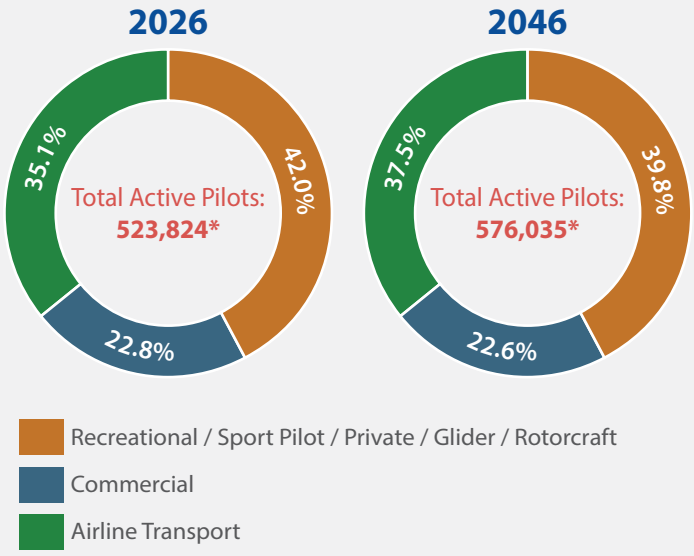
The long-term outlook for general aviation is promising, as growth at the high end of the segment offsets continuing retirements at the traditional low end. The active general aviation fleet is forecasted to remain relatively stable between 2026 and 2046, increasing by just 0.6 percent. While steady growth in both gross domestic product (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; however, the growing experimental aircraft fleet will offset some of this decline.

U.S. Active General Aviation Aircraft



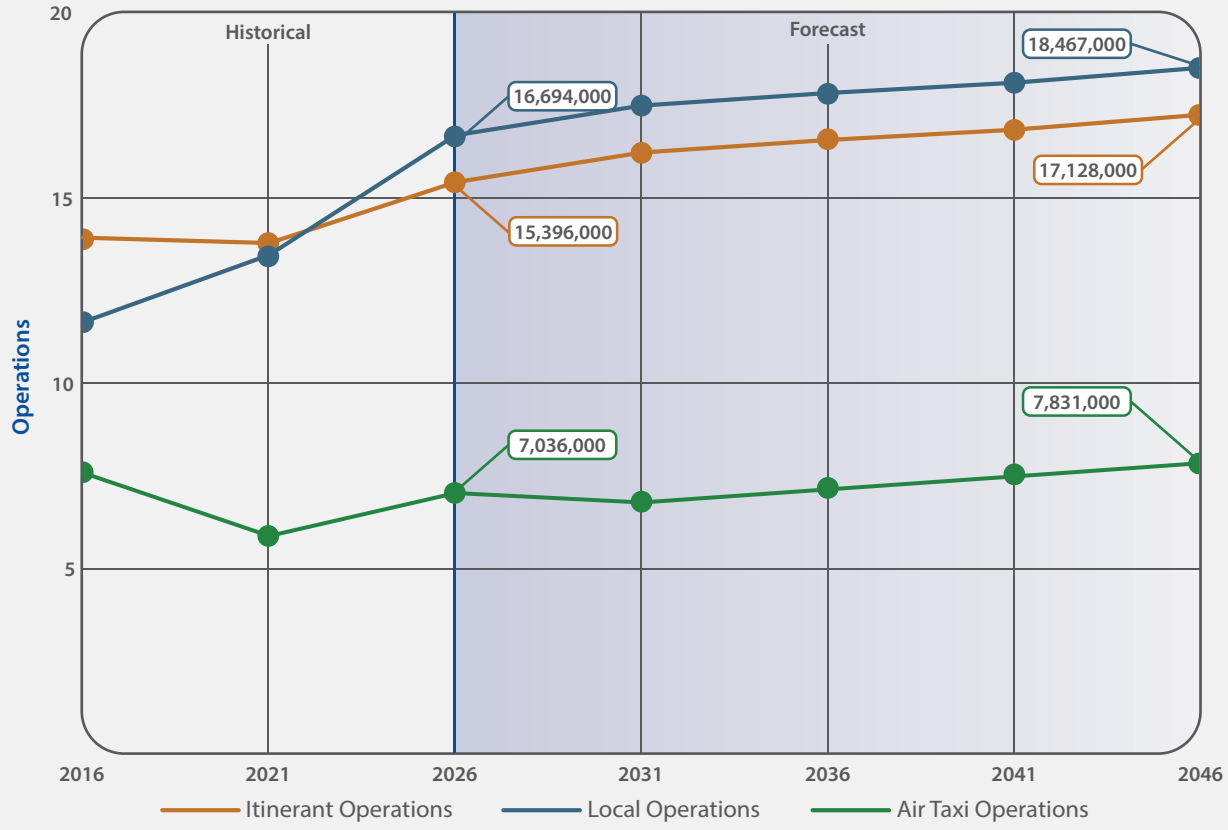
*The "other" category includes gliders and balloons

Active Pilots By Certificate



*Excludes student pilot certificates

U.S. General Aviation and Air Taxi Operations



Source: FAA Aerospace Forecasts FY2026-2046

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 forecasted by the FAA.

TABLE 2A: FAA General Aviation Forecast

Forecast Category	Demand Indicator	2026	2046	CAGR
General Aviation Fleet	Total Fixed-Wing Piston	138,015	136,420	-0.1%
General Aviation Fleet	Total Fixed-Wing Turbine	30,010	46,445	2.2%
General Aviation Fleet	Total Helicopters	10,825	14,665	1.5%
General Aviation Fleet	Total Other (experimental, light sport, etc.)	37,675	45,160	0.9%
General Aviation Fleet	**Total General Aviation Fleet:**	**216,525**	**242,690**	**0.6%**
General Aviation Operations	Local	16,694,000	18,467,000	0.5%
General Aviation Operations	Itinerant	15,396,000	17,128,000	0.5%
General Aviation Operations	**Total General Aviation Operations:**	**32,524,000**	**35,161,000**	**0.5%**

CAGR = compound annual growth rate (2026–2046)

Source: FAA Aerospace Forecast FY 2026–2046

FAA forecasts of total operations (based on activity at control towers across the United States) 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 32.5 million in 2026 to 35.2 million in 2046, 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 0.5 percent for both local and itinerant general aviation operations.

BUSINESS JET OPERATIONAL TRENDS

General aviation airports are often hubs of diverse activity, although they frequently experience a predominance of operations by piston-powered aircraft. These aircraft, including single-engine and light twin-engine aircraft, comprise most of the based aircraft and operations at general aviation airports. Their routine activities include everything from local flights and flight training to recreational flying and short-haul travel. Piston-powered aircraft are generally more numerous and engage in more frequent, shorter operations, which contributes to a busy and vibrant atmosphere at general aviation airports.

In contrast, business jets are less numerous and conduct fewer operations overall but are physically demanding in a different way. Business jets require more space for their operations due to their larger size and need for longer runways. Their arrivals and departures can place greater demands on airport infrastructure, such as requiring more intensive ground handling, fueling, and maintenance services. The operational impacts of business jets require increased coordination with ground support services and infrastructure support (e.g., larger hangars, apron/taxilanes, and fuel loads), so their presence is felt more prominently even if they operate less frequently than their piston-powered counterparts.

At general aviation airports with higher amounts of jet traffic, such as OJC, business jets drive the critical aircraft discussion. For this reason, additional focus is placed on national business jet trends to help understand growth patterns and how they might impact future operations at OJC.

Since the early 2000s, business jet operational trends have significantly evolved, driven by advancements in technology, changing economic conditions, and shifts in travel preferences. Progress in aircraft technology has led to the development of business jets with greater range and performance capabilities. Newer models can cover longer distances nonstop, reducing the need for intermediate stops. Ultra-long-range business jets, such as the Gulfstream G700/G800, Bombardier Global 7500, and Boeing Business Jet (BBJ), have ranges of over 7,000 nautical miles (nm) and are experiencing growing demand from corporations and high-net-worth individuals who seek more flexibility and range (ability to travel longer distances). Fuel efficiency improvements and operating cost reductions are focal points; modern business jets are designed with more efficient engines and aerodynamic enhancements that lower fuel consumption and operational expenses. Some of the most fuel-efficient business jet models include the Embraer Phenom 300, Pilatus PC-24, Cessna Citation XLS, and Learjet 75.

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. As shown in **Table 2B**, the top 15 business jets with the most operations in 2025 (the last full calendar year of available data) are led by two of the most efficient business jets, the Embraer Phenom 300 and the Cessna Citation Latitude. Of the top 15 business jets, several have experienced slowed or declining growth rates over the past five years, reflecting a shift in operations to newer models.

TABLE 2B: 2025 Top 15 Busiest Business Jets by Operations

Aircraft Type	Operations: 2021	Operations: 2022	Operations: 2023	Operations: 2024	Operations: 2025	2021–2025 CAGR
E55P (Embraer Phenom 300)	335,646	354,249	364,496	399,592	470,195	8.8%
C68A (Cessna Citation Latitude)	229,559	252,954	280,931	335,968	359,074	11.8%
C56X (Cessna Excel/XLS)	357,612	380,367	348,207	341,568	348,958	-0.6%
CL35 (Bombardier Challenger 300)	217,882	235,031	247,705	270,003	284,560	6.9%
C25B (Cessna Citation CJ3)	179,269	193,852	205,427	221,978	227,382	6.1%
CL60 (Bombardier Challenger 600/601/604)	193,995	202,902	191,212	192,776	197,120	0.4%
H25B (BAe HS 125/700-800/Hawker 800)	240,801	229,572	199,976	188,903	191,214	-5.6%
C560 (Cessna Citation V/Ultra/Encore)	228,409	219,329	197,471	183,614	178,137	-6.0%
GLF4 (Gulfstream IV/G400)	202,549	196,146	175,091	167,300	173,724	-3.8%
CL30 (Bombardier Challenger 300)	172,303	169,523	162,654	162,026	171,924	-0.1%
BE40 (Raytheon/Beech Beechjet 400/T-1)	244,373	234,904	200,363	157,608	136,283	-13.6%
C525 (Cessna CitationJet/CJ1)	166,026	166,923	152,957	142,491	134,688	-5.1%
GLF5 (Gulfstream V/G500)	127,765	150,344	136,684	135,606	134,635	1.3%
F2TH (Dassault Falcon 2000)	131,785	149,210	142,465	132,020	132,962	0.2%
C700 (Cessna Citation Longitude)	29,044	51,928	69,960	99,626	126,122	44.4%

CAGR = compound annual growth rate

Source: FAA TFMSC

Table 2C lists the business jets with the fastest operational growth rates over the past five years. These aircraft represent newer models, such as the Cessna Citation Longitude and Latitude (newest Cessna models), the Gulfstream G500 and Bombardier Global 7500 (ultra-long-range aircraft), and the Cirrus Vision SF50 (Vision Jet) and Cessna Citation Bravo (light business jets).

TABLE 2C: Top 15 Fastest Operational Growth Business Jets

Aircraft Type	Operations: 2021	Operations: 2022	Operations: 2023	Operations: 2024	Operations: 2025	2021–2025 CAGR
C700 (Cessna Citation Longitude)	29,044	51,928	69,960	99,626	126,122	44.4%
GL7T (Bombardier Global 7500)	8,808	15,338	20,692	29,921	35,717	41.9%
GA5C (G-7 Gulfstream G500)	13,900	17,868	26,823	33,460	37,576	28.2%
C55B (Cessna Citation Bravo)	21,828	27,608	33,537	31,035	37,688	19.7%
SF50 (Cirrus Vision SF50)	62,547	82,853	98,641	94,984	116,685	16.9%
E550 (Embraer Legacy 500)	30,973	36,636	42,616	53,739	63,606	14.6%
E545 (Embraer EMB-545 Legacy 450)	62,344	71,203	82,854	92,470	115,974	13.9%
FA8X (Dassault Falcon 8X)	4,146	7,052	7,028	6,880	6,986	12.8%
C68A (Cessna Citation Latitude)	229,559	252,954	280,931	335,968	359,074	11.8%
GLF6 (Gulfstream)	55,534	73,457	79,805	84,261	89,795	8.8%
E55P (Embraer Phenom 300)	335,646	354,249	364,496	399,592	470,195	8.7%
G280 (Gulfstream G280)	66,010	79,495	79,726	83,720	92,200	8.6%
C25M (Cessna Citation M2)	38,670	49,915	52,383	53,121	53,736	6.9%
CL35 (Bombardier Challenger 300)	217,882	235,031	247,705	270,003	284,560	6.1%
GL5T (Bombardier BD-700 Global 5000)	38,703	40,258	41,975	42,424	47,868	5.5%

CAGR = compound annual growth rate

Source: FAA TFMSC

RISKS TO THE FORECAST

While the FAA is confident 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 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 primarily defined by evaluating the locations of competing airports and their capabilities, services, and 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. OJC is classified as a reliever airport within the *National Plan of Integrated Airport Systems* (NPIAS), meaning its main purposes are to relieve congestion at local commercial service airports, such as Kansas City International Airport (MCI), and provide more general aviation access to the overall community.

