



MASTER PLAN UPDATE WORKING PAPER #1

Wayne County Airport

6020 Honeytown Road
Smithville, Ohio 44677

CHA Project Number: 078834

December 2023

Prepared for:
Wayne County Board of Commissioners
428 West Liberty Street
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1.0 AIRPORT INVENTORY

The Wayne County Board of Commissioners have retained CHA Consulting, Inc. ('CHA') to prepare a Master Plan Update & Airport Layout Plan (ALP) for the Wayne County Airport ('BJJ' or 'the Airport'). The purpose of the study is to evaluate the current utilization and operational characteristics of the airfield, general aviation and support facilities, ground access, and land development considerations.

This inventory chapter provides a description of the project and a background overview of the Airport and its facilities. Additional information about the Airport and the Study can be found on its website at <https://www.bjj-master-plan.com/>

1.1 Project Description

The airport master planning process assesses how well an airport serves existing users, is equipped to meet future demands, and fulfills Federal Aviation Administration (FAA) safety and design standards. The process includes the development of activity forecasts, the identification and evaluation of financial, physical, and environmental issues, and the recommendation of feasible improvements.

An airport master plan is a comprehensive study of an airport that is conducted via a systematic process that evaluates existing facility and market conditions, identifies anticipated facility needs, and formulates short-, medium-, and long-term development plans to meet future aviation demand. The process, methods and ultimate products are guided by FAA Advisory Circular (AC) 150/5070-6B: Airport Master Plans. Consistent with this guidance, this Master Plan Update provides recommendations for the improvement and development of the Airport. The recommendations are intended to satisfy aviation demand, minimize environmental impacts, and address community concerns. The study follows the format and design criteria outlined in the following federal guidance materials and regulations:

- ➔ FAA Advisory Circular 150/5070-6B: Airport Master Plans
- ➔ FAA Advisory Circular 150/5300-13B: Airport Design
- ➔ Federal Aviation Regulation (FAR) Part 77: Safe, Efficient Use, and Preservation of the Navigable Airspace

The products of the study include this narrative report and an Airport Layout Plan (ALP). The ALP illustrates the existing and proposed airport facilities and will be formally approved by the Wayne County Board of Commissioners, the FAA, and the Ohio Department of Transportation (ODOT), Office of Aviation. Several additional drawings that illustrate the surrounding airspace, adjacent land use, and airport property support the ALP. The combined set of drawings is called the ALP Drawing Set. Note that approval of the ALP does not represent a commitment by the Commissioners or the FAA to undertake or financially support the proposed projects, nor does it constitute any environmental approval. However, the FAA's approval of the aviation forecasts and ALP is necessary for specific projects to become eligible for federal and state funding.

1.2 Airport Background

1.2.1 History

The Airport, located two miles north of Wooster, OH, was developed on land purchased by the Wayne County Board of Commissioners in 1963. Airport development has continued since 1967 as additional land parcels have been acquired.¹

Runway 10-28, originally designated as Runway 9-27, was paved with asphalt and was 4,400 feet long and 75 feet wide. In 1968, the County constructed the original terminal building and throughout the late 1960s and early 1970s, additional hangars were constructed to meet the growing demand for aircraft storage. In 1987, a Master Plan was prepared for the airport, which selected an alternative to reconstruct the airport to meet the current FAA standards. Under this plan the following improvements included:

- ➔ 2,200 extension of Runway 10-28 to the west
- ➔ Widening of Runway 10-28 by 25 feet
- ➔ Strengthening of Runway 10-28 to accommodate larger aircraft (>12,500 pounds)
- ➔ Relocation of the existing terminal building and hangar
- ➔ Construction of a full parallel taxiway
- ➔ Closure of Geyers Chapel Road
- ➔ Encapsulating the existing stream to the west of the Runway 10 end

In 1994, Runway 10-28 was reconstructed and extended to 5,189 feet and widened to 100 feet. This extension resulted in a partial closure of Geyers Chapel Road/County Road 68 and necessitated the installation of a culvert and piping of Sugar Creek near the west end of the runway. The additional runway length was a partial extension based on recommendation of the Master Plan, which suggested a total runway length of 6,320 feet. As part of the project, a 275-foot section of parallel taxiway was also constructed on the Runway 10 end and the Runway 28 threshold was displaced 218 feet, most likely to clear vehicles on Honeytown Road.