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

As in any business enterprise, the more attractive a facility is in terms of services 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 its facilities and services are adequate and/or competitive, some level of aviation activity might be attracted to an airport from more distant locales.

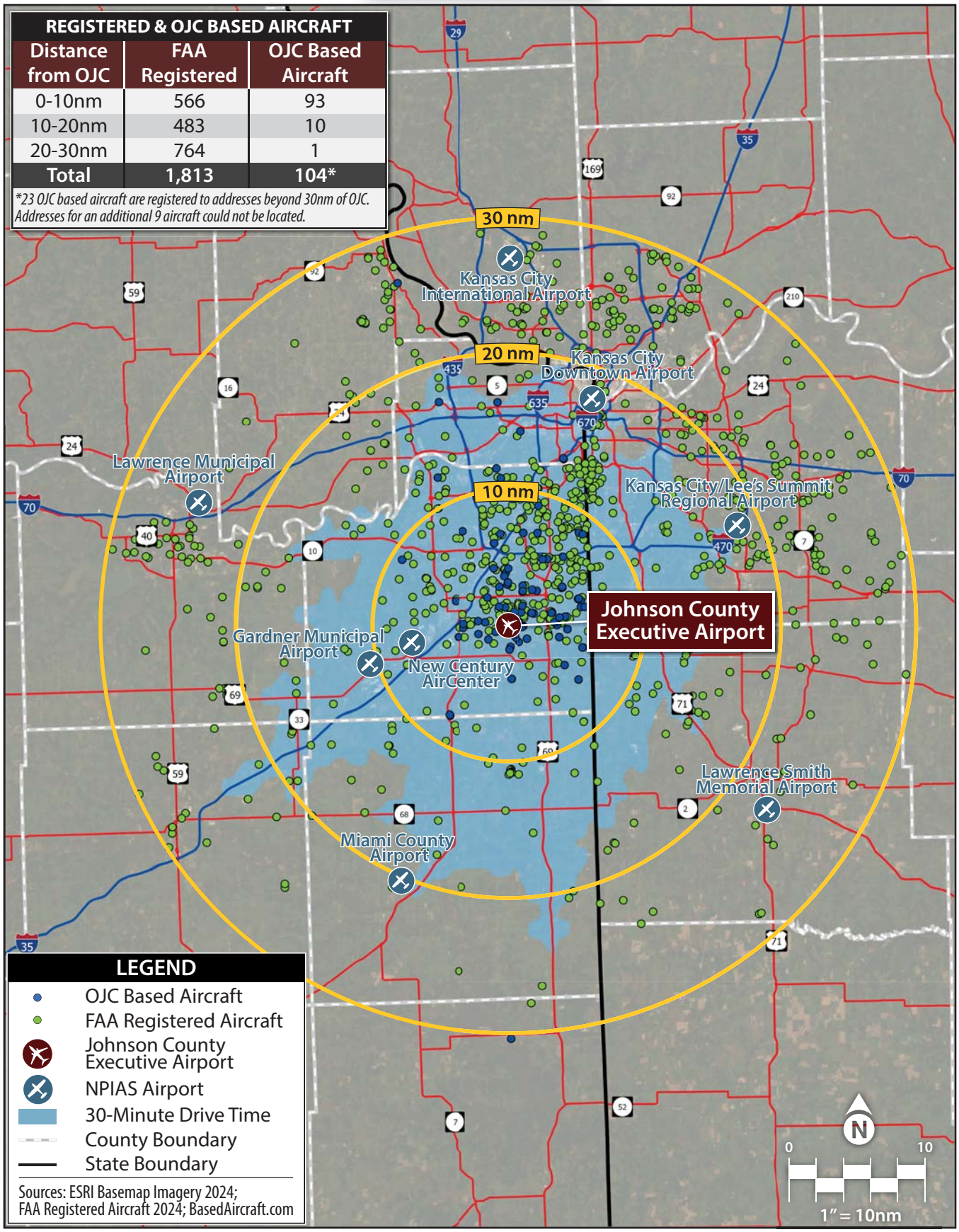
As a rule, a general aviation airport's service area can extend for approximately 30 nautical miles (nm). As outlined in Chapter One, there are six public-use airports with at least one 4,000-foot paved runway within a 30-nm radius of OJC, all of which are classified in the NPIAS. One of these airports (MCI) is classified as a primary commercial service airport.

When evaluating the GA service area, two primary demand segments must be considered: based aircraft and itinerant operations. An airport's ability to attract based aircraft is an important factor when defining the service area; proximity is a consideration for most aircraft owners. Aircraft owners typically choose to base at airports close to their homes or businesses. **Exhibit 2B** depicts a radius of 10, 20, and 30 nm from OJC, extending beyond Johnson County and into neighboring counties that partially comprise the Kansas City, MO-KS metropolitan statistical area (MSA). Registered aircraft in the region and aircraft based at OJC are also shown on the exhibit, including larger clusters of registered aircraft located near regional airports, such as New Century AirCenter (IXD), Charles B. Wheeler/Kansas City Downtown Airport (MKC), and Kansas City/Lee's Summit Regional Airport (LXT), in addition to OJC. In total, there are 1,813 registered aircraft within a 30-nm radius of OJC. The airport has approximately 150 aircraft in its based aircraft inventory, 136 of which have been validated by the FAA and are currently based at the airport. Of the aircraft in OJC's inventory, 104 are based within 30 nm of the airport, 23 are registered to addresses beyond the 30-nm radius, and nine aircraft have no published address information. Approximately 76 percent of OJC's based aircraft inventory is attributed to addresses within 30 nm of the airport and 68 percent is attributed to addresses within 10 nm of the airport.

A 30-minute drive time isochrone is also overlain on the map, as indicated by blue shading. Virtually all of Johnson County is included within the isochrone, along with portions of neighboring Wyandotte, Douglas, Franklin, and Miami Counties. Jackson and Cass Counties on the Missouri side are also included.

The second demand segment to consider is itinerant operations. These are operations performed by aircraft that arrive from outside the airport area and land at OJC or depart from OJC for other airports. In most cases, pilots will use airports nearer their intended destinations; however, this is dependent on the airport's ability to accommodate aircraft operators in terms of the facility and services available. As a result, airports with better facilities and services are more likely to attract a larger portion of the region's itinerant operations.

When compared to other public-use airports in the region, OJC offers a comprehensive array of general aviation services and amenities, including fueling services, aircraft maintenance and repair, ground handling, passenger and crew services, flight planning and support, aircraft storage and tiedowns, and administrative support. OJC also has a runway capable of accommodating small- to medium-sized business jets and offers down to ¾-mile instrument approach minimums. From a location standpoint, OJC is well-positioned to serve visitors in and around Johnson County and the southern Kansas City metropolitan area, particularly those with destinations in Overland Park, Olathe, and nearby communities. Limitations to the service area include MKC and LXT, as they are better situated to accommodate transient traffic accessing the central, northern, and eastern portions of the Kansas City metropolitan area.


REGISTERED & OJC BASED AIRCRAFT
Distance from OJC | FAA Registered | OJC Based Aircraft
0-10nm | 566 | 93
10-20nm | 483 | 10
20-30nm | 764 | 1
Total | 1,813 | 104*
*23 OJC based aircraft are registered to addresses beyond 30nm of OJC. Addresses for an additional 9 aircraft could not be located.
30 nm
20 nm
10 nm
Kansas City International Airport
Kansas City Downtown Airport
Lawrence Municipal Airport
Kansas City/Lee's Summit Regional Airport
Johnson County Executive Airport
Gardner Municipal Airport
New Century AirCenter
Lawrence Smith Memorial Airport
Miami County Airport
LEGEND
OJC Based Aircraft
FAA Registered Aircraft
Johnson County Executive Airport
NPIAS Airport
30-Minute Drive Time
County Boundary
State Boundary
Sources: ESRI Basemap Imagery 2024; FAA Registered Aircraft 2024; BasedAircraft.com
N
0
10
1" = 10nm

For the purposes of this study, OJC's primary service area is defined as the entirety of Johnson County, as it represents the geographic area from which the airport is expected to draw the greatest share of its based aircraft and local aviation demand. While Johnson County functions as the primary service area for OJC, the broader Kansas City MSA is also considered in evaluating population and socioeconomic trends because of the interconnected nature of the region's economy and transportation systems. The Kansas City MSA contributes additional aviation demand through its larger population base, regional business activity, and extensive employment market. While the Kansas City MSA influences demand at OJC, the Johnson County socioeconomic trends will provide a comprehensive and reasonable basis for assessing long-term aviation demand, evaluating regional growth trends, and supporting long-term forecasting efforts. As of September 2026, Johnson County contained 631 registered aircraft.

SERVICE AREA SOCIOECONOMICS

The socioeconomic characteristics of an airport's service area can provide valuable information from which to derive an understanding of the dynamics of growth near an airport. This information is crucial in determining aviation demand level requirements, as most aviation demand is directly related to the socioeconomic conditions of the surrounding region. Statistical analysis of population, employment, income, and gross regional product (GRP) trends outlines the economic strength of a region and can help determine the ability of the area to sustain a strong economy in the future. Socioeconomic data utilized in the development of new based aircraft and operations forecasts for OJC include historical and projected population, employment, per capita personal income, and GRP data from Woods & Poole Economics, Inc. **Table 2D** summarizes 10 years of historical data, as well as projections through 2046 for the service area (Johnson County) and the Kansas City MSA.

TABLE 2D: Socioeconomic Information

Year	POPULATION		EMPLOYMENT		PER CAPITA PERSONAL INCOME (2017 DOLLARS)		GROSS REGIONAL PRODUCT (MILLIONS OF 2017 DOLLARS)	
	Johnson County	KC MSA	Johnson County	KC MSA	Johnson County	KC MSA	Johnson County	KC MSA
Historical								
2016	588,461	2,120,733	457,926	1,367,858	$69,837	$50,475	$46,865	$130,248
2017	594,459	2,144,033	462,779	1,386,140	$71,248	$51,102	$48,087	$133,754
2018	601,612	2,163,842	473,224	1,406,700	$72,603	$51,750	$49,179	$136,109
2019	605,854	2,179,875	473,464	1,411,182	$74,391	$52,724	$50,527	$139,954
2020	611,129	2,195,241	463,880	1,378,665	$75,376	$54,887	$49,826	$137,913
2021	615,067	2,204,025	478,764	1,418,386	$77,054	$56,183	$50,324	$141,441
2022	619,693	2,210,616	492,525	1,455,360	$83,082	$56,673	$55,770	$148,500
2023	625,261	2,229,173	512,221	1,510,434	$76,028	$55,408	$53,961	$150,077
2024	630,832	2,253,287	515,890	1,519,496	$77,335	$56,169	$54,188	$152,192
2025	636,906	2,270,682	523,773	1,537,175	$79,593	$57,396	$55,821	$155,514
2026	643,107	2,282,759	531,564	1,554,498	$81,195	$58,519	$57,503	$158,905
Forecast								
2031	672,435	2,350,455	570,196	1,638,783	$89,196	$63,752	$66,421	$176,584
2036	699,284	2,408,625	607,831	1,718,187	$97,306	$69,054	$76,123	$195,387
2046	747,565	2,504,296	676,955	1,857,468	$114,048	$80,070	$97,520	$235,803
CAGRs								
2016–2026	0.9%	0.7%	1.5%	1.3%	1.5%	1.5%	2.1%	2.0%
2026–2046	0.8%	0.5%	1.2%	0.9%	1.7%	1.6%	2.7%	2.0%

CAGR = compound annual growth rate

Source: Woods & Poole Economics Inc., 2026

FORECASTING APPROACH

The development of aviation forecasts proceeds through 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 to not 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. A basic trend line projection is produced by fitting growth curves to historical data and extending them into the future. 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 direct relationship measure 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 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 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 become less reliable the farther one is from the base year, 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-gathering capabilities or underestimate 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 have had a direct impact on the level of aviation activity; nevertheless, trends emerge over time and provide the basis for airport planning.

Future facility requirements, such as general aviation hangars and terminals, ramp areas, and runways, 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

The following forecast analyses examine each of these aviation demand categories expected at OJC over the next 20 years. Each segment is examined individually and collectively to provide an understanding of the overall aviation activity at the airport through 2046.

PREVIOUS FORECASTS

Consideration is given to any forecasts of aviation demand for the airport that have recently been completed. For OJC, recently prepared forecasts reviewed are those in the current FAA TAF, which was published in March 2026, and the most recent airport master plan, which was completed in 2006 and used a base year of 2004 for forecasting.

On an annual basis, the FAA publishes the TAF for each airport included in the NPIAS. The TAF is a generalized forecast of airport activity 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 2006 master plan is now 20 years old and was prepared prior to significant events that impacted the aviation industry, such as the Great Recession of 2008 and the COVID-19 pandemic. Since that time, total operations and based aircraft have experienced growth, but at different rates than what was previously projected. **Table 2E** presents the 2026 TAF and 2006 master plan projections compared to actual data for OJC, as available.

It is important to note that the TAF based aircraft count is slightly higher than the current FAA-validated count from the based aircraft registry. The TAF reflects 142 based aircraft in 2026, while the registry reflects 137 FAA-validated based aircraft. Airport management has indicated that one of two based helicopters has recently relocated to another airport, bringing the validated based aircraft total to 136. The total operations count used in the TAF is more than 4,000 operations lower than the count reported by the OJC airport traffic control tower (ATCT); the tower reported 55,942 operations for the most recent 12-month period ending in July 2026. Once the forecasts presented in this chapter are approved by the FAA, the FAA could update the TAF to reflect the selected forecasts.

TABLE 2E: Previous Forecasts

Year	BASED AIRCRAFT			TOTAL OPERATIONS		
	FAA TAF	OJC MP 2006*	Actual	FAA TAF	OJC MP 2006*	Actual
2004	240	263	N/A	87,088	87,618	87,604
2005	234	267	N/A	89,235	88,955	88,451
2006	234	272	N/A	74,174	91,690	70,652
2007	234	280	N/A	70,438	93,089	67,617
2008	143	285	N/A	52,490	94,509	50,086
2009	143	290	N/A	54,184	95,950	53,327
2010	143	290	N/A	47,619	95,950	48,723
2011	143	294	N/A	49,707	97,349	50,977
2012	143	298	N/A	55,505	98,768	54,520
2013	111	302	N/A	51,687	100,207	51,602
2014	111	306	N/A	51,760	101,668	49,457
2015	110	310	N/A	46,207	103,150	46,246
2016	110	314	N/A	44,266	104,496	43,980
2017	63	317	N/A	37,882	105,859	37,050
2018	63	321	N/A	37,689	107,240	39,656
2019	63	325	N/A	38,555	108,640	35,343
2020	89	329	N/A	36,237	110,057	39,464
2021	136	330	N/A	43,684	110,747	43,895
2022	136	331	N/A	41,516	111,441	40,249
2023	137	333	N/A	50,578	112,140	54,619
2024	141	334	N/A	56,824	112,843	56,087
2025	141	335	N/A	51,626	113,550	52,635
2026	142	336	136	51,823	114,262	55,942**
2027	143	337	–	52,077	114,978	–
2028	144	339	–	52,330	115,699	–
2029	145	340	–	52,585	116,424	–
2030	146	341	–	52,840	117,154	–
2031	147	342	–	53,096	117,888	–
2032	148	344	–	53,353	118,627	–
2033	149	345	–	53,611	119,371	–
2034	150	346	–	53,870	120,119	–
2035	151	347	–	54,130	120,872	–
2036	152	349	–	54,391	121,630	–
2037	153	350	–	54,653	122,392	–
2038	154	351	–	54,916	123,159	–
2039	155	352	–	55,181	123,931	–
2040	156	354	–	55,448	124,708	–
2041	157	355	–	55,714	125,490	–
2042	158	356	–	55,982	126,277	–
2043	159	358	–	56,252	127,068	–
2044	160	359	–	56,522	127,865	–
2045	161	360	–	56,794	128,666	–
2046	162	361	–	57,068	129,473	–

*The 2006 master plan utilized a base year of 2004 with projections for 2010, 2015, and 2025. All other years included in the table have been interpolated or extrapolated.

**2026 operational data represent data from the most recent 12-month calendar period ending in July 2026.

Table 2E Sources: FAA Terminal Area Forecast, March 2026; Johnson County Executive Airport Master Plan, November 2006; FAA Based Aircraft Inventory Program (data not available prior to 2014); FAA OPSNET

GENERAL AVIATION FORECASTS

General aviation encompasses all portions of civil aviation except commercial service and military operations. To determine the types and sizes of facilities that should be planned to accommodate general aviation activity at OJC, certain elements of this activity must be forecasted. These indicators of general aviation demand include based aircraft, aircraft fleet mix, and annual operations.

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft for the airport, other demand indicators can be projected. The process of developing forecasts of based aircraft begins with an analysis of aircraft ownership in the primary general aviation service area through a review of historical aircraft registrations. An initial forecast of registered aircraft is developed and used as one data point to arrive at a based aircraft forecast for the airport.

BASED AIRCRAFT FORECAST

Forecasts of based aircraft may directly influence needed facilities and applicable design standards. The needed facilities may include hangars, aprons, taxilanes, etc. The applicable design standards may include separation distances and object clearing surfaces. The sizes and types of based aircraft are also an important consideration; the addition of numerous small aircraft may have no effect on design standards, while the addition of a few larger business jets can have a substantial impact on applicable design standards.

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

Based Aircraft Inventory

Documentation of the historical number of based aircraft at the airport was not available. The FAA did not require airports to report based aircraft numbers until recently, with the establishment of a based aircraft inventory (www.basedaircraft.com) in which it is possible to cross-reference based aircraft claimed by one airport with other airports. The FAA now utilizes this based aircraft inventory as a baseline for determining how many and what types of aircraft are based at any individual airport. This database evolves daily as aircraft are added or removed. It is the responsibility of the sponsor (owner) of each airport to input based aircraft information into the FAA database.

Airport staff have undertaken a comprehensive physical count and submitted the count to the FAA for validation. The most recent FAA validation of based aircraft at OJC occurred on November 14, 2025. As of October 2026, OJC identified 136 validated based aircraft. Of the validated based aircraft, there are 102 single-engine piston aircraft, seven single-engine turboprop aircraft, nine multi-engine piston aircraft, two multi-engine turboprops, 11 business jets, one helicopter, and four hot air balloons (classified as “other aircraft”).

Registered Aircraft Forecast

Aircraft ownership trends for the primary service area (Johnson County) typically dictate based aircraft trends for an airport. As such, a forecast of registered aircraft for the primary service area was developed for use as an input for the subsequent based aircraft forecast.

Table 2F presents the history of registered aircraft in the service area from 2016 through 2026. These figures are derived from the FAA aircraft registration database, which categorizes registered aircraft by county based on the zip code of the registered aircraft. Although this information generally provides a correlation to based aircraft, it is not uncommon for some aircraft to be registered in one county but based at an airport outside the county, or vice versa.

TABLE 2F: Registered Aircraft Fleet Mix in Johnson County, Kansas

Year	SEP	MEP	TP	Jet	H	Other*	Electric	UAV	Total
2016	431	74	28	82	15	42	0	11	683
2017	400	74	26	93	16	41	0	11	661
2018	389	70	27	89	13	43	0	11	642
2019	377	76	29	89	18	43	0	9	641
2020	365	70	31	87	18	41	0	9	621
2021	367	65	24	101	17	38	0	16	628
2022	357	66	20	97	12	37	0	11	600
2023	375	65	20	96	11	38	0	12	617
2024	378	69	25	103	10	31	0	14	630
2025	381	68	25	111	9	31	0	20	645
2026	369	64	22	115	8	31	0	22	631
5-year CAGR	**0.1%**	**-0.3%**	**-1.7%**	**2.6%**	**-14.0%**	**-4.0%**	**N/A**	**6.6%**	**0.1%**
10-year CAGR	**-1.5%**	**-1.4%**	**-2.4%**	**3.4%**	**-6.1%**	**-3.0%**	**N/A**	**7.2%**	**-0.8%**

CAGR = compound annual growth rate
H = helicopter
MEP = multi-engine piston
N/A = not applicable
SEP = single-engine piston
TP = turboprop
UAV = unmanned aerial vehicle

*Other includes gliders, ultralights, and experimental aircraft

Sources: FAA Aircraft Registry Database; FAA Census of U.S. Civil Aircraft

Over the 10-year period, aircraft registrations in the service area have generally been declining, with a 10-year compound annual growth rate (CAGR) of -0.8 percent; however, registrations have been trending up over the last five years, with 631 registered aircraft in the service area in 2026. The fleet mix breakout shows that single-piston aircraft accounted for 58 percent of registered aircraft in 2024, but jets and UAVs (drones) have experienced the strongest growth at 3.4 percent (jets) and 7.2 percent (drones) over the last 10 years.

Although there are no recently prepared forecasts for the service area regarding registered aircraft, one was prepared for this study using market share, population ratio, and historical growth rate/trend line projection methods. Several regression forecasts were also considered; these examined the correlation of registered aircraft with the service area population, employment, income, and GRP.

Table 2G details the results of this analysis, which considered the correlation between registered aircraft (dependent variable) and several independent variables, as described above. None of the resulting regressions produced an r^2 value greater than 0.716, indicating poor correlation; therefore, the regressions have been excluded from consideration.

TABLE 2G: Regression Analysis

Independent Variable	r^2
Time Series	0.712
Population	0.715
Employment	0.674
Income	0.709
Gross Regional Product	0.716

Source: Coffman Associates analysis

Trend Line/Historical Growth Rate Projections

Utilizing the last 10 years of registered aircraft data, a trend line projection was completed. This resulted in 539 registered aircraft by 2046 (-0.8 percent CAGR). A five-year trend was also prepared to consider the most recent trend. The five-year trend line projection resulted in positive growth, with 730 registered aircraft by 2046 (0.7 percent CAGR).

Over the last 10 years, the number of registered aircraft in the service area has a CAGR of -0.8 percent. By applying this CAGR to the current number of registered aircraft, a forecast emerged that resulted in 539 registered aircraft by 2046. The five-year historical growth rate of 0.1 percent was also applied to the base year count of registered aircraft; this resulted in 643 aircraft in the county by 2046.

Market Share of Kansas Based Aircraft

Consideration was also given to the ratio of service area registered aircraft compared to the total number of based aircraft, both historically and forecasted by the FAA to be in the State of Kansas. The county's 631 registered aircraft count in 2026 represents approximately 25.37 percent of all based aircraft in Kansas. If the county maintained this market share, it would result in 723 aircraft by 2046 (0.7 percent CAGR). Because the historical trend has fluctuated over the last 10 years, with some growth occurring over the last five years, an increasing market share projection was prepared that considered an increase in market share to 27.08 percent, which is the historical high market share. This resulted in a total county aircraft count of 772 by 2046 (1.0 percent CAGR). **Table 2H** shows the market share of the service area compared to Kansas totals.