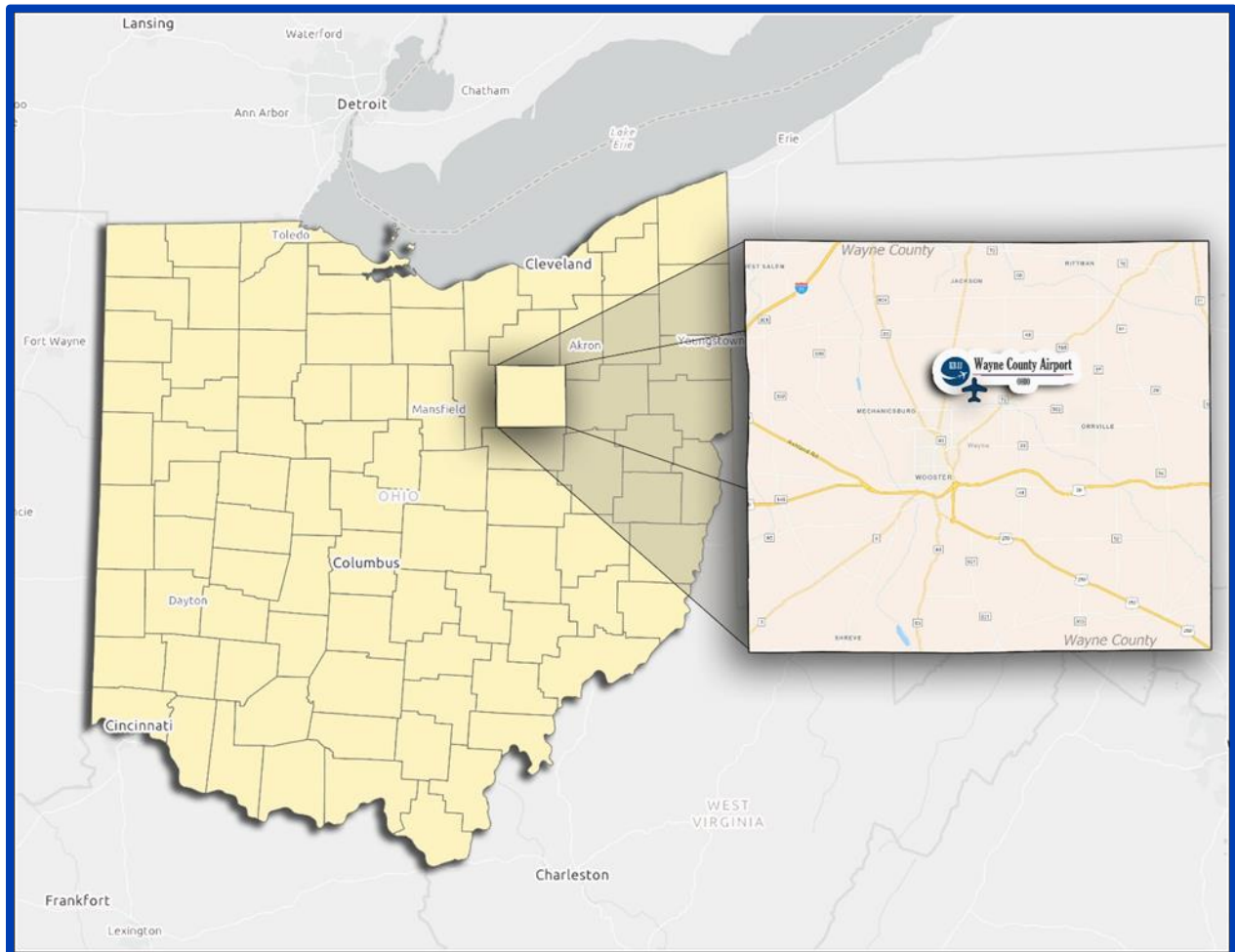
The existing terminal building and hangar was constructed in 2004 on the main apron's southern edge. In 2020, a full-length parallel taxiway was constructed along the south side of Runway 10-28. The taxiway centerline is approximately 350 feet south of Runway 10-28 and is 35 feet wide.

1.2.2 Location & Study Area

BJJ is located within Wayne County, OH in the southwestern region of the Village of Smithville. The Airport is approximately five miles northeast of downtown Wooster, 22 miles southwest Akron, OH, and 45 miles southwest of Cleveland, OH. The Airport is located between Highways 3 (west) and 585 (east) and accessible via Honeytown Road/County Road 54. **Figure 1-1** depicts the location of BJJ within Wayne County and the State of Ohio. According to the 2017 Exhibit 'A' Property Map, the Airport is approximately 335 acres.

¹ Wayne County Master Plan (2008)

Figure 1-1. Wayne County Airport Location Map



Source: CHA, 2023

1.3 Airport Role

The FAA works closely with State aviation agencies and local planning organizations to identify public-use airports that are important to the FAA system for inclusion in the National Plan of Integrated Airport Systems (NPIAS). The ODOT, Office of Aviation also publishes a system plan to identify potential improvement needs within Ohio's airport infrastructure.

1.3.1 National Plan of Integrated Airport Systems (NPIAS)

BJJ is included in the NPIAS as one of the nearly 3,400 existing airports within the United States that the FAA considers significant to the national air transportation system. With this designation, BJJ is eligible to receive Federal grants under the FAA's Airport Improvement Program (AIP).