TABLE 2H: Registered Aircraft Projections – Market Share of Kansas Based Aircraft

Year	Registered Aircraft	Kansas Based Aircraft	% of Total Kansas Based Aircraft
2016	683	2,593	26.34%
2017	661	2,473	26.73%
2018	642	2,456	26.14%
2019	641	2,410	26.60%

(Table continues)

TABLE 2H (continued): Registered Aircraft Projections – Market Share of Kansas Based Aircraft

Year	Registered Aircraft	Kansas Based Aircraft	% of Total Kansas Based Aircraft
2020	621	2,293	27.08%
2021	628	2,461	25.52%
2022	600	2,493	24.07%
2023	617	2,517	24.51%
2024	630	2,484	25.36%
2025	645	2,471	26.10%
2026	631	2,487	25.37%
Constant Market Share			
2031	652	2,568	25.37%
2036	672	2,649	25.37%
2046	723	2,851	25.37%
Increasing Market Share			
2031	663	2,568	25.80%
2036	695	2,649	26.23%
2046	772	2,851	27.08%

Sources: Kansas TAF, March 2026; Coffman Associates analysis

Ratio of Registered Aircraft to Population

The number of registered aircraft in an area often fluctuates based on population trends. In 2026, the service area had 0.98 registered aircraft per 1,000 residents. Over the past 10 years, this ratio has fluctuated similarly to the market share but has averaged 1.03 aircraft per 1,000 residents. Two projections have been prepared: one based on maintaining the current ratio constant over the forecast period, and an increasing ratio projection reflective of the historical high over the last 10 years (1.16). Maintaining the constant ratio (0.98) through 2046 resulted in 733 registered aircraft (0.8 percent CAGR). The increasing ratio projection resulted in 868 registered aircraft by 2046 (1.6 percent CAGR).

Registered Aircraft Forecast Summary

Table 2J summarizes the eight registered aircraft forecasts for Johnson County. Overall, registrations in the county have declined over the last 10 years; however, those numbers have been trending up in more recent years. Johnson County has outpaced the rest of the state and the Kansas City metropolitan area in socioeconomic growth, with projections indicating a slight moderation in terms of population and employment over the next 20 years but leading economic growth in both the state and the area. Despite fluctuating historical trends in aircraft ownership at the county level and somewhat stagnant growth at the state level, Johnson County will likely continue to experience growth in registered aircraft due to the county's positive socioeconomic outlook and ever-expanding industrial/business footprint. For these reasons, the increasing market share projection, with a CAGR of 1.0 percent, is viewed as the most realistic scenario. The selected registered aircraft forecast resulted in 663 registered aircraft in 2031, 695 in 2036, and 772 in 2046.

TABLE 2J: Registered Aircraft Forecast Summary

Projection	2026	2031	2036	2046	CAGR 2026–2046
Constant Market Share	631	652	672	723	0.7%
Increasing Market Share	**631**	**663**	**695**	**772**	**1.0%**
Constant Ratio Projection per 1,000 County Residents	631	660	686	733	0.8%
Increasing Ratio Projection per 1,000 County Residents	631	690	749	868	1.6%
10-Year Historical Registered Aircraft Growth Rate	631	607	583	539	-0.8%
5-Year Historical Registered Aircraft Growth Rate	631	634	637	643	0.1%
5-Year Trend Line Projection	631	660	749	868	1.6%
10-Year Trend Line Projection	631	597	578	539	-0.8%

Boldface indicates selected forecast.

CAGR = compound annual growth rate

Source: Coffman Associates analysis

Based Aircraft Market Share of Registered Aircraft Forecast

Utilizing the forecast of registered aircraft in Johnson County, a market share forecast of based aircraft at OJC was developed. In 2026, the 136 validated based aircraft at OJC represented 21.6 percent of the aircraft registered in the county. By maintaining this market share constant through the planning years, a forecast emerged that resulted in 166 based aircraft by 2046 (1.0 percent CAGR). Reliable historical validated based aircraft data were not available; however, it is reasonable to assume that based aircraft at OJC will continue to grow, based on socioeconomic growth characteristics of the service area and increasing operational trends, so two increasing market share forecasts were prepared. The first of these is considered a high-range forecast and assumes OJC will account for 30.0 percent of the county's market share by 2046. This resulted in 232 based aircraft by the end of the plan period, which is reflective of a 2.7 percent CAGR. A more conservative increase in market share was also considered and assumed 25.0 percent of the market share by 2046. This resulted in 193 based aircraft by 2046 (1.8 percent CAGR). **Table 2K** presents the three market share projections.

TABLE 2K: Based Aircraft Market Share of Registered Aircraft Forecast

Year	OJC Based Aircraft	Johnson County Registered Aircraft	OJC Market Share %
2026	136	631	21.6%
Constant Market Share			
2031	143	663	21.6%
2036	150	695	21.6%
2046	166	772	21.6%
CAGR	**1.0%**	**1.0%**	**–**
Increasing Market Share – High-Range Scenario			
2031	157	663	23.7%
2036	179	695	25.8%
2046	232	772	30.0%
CAGR	**2.7%**	**1.0%**	**–**
Increasing Market Share – Mid-Range Scenario			
2031	149	663	22.4%
2036	162	695	23.3%
2046	193	772	25.0%
CAGR	**1.8%**	**1.0%**	**–**

Sources: basedaircraft.com; Coffman Associates analysis

State Growth Rate Projection

Given that based aircraft within the state are projected to grow over the planning period, a growth rate projection utilizing the state's 20-year CAGR of 0.7 percent has also been considered. When the 20-year CAGR was applied to OJC based aircraft, a forecast emerged that yielded 156 based aircraft by 2046.

Socioeconomic Growth Projections

Based aircraft growth is often related to population and economic activity of the service area. For this reason, based aircraft projections tied to projected growth in population, employment, income, and GRP for the service area were also prepared. CAGRs for these variables through 2046 are 0.8 percent for population, 1.2 percent for employment, 1.7 percent for income, and 2.7 percent for GRP. Applying these CAGRs resulted in 158 based aircraft for population, 173 for employment, 191 for income, and 231 for GRP by 2046.

Regression Analysis

Regression analysis can only be performed if historical data are available. As historical based aircraft records for OJC were not available, forecasts based on regression analysis were not prepared.

Selected Based Aircraft Forecast

Selecting a based aircraft forecast is ultimately based on the judgment of the forecast analyst. A selected forecast should be reasonable and based on a sound methodology. The methodology presented in this analysis examined the history of aircraft ownership in the service area (Johnson County). Utilizing the selected registered aircraft projection, a market share analysis was conducted based on maintaining a constant market share and increasing market shares over the forecast period. Additional projections considered the FAA TAF's projection for based aircraft growth in the state, as well as growth rates based on key socioeconomic indicators (population, employment, income, and GRP). These seven projections are summarized in **Table 2L** and the OJC TAF forecast is included as a point of comparison.

TABLE 2L: Based Aircraft Forecast Summary

Projection	2026	2031	2036	2046	CAGR 2026–2046
OJC TAF	142	147	152	162	0.7%
State Based Aircraft Growth Rate	**136**	141	146	156	0.7%
Constant Market Share		143	150	166	1.0%
Increasing Market Share – Mid-Range		**149**	**162**	**193**	**1.8%**
Increasing Market Share – High-Range		157	179	232	2.7%
Service Area Population Growth Rate		141	147	158	0.8%
Service Area Employment Growth Rate		144	153	173	1.2%
Service Area Income Growth Rate		148	161	191	1.7%
Service Area GRP Growth Rate		155	177	231	2.7%

Boldface indicates selected forecast.

CAGR = compound annual growth rate

Sources: FAA TAF; basedaircraft.com; Coffman Associates analysis

Future aircraft basing at the airport will depend on several factors, including the state of the economy, fuel costs, available facilities, competing airports, and hangar development potential. Forecasts consider projections for a strong growing local economy, as well as reasonable development of airport facilities necessary to accommodate aviation demand. OJC will not experience significant based aircraft growth unless new hangar facilities are constructed. Competing airports will play a role in deciding demand; however, OJC should fare well in this competition, as it is served by a runway system capable of handling a wide variety general aviation aircraft, including small to medium business jets, and offers a wide array of services and amenities.

Consideration must also be given to the current and future aviation conditions at the airport. OJC is in a desirable location southwest of the Kansas City metropolitan area and is well-positioned to serve Johnson County and neighboring communities that comprise the metropolitan area. OJC is also supported by an excellent road network, with convenient access to Interstate 35 and U.S. Route 69. Finally, recent development and redevelopment on the airfield are indicative of strong demand by airport users, a trend that is likely to continue.

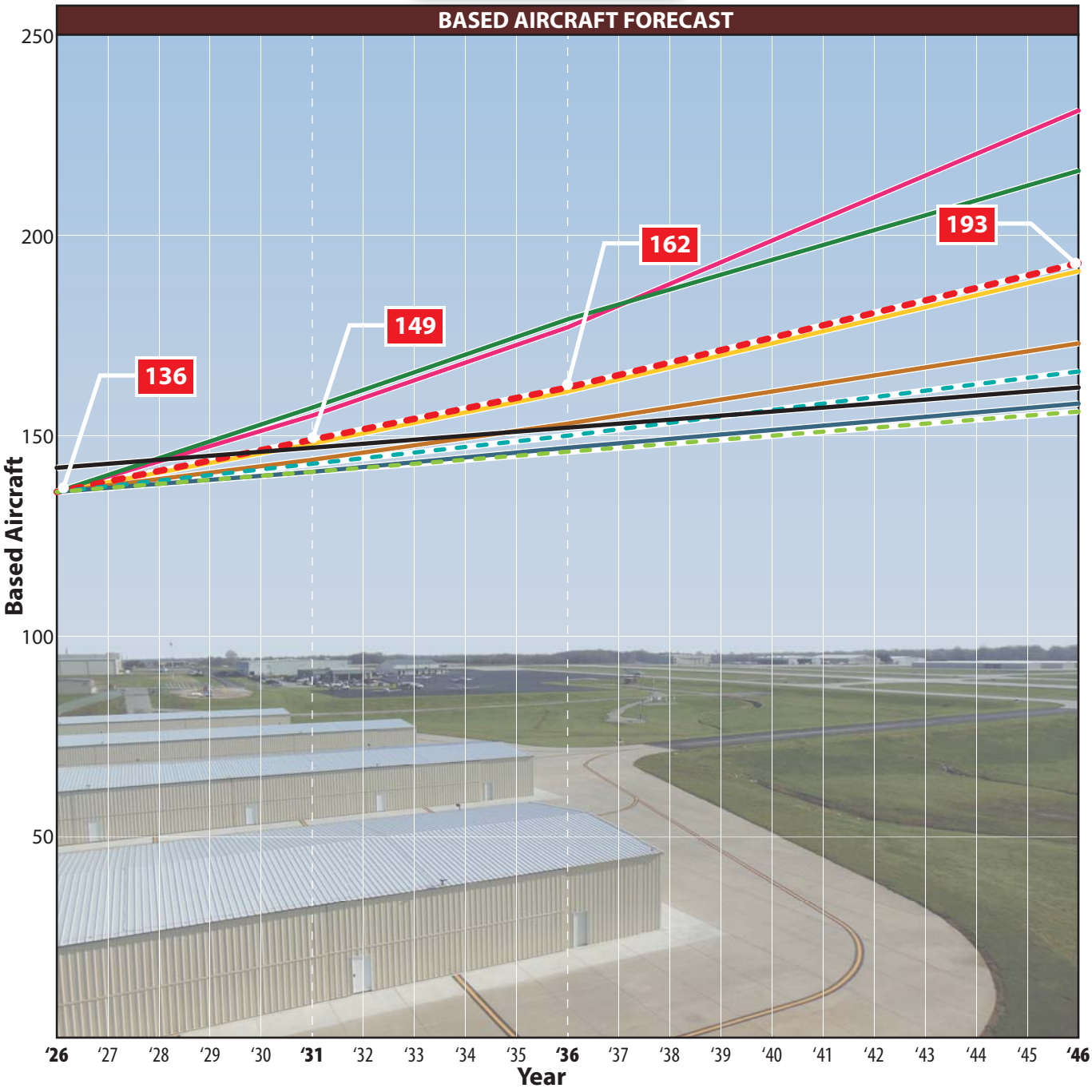
The potential for available hangar space is not the only factor in future based aircraft levels. Economic projections for Johnson County are expected to outpace those within the Kansas City metropolitan area, and the county has consistently ranked as one of the fastest-growing in the state. These indicators suggest strong demand for aviation activity at OJC now and in the future. For these reasons, the mid-range increasing market share projection has been selected as the preferred forecast, with 149 based aircraft projected by 2031, 162 by 2036, and 193 by 2046 (1.8 percent CAGR). The selected forecast is reasonably optimistic and assumes OJC can increase its market share of registered aircraft in the county with expanded facilities and continued socioeconomic growth of the local area will drive demand for more based aircraft.

Exhibit 2C presents each of the based aircraft forecasts that comprise the planning envelope.

BASED AIRCRAFT FLEET MIX FORECAST

It is important to understand the current and projected based aircraft fleet mix at an airport to ensure the proper planning of facilities. For example, the various separation requirements and obstacle clearing surfaces for a particular area will be based on whether the area is planned to be utilized by small piston aircraft or large business jets.

The current based aircraft fleet mix consists of 102 single-engine piston aircraft, seven single-engine turboprop aircraft, nine multi-engine piston aircraft, two multi-engine turboprops, 11 jets, one helicopter, and four hot air balloons. As a general aviation reliever airport with significant levels of recreational, flight training, and corporate aviation activity, OJC should continue to maintain a diverse fleet mix. The forecasted growth trends in the OJC based aircraft fleet mix take FAA projections of the national general aviation fleet mix into consideration. Growth is expected in all categories except multi-engine pistons, which are projected to decline nationally over the next 20 years as these aircraft are retired from the fleet.



LEGEND

Projection	CAGR*	Projection	CAGR*
OJC TAF	0.70%	Increasing Market Share – High	2.71%
State Based Aircraft Growth Rate	0.69%	Service Area Population Growth Rate	0.75%
Constant Market Share	1.00%	Service Area Employment Growth Rate	1.21%
Increasing Market Share – Mid	**1.77%**	Service Area Income Growth Rate	1.71%
		Service Area GRP Growth Rate	2.68%

**Compound Annual Growth Rate*

Selected Forecast

Sources: FAA TAF; BasedAircraft.com; Coffman Associates Analysis

OJC is home to a Pilatus-authorized maintenance, repair, and overhaul (MRO) facility, which provides specialized support for Pilatus aircraft and serves as a strong attractor for both Pilatus operators and turbine-powered aircraft activity. This unique service offering enhances the airport's appeal as a regional hub for corporate and business aviation, and when coupled with Johnson County's strong socioeconomic outlook, growing business base, and high-income demographics, turboprops and business jets are expected to represent the strongest growth segments of the based aircraft fleet at OJC. These aircraft types align with the airport's role as a national reliever and reflect both national fleet trends and local demand for corporate air transportation.

Table 2M presents the forecasted fleet mix for based aircraft at OJC.

TABLE 2M: Based Aircraft Fleet Mix

Aircraft Type	2026	Percent	2031	Percent	2036	Percent	2046	Percent
Single-Engine Piston	102	75.0%	110	73.8%	118	72.8%	140	72.5%
Single-Engine Turboprop	7	5.1%	10	6.7%	13	8.0%	17	8.8%
Multi-Engine Piston	9	6.6%	7	4.7%	5	3.1%	2	1.0%
Multi-Engine Turboprop	2	1.5%	3	2.0%	4	2.5%	6	3.1%
Jet	11	8.1%	14	9.4%	16	9.9%	22	11.4%
Helicopter	1	0.7%	1	0.7%	2	1.2%	2	1.0%
Other	4	2.9%	4	2.7%	4	2.5%	4	2.1%
Total:	**136**	**100%**	**149**	**100%**	**162**	**100%**	**193**	**100%**

Sources: FAA Based Aircraft Registry; Coffman Associates analysis

OPERATIONS FORECASTS

Operations at OJC are classified as 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 Federal Aviation Regulations (FAR) Part 135, otherwise known as for-hire or on-demand activity. Air taxi operations typically include commuter, air cargo, air ambulance, and many fractional ownership operations. Military operations include those conducted by the branches of the U.S. military. Air carrier is an additional category of operations conducted by large aircraft with 60 or more passenger seats. These flights are infrequent at OJC; therefore, air carrier operations are not included as part of the operations forecast.

It should be noted that the FAA's forecast of air taxi operations trends lower in the short term and returns to growth after 2028 due to ongoing changes to the scheduled airline aircraft fleet mix. Airlines are transitioning away from 50-seat regional jets that are counted under the air taxi category to larger jets with seating capacities of 60 seats or more that are counted under the air carrier category. This airline fleet mix transition should have no impact on unscheduled OJC air taxi operations.

Aircraft operations are further classified as local and itinerant. A local operation is a takeoff or landing performed by an aircraft operating within sight of an airport or executing simulated approaches or touch-and-go operations at an airport. Local operations are generally characterized by training activities. Itinerant operations are those performed by aircraft with specific origins or destinations 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.

Several methods have been employed to develop a reasonable planning envelope of future potential aircraft operations. The following sections present several new operations forecasts. Counts from the OJC ATCT were utilized in this analysis. **Table 2N** shows the historical operations data for OJC since 2006.

TABLE 2N: Historical Operations Data

Calendar Year	ITINERANT					LOCAL			Total Operations
	Air Carrier	Air Taxi	General Aviation	Military	Subtotal	General Aviation	Military	Subtotal	
2006	0	404	45,811	56	46,271	24,335	46	24,381	70,652
2007	0	322	42,125	45	42,492	25,045	80	25,125	67,617
2008	27	614	32,820	65	33,526	16,443	117	16,560	50,086
2009	32	530	32,058	198	32,818	20,485	24	20,509	53,327
2010	0	468	30,550	151	31,169	17,528	26	17,554	48,723
2011	0	511	31,046	99	31,656	19,273	48	19,321	50,977
2012	1	474	31,168	126	31,769	22,695	56	22,751	54,520
2013	0	582	28,963	48	29,593	22,003	6	22,009	51,602
2014	0	619	28,006	38	28,663	20,742	52	20,794	49,457
2015	0	557	27,841	58	28,456	17,752	38	17,790	46,246
2016	0	687	26,111	58	26,856	16,996	128	17,124	43,980
2017	0	834	21,528	47	22,409	14,535	106	14,641	37,050
2018	0	707	22,552	45	23,304	16,334	18	16,352	39,656
2019	0	448	21,965	27	22,440	12,879	24	12,903	35,343
2020	0	602	22,807	30	23,439	15,981	44	16,025	39,464
2021	0	763	25,254	33	26,050	17,831	14	17,845	43,895
2022	0	843	23,414	23	24,280	15,959	10	15,969	40,249
2023	0	916	28,891	76	29,883	24,712	24	24,736	54,619
2024	0	1,463	27,995	34	29,492	26,557	38	26,595	56,087
2025	0	916	28,543	38	29,497	23,114	24	23,138	52,635
2026*	0	990	30,168	16	31,174	24,760	8	24,768	55,942
20-Year CAGR	**N/A**	**4.6%**	**-2.1%**	**-6.1%**	**-2.0%**	**0.1%**	**-8.4%**	**0.1%**	**-1.2%**
10-Year CAGR	**N/A**	**3.7%**	**1.5%**	**-12.1%**	**1.5%**	**3.8%**	**-24.2%**	**3.8%**	**2.4%**

*2026 data represent a 12-month period ending July 2026.

Source: FAA Operations and Performance Data (OPSNET)

TAF Growth Rate Projections

For the 20-year planning period, the OJC TAF indicates CAGRs of 0.69 percent for itinerant GA operations, 0.15 percent for local GA operations, and 1.46 percent for air taxi operations. Projections based on these forecasted growth rates were applied to generate forecasts that resulted in 34,600 itinerant GA, 25,500 local GA, and 1,320 air taxi operations by 2046.

Market Share Projections

Market share analysis compares known historical and forecasted data points to arrive at a trend for the unknown variable (OJC operations). The first forecast considers the current market share of GA (itinerant and local) and air taxi operations at the airport compared to the FAA's forecast for operations for the State of Kansas.

For 2026, OJC accounts for 5.56 percent of Kansas itinerant GA operations, 3.70 percent of local GA operations, and 2.22 percent of air taxi operations. By carrying these percentages forward through the planning horizon, a constant market share forecast emerged; **Table 2P** shows the results.

TABLE 2P: Operations Market Share Projections

Year	GENERAL AVIATION ITINERANT			GENERAL AVIATION LOCAL			AIR TAXI		
	OJC	Kansas	OJC Market %	OJC	Kansas	OJC Market %	OJC	Kansas	OJC Market %
2016	26,111	546,533	4.78%	16,996	675,167	2.52%	687	80,151	0.86%
2017	21,528	529,068	4.07%	14,535	643,091	2.26%	834	75,105	1.11%
2018	22,552	518,662	4.35%	16,334	639,530	2.55%	707	71,615	0.99%
2019	21,965	517,454	4.24%	12,879	645,009	2.00%	448	71,581	0.63%
2020	22,807	499,212	4.57%	15,981	634,457	2.52%	602	61,186	0.98%
2021	25,254	515,509	4.90%	17,831	665,183	2.68%	763	71,660	1.06%
2022	23,414	523,891	4.47%	15,959	676,485	2.36%	843	74,766	1.13%
2023	28,891	524,943	5.50%	24,712	684,950	3.61%	916	67,884	1.35%
2024	27,995	532,706	5.26%	26,557	699,916	3.79%	1,463	57,656	2.54%
2025	28,543	537,959	5.31%	23,114	668,636	3.46%	916	46,690	1.96%
2026*	30,168	542,692	5.56%	24,760	669,792	3.70%	990	44,691	2.22%
5-Year CAGR	**5.20%**	**0.71%**	**4.46%**	**9.18%**	**-0.20%**	**9.40%**	**3.27%**	**-9.78%**	**14.46%**
10-Year CAGR	**1.45%**	**-0.07%**	**1.53%**	**3.83%**	**-0.08%**	**3.92%**	**3.72%**	**-5.67%**	**9.96%**
Constant Market Share – Low-Range									
2031	30,500	548,702	5.56%	25,000	675,671	3.70%	970	43,798	2.22%
2036	30,800	553,709	5.56%	25,100	678,146	3.70%	990	44,751	2.22%
2046	31,400	564,414	5.56%	25,300	683,275	3.70%	1,030	46,677	2.22%
CAGR	**0.20%**	**0.20%**	**–**	**0.11%**	**0.10%**	**–**	**0.20%**	**0.22%**	**–**
Increasing Market Share – Mid-Range									
2031	31,800	548,702	5.80%	28,600	675,671	4.23%	1,340	43,798	3.07%
2036	33,500	553,709	6.05%	32,300	678,146	4.76%	1,760	44,751	3.92%
2046	36,900	564,414	6.54%	39,800	683,275	5.83%	2,630	46,677	5.63%
CAGR	**1.01%**	**0.20%**	**–**	**2.40%**	**0.10%**	**–**	**5.01%**	**0.22%**	**–**
Increasing Market Share – High-Range									
2031	33,200	548,702	6.05%	32,200	675,671	4.77%	2,350	43,798	5.36%
2036	36,200	553,709	6.54%	39,600	678,146	5.83%	3,810	44,751	8.51%
2046	42,500	564,414	7.53%	54,500	683,275	7.97%	6,910	46,677	14.80%
CAGR	**1.73%**	**0.20%**	**–**	**4.02%**	**0.10%**	**–**	**10.20%**	**0.22%**	**–**

*2026 data represent a 12-month period ending July 2026.

CAGR = compound annual growth rate

Sources: FAA TAF (Kansas Operations); OJC ATCT counts (Historical OJC Operations); Coffman Associates analysis (OJC Projections)

The constant market share is considered a low-range projection, as historical data indicate OJC's market share has grown for each operational category over the past 10 years.

A mid-range increasing market share projection was prepared reflecting historical growth trends that increased OJC's market share of itinerant GA operations to 6.54 percent and the market share of local GA operations to 5.83 percent, while the air taxi market share was increased to 5.63 percent by 2046. Each of these forecasts reflects moderate historical market share increases. The results of these mid-range projections are also shown in **Table 2P**.

High-range increasing market share projections were also prepared. For itinerant GA, the 2046 market share was taken to 7.53 percent, which assumes the historical 10-year market share growth rate (1.53 percent) will be maintained for the planning years of the forecast. The 10-year historical market share growth rate was also applied to local GA operations (3.92 percent growth) and air taxi operations (9.96 percent growth). By maintaining these growth rates for the planning years of the forecast, the GA local operations market share increased to 7.53 percent, while the air taxi market share increased to 14.80 percent by 2046. The results of the high-range projections are shown in **Table 2P**.

Trend Line Projections

Utilizing the last 10 years of operations data, a trend line projection was prepared for itinerant and local GA and air taxi operations. The 10-year trend line forecast for itinerant GA resulted in 48,000 operations by the end of the planning period, while local GA operations were forecasted to increase to 43,400 and air taxi operations were forecasted to increase to 2,040 operations by 2046.

Regression Analysis

Several forecasts were prepared utilizing historical operations data and the regression model. Independent variables examined included GA and air taxi operations correlated to population, employment, income, GRP, and time series regressions. In the case of itinerant and local GA operations, the best correlation was the employment regression, which resulted in r^2 values of 0.701 (itinerant GA) and 0.763 (local GA). The employment regression also had the best correlation for air taxi operations, with an r^2 value of 0.462.

As previously described, correlation values over 0.95 indicate good predictive reliability. The values for each regression were well below the reliability mark; as such, they have not been included in the forecast envelope.

General Aviation and Air Taxi Operations Forecast Summary

Table 2Q summarizes the projections prepared for itinerant and local GA operations and air taxi operations at OJC. The FAA's TAF projections for OJC are included for comparison purposes.

TABLE 2Q: Operations Forecast Summary

Projection	2026	2031	2036	2046	CAGR 2026–2046
Itinerant General Aviation					
Constant Market Share – Low-Range		30,500	30,800	31,400	0.20%
Increasing Market Share – Mid-Range		**31,800**	**33,500**	**36,900**	**1.01%**
Increasing Market Share – High-Range	**30,168**	33,200	36,200	42,500	1.73%
TAF Growth Rate Projection		31,200	32,300	34,600	0.69%
10-Year Trend Line Projection		32,600	36,200	43,400	1.84%
OJC TAF	28,951	29,970	31,025	33,248	0.69%
Local General Aviation					
Constant Market Share – Low-Range		25,000	25,100	25,300	0.11%
Increasing Market Share – Mid-Range		**28,600**	**32,300**	**39,800**	**2.40%**
Increasing Market Share – High-Range	**24,760**	32,200	39,600	54,500	4.02%
TAF Growth Rate Projection		24,900	25,100	25,500	0.15%
10-Year Trend Line Projection		30,700	36,400	48,000	3.37%
OJC TAF	21,945	22,108	22,272	22,604	0.15%
Air Taxi					
Constant Market Share – Low-Range		970	990	1,030	0.20%
Increasing Market Share – Mid-Range		**1,340**	**1,760**	**2,630**	**5.01%**
Increasing Market Share – High-Range	**990**	2,350	3,810	6,910	10.20%
TAF Growth Rate Projection		1,060	1,140	1,320	1.45%
10-Year Trend Line Projection		1,320	1,560	2,040	3.68%
OJC TAF	861	952	1,028	1,150	1.46%

Boldface indicates selected forecast.

CAGR = compound annual growth rate

Source: Coffman Associates analysis

Market trends indicate that GA and air taxi operations will continue to grow nationally and in the State of Kansas. Airlines are developing new programs to grow the next generation of pilots, which has led to the creation of new flight schools and flight training programs, which OJC already supports.

Airport management is committed to developing new facilities and services to maintain OJC's position as one of the best choices for airport services in the region for all GA users, including the growing corporate/business aircraft market. Socioeconomic indicators suggest that OJC's service area will continue to thrive over the planning period, bringing new business opportunities and potential users and tenants.

Operations at OJC have historically experienced some fluctuation but have had an overall growing trend, particularly within the last five years. The selected forecasts approach growth realistically and anticipate moderate operations growth levels over the planning period. Historical trends indicate OJC's operations count is increasing, and there is no reason to expect that trend to change in the future. Socioeconomic indicators suggest OJC's service area is positioned for strong growth. As discussed in the based aircraft section, there is strong demand for new based aircraft at OJC, including demand for business jets and turboprops, which would support operational growth across the GA and air taxi categories. For these reasons, the mid-range increasing market share projections of local and itinerant general aviation operations and air taxi operations have been selected. These projections are above the FAA TAF projections for OJC, but still within a reasonable range considering the development potential of the airport. For each operational segment, these numbers reflect the growing nature of Johnson County and the wider Kansas City metropolitan area.

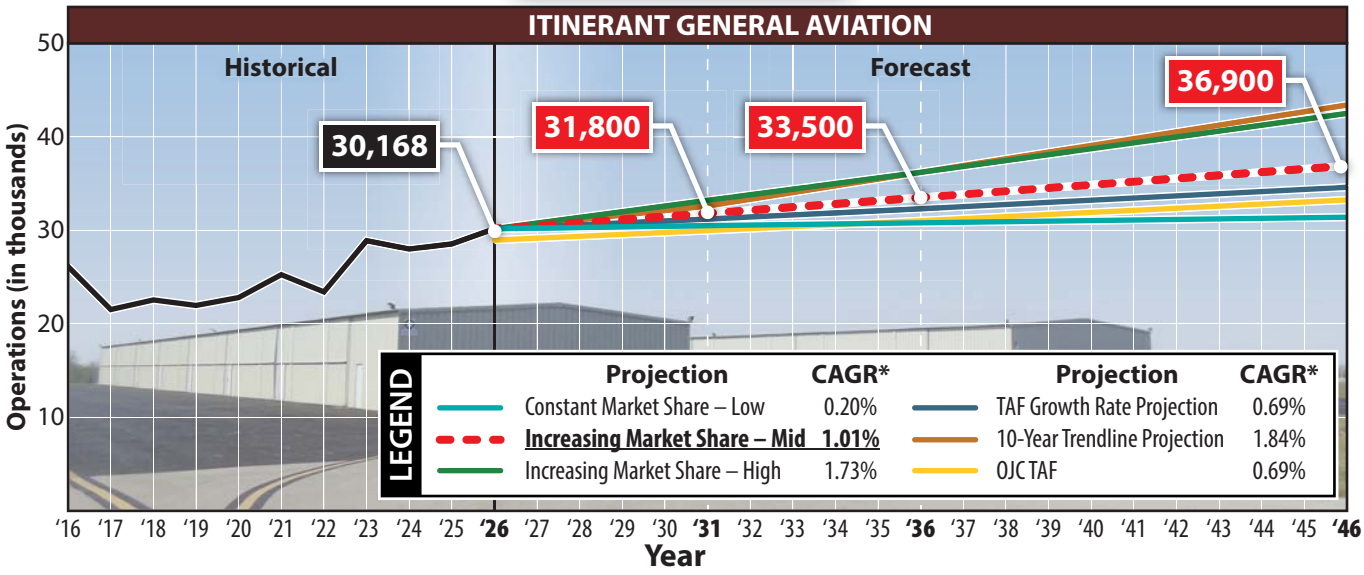
Exhibit 2D graphically represents the operations projections that comprise the planning envelope.

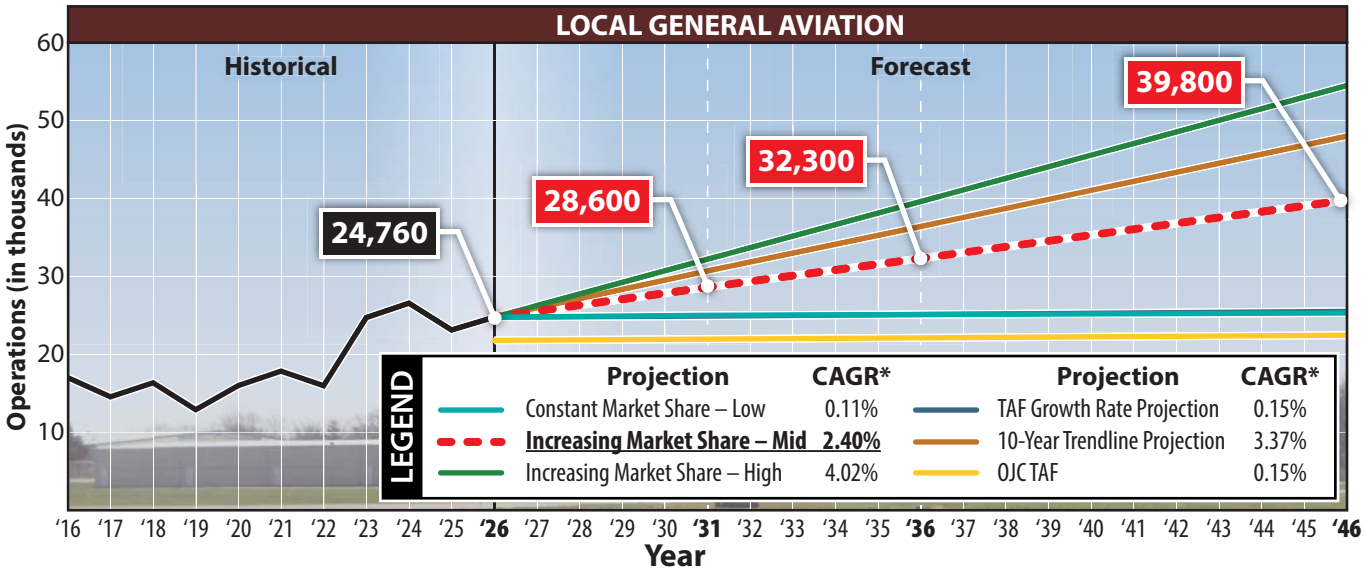
Military Operations Forecast

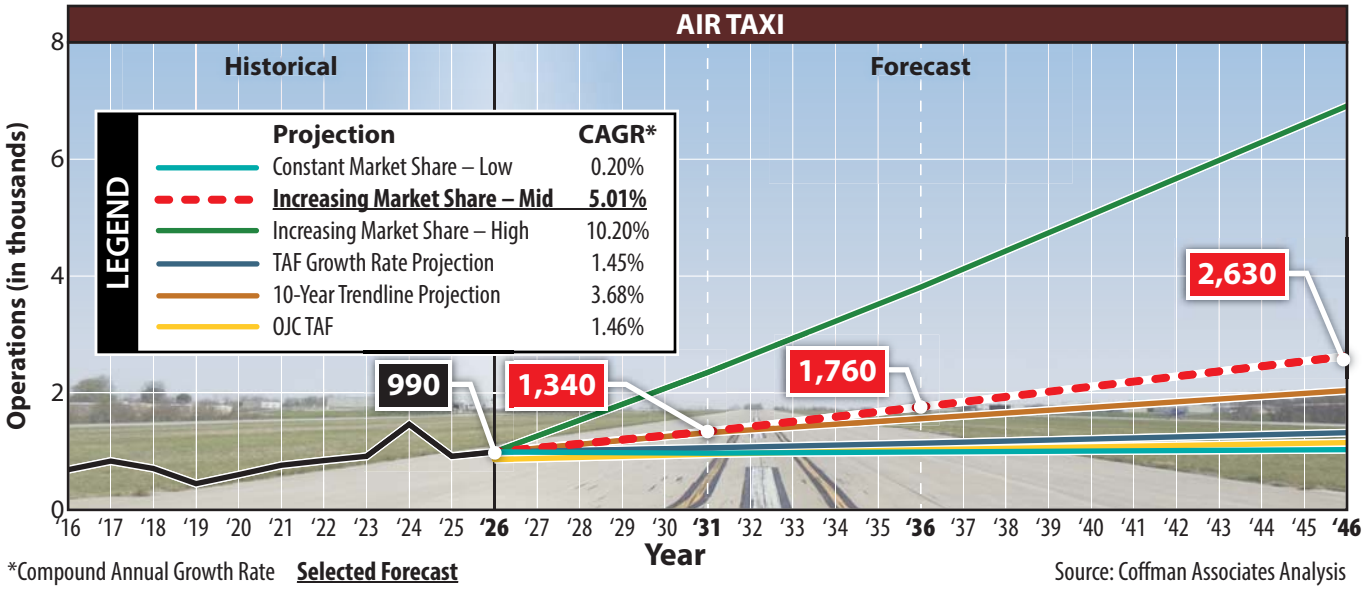
Military aircraft can (and do) utilize civilian airports across the country, including OJC. Forecasts of military activity are inherently difficult to predict because of the national security nature of military operations and the fact that such missions can change without notice; thus, it is typical for the FAA to use a flatline forecast for military operations. For OJC, the FAA TAF projects itinerant military operations to remain static at 36 and local operations to remain at 30 over the forecast period. These TAF estimates are also utilized for the master plan forecast.

Total Operations Forecast Summary

Table 2R presents the summary of the selected operations forecasts. The summary table details the culmination of each selected operations forecast. Over the planning horizon, total OJC operations are projected to grow from 55,942 in 2026 to 79,396 by 2046 at a CAGR of 1.77 percent.







*Compound Annual Growth Rate **Selected Forecast**

Source: Coffman Associates Analysis

TABLE 2R: Total Operations Forecast Summary

Year	ITINERANT					LOCAL			Total Operations
	Air Carrier	Air Taxi	GA	Military	Total	GA	Military	Total	
2026*	0	990	30,168	16	31,174	24,760	8	24,768	55,942
2031	0	1,340	31,800	36	33,176	28,600	30	28,630	61,806
2036	0	1,760	33,500	36	35,296	32,300	30	32,330	67,626
2041	0	2,630	36,900	36	39,566	39,800	30	39,830	79,396
CAGR	**0.00%**	**5.01%**	**1.01%**	**4.14%**	**1.20%**	**2.40%**	**6.83%**	**2.40%**	**1.77%**

*Data represent a 12-month period ending July 2026.

Note: Totals have been rounded.

CAGR = compound annual growth rate

Source: Coffman Associates analysis

PEAKING CHARACTERISTICS

Peaking characteristics play an important role in determining airport capacity and facility requirements. The FAA's TFMSC data collected by the ATCT were examined to identify peaking periods. The peaking periods used to develop facility requirements are described below.

- **Peak month:** During the peak month in 2026 (July), 5,669 operations were recorded, or 10.1 percent of total operations for the 12-month period ending in July 2026.
- **Design day:** The design day is calculated by dividing the peak month by the number of days of the month. The peak month typically occurs during a month with 31 days, so design day was calculated by dividing the peak month by 31.
- **Busy day:** The busy day is calculated by averaging the busiest day each week during the peak month. In this case, the busiest day each week of the month of July 2026 (peak month of the base year) represented approximately 20.4 percent of the week's total operations.
- **Design hour:** The design hour was calculated by identifying the average hourly operations during design days of the peak month. Calculations exclude overnight hours (between 11:00 p.m. and 6:00 a.m.), which would skew down the design hour. The design hour during design days of July 2026 represented 5.9 percent of design day operations.

Peak period projections based on the baseline calculations are included in **Table 2S**.

TABLE 2S: Peak Period Forecasts

	2026	2031	2036	2046
Annual Operations	55,942	61,806	67,626	79,396
Peak Month	5,669	6,263	6,853	8,046
Design Day	183	202	221	260
Busy Day	262	289	316	372
Design Hour	11	12	13	15

Source: Coffman Associates analysis

FORECAST SUMMARY

This chapter has outlined the various activity levels that might reasonably be anticipated over the planning period. **Exhibit 2E** presents a summary of the aviation forecasts prepared in this chapter. The base year for these forecasts is 2026 with a 20-year planning horizon to 2046. The primary aviation demand indicators are based aircraft and operations. The number of based aircraft at OJC is forecasted to increase from 136 in 2026 to 193 by 2046 (1.77 percent CAGR). Total operations at OJC are forecasted to increase from 55,942 in 2026 to 79,396 by 2046 (1.77 percent CAGR).

Projections of aviation demand will be influenced by unforeseen factors and events in the future; therefore, it is not reasonable to assume 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, the 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

When reviewing airport master plan forecasts, the FAA compares them to the most recent TAF for consistency. To be consistent with the TAF, the master plan forecasts should differ by 10 percent or less in the first five years and 15 percent or less in the 10-year timeframe. If the forecasts are not consistent with these parameters, further discussion with the local FAA Airports District Office (ADO) will be required. Ultimately, the forecasts may be forwarded to the FAA headquarters in Washington, D.C., for further review. Deviation from these thresholds will require specific local documentation.

Table 2T presents a comparison of the master plan forecasts and the FAA TAF (published in March 2026) for total operations and based aircraft. The percentage difference is the absolute value of the difference between the two numbers divided by the average of the two numbers. The base year was established as 2026.

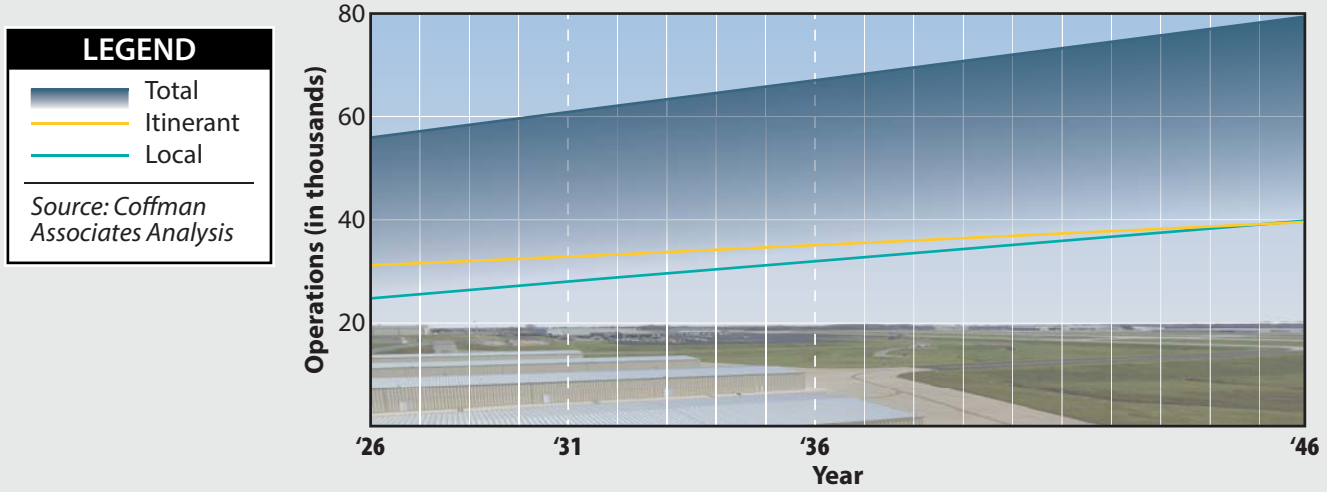
TABLE 2T: Comparison of Master Plan Forecasts to FAA TAF

	2026	2031	2036	2046	CAGR
Total Operations					
Master Plan Forecast	55,942	61,806	67,626	79,396	1.77%
2026 OJC TAF	51,823	53,096	54,391	57,068	0.48%
% Difference from TAF	7.64%	15.16%	21.69%	32.72%	–
Adjusted TAF	55,942	57,307	58,705	61,604	0.48%
% Difference from Adjusted TAF	0.00%	7.55%	14.12%	25.24%	–
Based Aircraft					
Master Plan Forecast	136	149	162	193	1.77%
2026 OJC TAF	142	147	152	162	0.66%
% Difference from TAF	4.32%	1.35%	6.37%	17.46%	–
Adjusted TAF	136	141	145	155	0.66%
% Difference from Adjusted TAF	0.00%	5.83%	10.89%	21.74%	–

TAF = FAA Terminal Area Forecast (March 2026)

	ACTUAL	FORECAST		
	2026	2031	2036	2046
OPERATIONS				
Itinerant Operations				
Air Carrier	*0*	*0*	*0*	*0*
Air Taxi	*990*	*1,340*	*1,760*	*2,630*
General Aviation	*30,168*	*31,800*	*33,500*	*36,900*
Military	*16*	*36*	*36*	*36*
Itinerant Subtotal	**31,174**	**33,176**	**35,296**	**39,566**
Local Operations				
General Aviation	*24,760*	*28,600*	*32,300*	*39,800*
Military	*8*	*30*	*30*	*30*
Local Subtotal	**24,768**	**28,630**	**32,330**	**39,830**
Total Operations	**55,942**	**61,806**	**67,626**	**79,396**
PEAKING				
Peak Month	**5,669**	**6,263**	**6,853**	**8,046**
Design Day	**183**	**202**	**221**	**260**
Busy Day	**262**	**289**	**316**	**372**
Design Hour	**11**	**12**	**13**	**15**
BASED AIRCRAFT				
Single-Engine Piston	**102**	**110**	**118**	**140**
Single-Engine Turboprop	**7**	**10**	**13**	**17**
Multi-Engine Piston	**9**	**7**	**5**	**2**
Multi-Engine Turboprop	**2**	**3**	**4**	**6**
Jet	**11**	**14**	**16**	**22**
Helicopter	**1**	**1**	**2**	**2**
Glider/Other	**4**	**4**	**4**	**4**
Total Based Aircraft	**136**	**149**	**162**	**193**

OPERATIONS



When comparing the planning forecasts to the TAF for OJC, the operations must be adjusted to account for the tower operations data that reflect a true baseline of annual operations at the airport. Over the course of the 2026 base year, the ATCT documented a total of 55,942 operations. The adjusted figures for the forecast years are based on the FAA TAF for OJC, which maintains an increasing forecast for operations with a CAGR of 0.48 percent. With this adjustment, the planning forecasts are within the tolerance for the five-year and 10-year periods for annual operations. The selected based aircraft forecast meets the TAF tolerance parameters with and without the adjustment.

AIRCRAFT/AIRPORT/RUNWAY CLASSIFICATION

The FAA has established several aircraft classification systems that group aircraft types based on their performance (approach speed during landing operations) 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 design aircraft is used to define the design parameters for an airport. The design aircraft may be a single aircraft type or a group of aircraft with similar characteristics. The design 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*, Change 1, describes the following airplane classification systems, the parameters of which are presented on **Exhibit 2F**.

Aircraft Approach Category (AAC)

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

The AAC refers to the approach speed of an aircraft in landing configuration and is depicted by a letter (A through E). The higher the approach speed (operational characteristic), the more restrictive the applicable design standards will be. 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 (more restrictive) 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.

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)

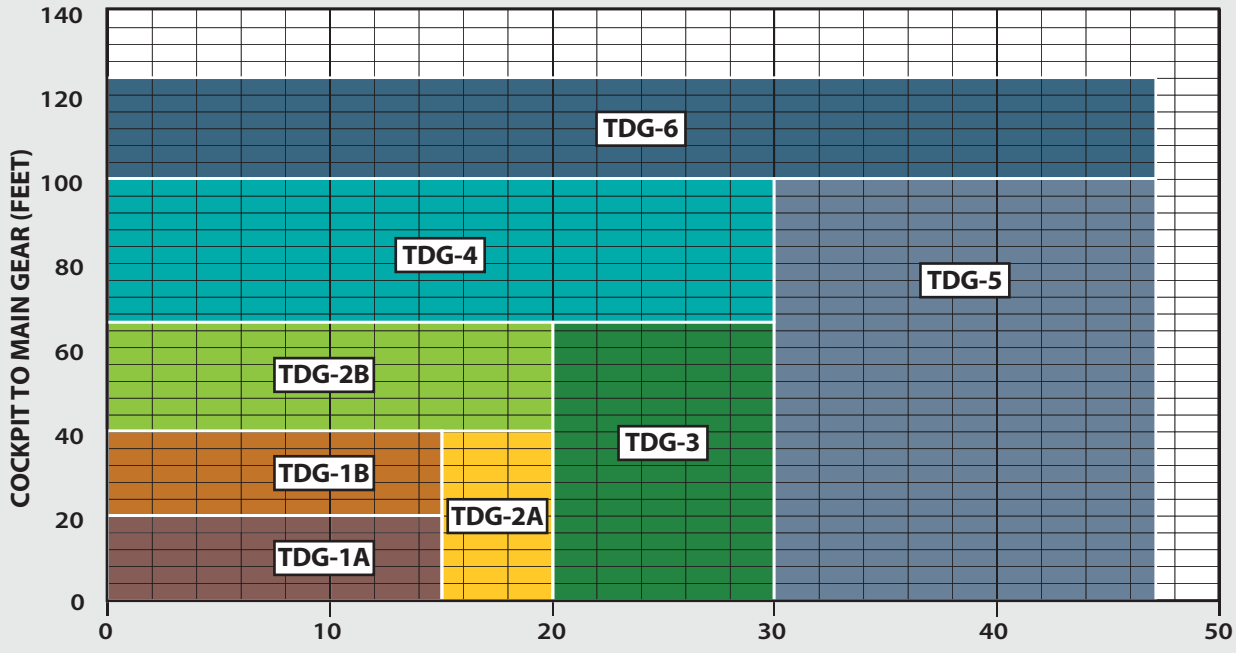
Group #	Tail Height (feet)	Wingspan (feet)
I	<20	<49
II	20-<30	49-<79
III	30-<45	79-<118
IV	45-<60	118-<171
V	60-<66	171-<214
VI	66-<80	214-<262

VISIBILITY MINIMUMS

RVR* (feet)	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

A-I	Aircraft	TDG
	• Beech Bonanza • **Cessna 150**, 172 • Piper Comanche, Seneca	1A **1A** 1A

B-I	Aircraft	TDG
	• Eclipse 500 • Beech Baron 55/58 • **Beech King Air 100** • Cessna 421 • Cessna Citation M2 (525) • Cessna Citation 1(500) • Embraer Phenom 100	1A 1A **1A** 2A 1A 1A 1A

A/B-II *12,500 lbs. or less*	Aircraft	TDG
	• Beech Super King Air 200 • Beech King Air 90 • **Cessna 441 Conquest** • Cessna Citation CJ2 • Pilatus PC-12	2A 1A **1A** 2A 2

B-II *over 12,500 lbs.*	Aircraft	TDG
	• Beech Super King Air 350 • Cessna Citation CJ3(525B) • **Cessna Citation CJ4 (525C)** • Cessna Citation Latitude • Embraer Phenom 300 • Falcon 20 • Pilatus PC-24	2A 2A **1B** 1B 1B 1B 2A

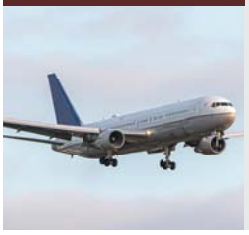
A/B-III	Aircraft	TDG
	• Bombardier Dash 8 • **Bombardier Global 7500** • Falcon 7X, 8X	3 **2B** 2A

C/D-I	Aircraft	TDG
	• **Lear** 35, 40, **45**, 55, 60XR • F-16	**1B** 1A

C/D-II	Aircraft	TDG
	• Challenger 600/604 • Cessna Citation III, VI,VII, X • Embraer Legacy 135/140 • **Gulfstream IV** (D-II) • Gulfstream G280 • Lear 70, 75 • Falcon 50, 900, 2000 • Hawker 800XP, 4000	1B 1B 2B **2A** 1B 1B 2A 1B

C/D-III *less than 150,000 lbs.*	Aircraft	TDG
	• Gulfstream V • **Gulfstream** 550, 600, **650** • Global 5000, 6000	2B **2B** 2B

C/D-III *over 150,000 lbs.*	Aircraft	TDG
	• **Airbus** A319, **A320**, A321 • Boeing 737-800, 900 • MD-83, 88	3 3 4

C/D-IV	Aircraft	TDG
	• Airbus A300 • Boeing 757-200 • **Boeing 767**-300, 400 • MD-11	5 4 **5** 6

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

E-I	Aircraft	TDG
	• **F-15**	**1B**

Note: Aircraft pictured is identified in bold type.

The 2006 airport layout plan (ALP) currently on file with the FAA was updated in 2023 and identifies the existing and ultimate AAC/ADG for Runway 18-36 as B-II.

Taxiway Design Group (TDG)

The TDG is a classification of airplanes based on certain undercarriage dimensions of the aircraft. Outer-to-outer main gear width (MGW) and cockpit-to-main gear (CMG) distances are used in the classification of an aircraft. The TDG is depicted by an alphanumeric system (1A, 1B, 2, 3, 4, 5, 6, and 7). The taxiway design elements determined by the application of the TDG include the taxiway width, taxiway edge safety margin, taxiway shoulder width, taxiway fillet design and dimensions, and (in some cases) the separation distance between parallel taxiways/taxilanes. Other taxiway elements, such as the taxiway safety area (TSA), taxiway 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 design 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 2F** summarizes the classifications 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 larger commercial aircraft fall in AAC C and D.

AIRPORT AND RUNWAY CLASSIFICATIONS

Along with the previously defined aircraft classifications, airport and runway classifications are used to determine the appropriate FAA design standards to which airfield facilities should 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 applicable design standards. The first component, which is depicted by a letter, is the AAC and relates to aircraft approach speeds (operational characteristic). The second component, which is depicted by a Roman numeral, is the ADG and relates to either the aircraft wingspan or tail height (physical characteristic), 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. For a runway designed for visual approaches only, “VIS” is used in place of a numerical value for the RVR.

Approach Reference Code (APRC)

The APRC is a code that signifies the current operational capabilities of a runway and associated parallel taxiway regarding landing operations. The APRC has the same three components as the RDC: AAC, ADG, and RVR. The APRC describes the current operational capabilities of a runway under meteorological conditions in which 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 regarding takeoff operations. The DPRC represents those aircraft that can take off from a runway while any aircraft are present on adjacent taxiways, under meteorological conditions with no special operating conditions. The DPRC is like the APRC but is composed of only the AAC and ADG. A runway may have more than one DPRC, depending on the parallel taxiway separation distance.

CRITICAL AIRCRAFT

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

The first consideration is the safe operation of aircraft that are likely to use an airport. Any operation of an aircraft that exceeds the design criteria of an airport may result in a decreased safety margin; however, it is not standard practice to base the design of an airport on an aircraft that infrequently uses the airport. **The design aircraft is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that makes regular use of the airport, which is defined as 500 annual operations (excluding touch-and-go operations).** Planning for future aircraft use is important because the design standards are used to plan separation distances between facilities. These future standards must be considered now to ensure short-term development does not preclude the reasonable long-range potential needs of the airport.

According to FAA AC 150/5300-13B, *Airport Design*, Change 1: “airport designs based only on existing aircraft can severely limit the ability to expand the airport to meet future requirements for larger, more demanding aircraft. Airport designs that are based on large aircraft never likely to be served by the airport are not economical.” Selection of the current and future critical design aircraft must be realistic in nature and supported by current data and realistic projections.

AIRPORT DESIGN AIRCRAFT

As previously stated, there are three elements for classifying the airport design aircraft: the AAC, ADG, and TDG. The AAC and ADG are examined first, followed by the TDG.

The FAA's TFMSC database includes documentation of commercial (air carrier and air taxi), general aviation, and military aircraft traffic. Due to factors such as incomplete flight plans, limited radar coverage, and visual flight rules (VFR) operations, TFMSC data do not account for all aircraft activity at an airport by a given aircraft type; however, the TFMSC database provides an accurate reflection of instrument flight rules (IFR) activity. Operators of high-performance aircraft, such as turboprops and jets, tend to file flight plans at a high rate. The TFMSC operations counts have been filtered to only include turbine-powered aircraft, as they will have a higher impact on the AAC/ADG design standards for the airfield.

According to TFMSC data for OJC, operations conducted by aircraft with an AAC/ADG of B-II have consistently exceeded 500 annual operations over the previous five years. As such, **the historical operational activity indicates OJC's existing AAC/ADG is B-II**. The B-II aircraft that operate most frequently at OJC are the Pilatus PC-24, Embraer Phenom 300, and Cessna Citation Encore. The Pilatus PC-24 conducts the most operations among this group, so it has been identified as the current critical aircraft.

Operations within the small to medium turboprop and business jet categories, particularly those in the A-II and B-II AAC/ADG categories, are well-positioned for growth at OJC. The airport serves a prosperous and expanding service area characterized by strong business activity, high household incomes, and continued demand for corporate aviation, all of which support increased use of turbine-powered aircraft. As mentioned, OJC is home to a Pilatus-authorized MRO facility, which provides a specialized aviation service that attracts and retains turbine aircraft operators. Growth in these categories is further reinforced by the projected growth in services offered by the MRO, as well as the presence of a newly based tenant with a fleet that consists exclusively of Pilatus turbine-powered aircraft, creating an immediate and sustained source of operations while strengthening the airport's role as a national reliever general aviation airport.

To determine OJC's future AAC/ADG, annual turbine operations by aircraft classification were forecasted through 2046 using a growth rate forecast based on local and national growth trends within each aircraft category. Historical and forecasted operations by AAC/ADG are depicted in **Table 2U**. Operations levels within the higher C-II category are anticipated to increase over the planning period, consistent with industry trends; however, the individual AAC C category is not anticipated to exceed 500 annual operations alone, so **OJC's future and ultimate critical aircraft remains within the B-II category**.

TABLE 2U: Historical and Forecasted Turbine Operations by AAC/ADG

Year	A-I	A-II	B-I	B-II	C-I	C-II
Historical						
2021	771	1,685	368	2,231	9	56
2022	805	1,566	500	2,515	4	85
2023	838	1,554	465	2,194	7	147
2024	882	1,117	318	1,871	0	133
2025	787	1,251	402	2,206	14	103
2026*	790	1,401	503	2,471	20	107
CAGR	**0.49%**	**-3.62%**	**6.45%**	**2.06%**	**17.32%**	**13.83%**
Forecast						
2031	884	1,509	365	2,742	15	111
2036	989	1,626	265	3,042	11	116
2046	1,239	1,887	139	3,744	6	125
CAGR	**2.28%**	**1.50%**	**-6.21%**	**2.10%**	**-5.79%**	**0.79%**

*2026 data represent a 12-month period ending July 2026.

Sources: FAA TFMSC; Coffman Associates analysis

TAXIWAY DESIGN GROUP (TDG)

The TFMSC database also provides a breakdown of aircraft operations by TDG. According to OJC operations data, which are presented in **Table 2V**, the highest TDG that exceeds the threshold of 500 annual operations in 2026 is TDG 2A. This includes aircraft such as the Pilatus PC-24 and PC-12, as well as airplanes such as the Cessna Citation Encore and the Beechcraft King Air 200/300/350. As such, **TDG 2A is considered the existing, future, and ultimate critical design TDG for taxiway planning purposes.**

TABLE 2V: OJC Operations by Taxiway Design Group

Year	1A	1B	2A	3
2021	1,357	619	3,144	1
2022	1,546	805	3,125	0
2023	1,417	790	2,999	0
2024	1,350	751	2,221	0
2025	1,293	757	2,713	0
2026*	1,430	883	2,979	0

*Data represent a 12-month period ending July 2026.

Source: FAA TFMSC

RUNWAY DESIGN CODE

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

The current runway design at OJC for Runway 18-36 should meet the standards for the overall airport design aircraft, which has been identified as the Pilatus PC-24, a B-II aircraft. The runway has an instrument landing system (ILS) precision approach with as low as ¾-mile visibility minimums. The RVR value assigned to a runway with ¾-mile minimums is 4000; therefore, **the applicable existing/future/ ultimate RDC for Runway 18-36 is B-II-4000**.

CRITICAL AIRCRAFT SUMMARY

Table 2W summarizes the current and future runway classifications.

TABLE 2W: Airport and Runway Classifications

	Runway 18-36
	Existing/Future/Ultimate
AAC/ADG	B-II
Critical Aircraft (Typ.)	Pilatus PC-24
Runway Design Code (RDC)	B-II-4000
Taxiway Design Group (TDG)	2A

Source: FAA AC 150/5300-13B, Airport Design, Change 1

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. Based aircraft are forecasted to grow from 136 in 2026 to 193 by 2046. Operations are forecasted to grow from 55,942 in 2026 to 79,396 by 2046. The projected growth is driven by the FAA's positive outlook for general aviation activity in the State of Kansas and nationwide, as well as a positive outlook for socioeconomic growth (population, employment, and income/GRP) in Johnson County and the broader Kansas City metropolitan area. Recent growth trends specific to OJC also factor into the projected growth.

The critical design aircraft for the airport was determined by examining the FAA TFMSC database of flight plans. The current, future, and ultimate critical design aircraft is represented by the Pilatus PC-24, a medium-sized business jet typically utilized for business operations or air charters.

Projections of aviation demand will be influenced by unforeseen factors and events in the future; therefore, it is not reasonable to assume 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, implementation of facility construction can be slower than planned if demand does not materialize as projected. Likewise, facility construction can be accelerated if demand exceeds these forecasts.

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 carried forward in the next chapter as planning horizon levels, which will serve as milestones or activity benchmarks in evaluating facility requirements.