NPIAS airports are grouped into two main categories: primary and non-primary. Primary airports are defined as public airports receiving scheduled service with more than 10,000 passenger boardings per year. Non-primary airports, such as BJJ, are predominantly classified as general aviation (GA) airports. GA airports are further separated into five categories: national, regional, local, basic, and unclassified. **Figure 1-2** lists the criteria for each of these classifications.

According to the FAA’s 2023 – 2027 National Plan of Integrated Airport Systems (NPIAS) report, BJJ is designated as a GA airport and is currently classified with a role of “regional”. As defined within the NPIAS, a regional airport, “supports regional economies with interstate and some long-distance flying and has high levels of activity, including some jets and multiengine propeller aircraft.”

Figure 1-2. Wayne County Airport Location Map

If a nonprimary airport is classified as:	It fulfills this role in the system:	And meets all requirements for each Criterion for the applicable Role
National	Support the national airport system by providing communities access to national and international markets in multiple States and throughout the United States. National airports have very high levels of aviation activity with many jets and multiengine propeller aircraft.	<p><i>Criterion 1</i> – must meet all three activity requirements:</p> <ul style="list-style-type: none"> • 5,000 or more instrument operations; • 11 or more based jets; and • 20 or more international flights or 500 or more interstate departures. <p><i>Criterion 2</i> – must meet both activity requirements:</p> <ul style="list-style-type: none"> • 10,000 or more enplanements; and • at least 1 enplanement by a large certificated air carrier. <p><i>Criterion 3</i> – 500 million pounds or more of landed cargo weight.</p>
Regional	Support regional economies by connecting communities to regional and national markets. Generally located in metropolitan areas and serve relatively large populations. Regional airports have high levels of activity with some jets and multiengine propeller aircraft. The metropolitan areas in which regional airports are located can be Metropolitan Statistical Areas with an urban core population of at least 50,000 or Micropolitan Statistical Areas with a core urban population between 10,000 and 50,000.	<p><i>Criterion 1</i> – must meet all four requirements:</p> <ul style="list-style-type: none"> • Is within a Metropolitan Statistical Area; • 10 or more domestic flights over 500 miles; • 1,000 or more instrument operations; and • 1 or more based jet or 100 or more based aircraft. <p><i>Criterion 2</i> – must meet both requirements:</p> <ul style="list-style-type: none"> • Nonprimary commercial service airport (requiring scheduled service); and • Is within a Metropolitan Statistical Area. <p><i>Criterion 3</i> – Reliever with 90 or more based aircraft.</p>
Local	Supplement local communities by providing access to markets within a State or immediate region. Local airports are most often located near larger population centers, but not necessarily in metropolitan or micropolitan areas. Most of the flying at local airports is by piston aircraft in support of business and personal needs. These airports typically accommodate flight training, emergency services, and charter passenger service.	<p><i>Criterion 1</i> – must meet all three requirements:</p> <ul style="list-style-type: none"> • Publicly owned; • 10 or more instrument operations; and • 15 or more based aircraft. <p><i>Criterion 2</i> – must meet both requirements:</p> <ul style="list-style-type: none"> • Publicly owned; and • 2,500 or more annual enplanements. <p><i>Criterion 1</i> – must meet both requirements:</p> <ul style="list-style-type: none"> • Publicly owned; and • 10 or more validated based aircraft (airport) or 4 or more based helicopters (heliport).
Basic	Provide a means for general aviation flying and link the community to the national airport system. These airports support general aviation activities, such as emergency response, air ambulance service, flight training, and personal flying. Most of the flying at basic airports is self-piloted for business and personal reasons using propeller-driven aircraft. They often fulfill their role with a single runway or helipad and minimal infrastructure.	<p><i>Criterion 2</i> – must meet both requirements:</p> <ul style="list-style-type: none"> • Publicly owned; and • Located 30 or more miles from the nearest NPIAS airport. <p><i>Criterion 3</i> – must meet one By or Use Through as shown below:</p> <ul style="list-style-type: none"> • <i>By:</i> U.S. Forest Service; U.S. Marshals Service; U.S. Customs and Border Protection; or U.S. Postal Service. • <i>Use Through:</i> Essential Air Service. <p><i>Criterion 4</i> – Owned or serving a Native American community.</p> <p><i>Criterion 5</i> – A new or replacement (publicly owned) airport that has opened within the last 10 years.</p> <p><i>Criterion 6</i> – Unique circumstances related to special aeronautical use.</p>
Unclassified	Currently in the NPIAS but with limited activity.	Does not meet the criterion for any other role.

Source: FAA NPIAS Report (2023 – 2027)

1.3.2 Ohio State System Plan

In 2014, the ODOT Office of Aviation updated its State Airport System Plan titled Ohio Airports Focus Study. The goal of the update was to identify gaps within the state aviation system and where improvements should be made. The study assigned specific classifications for each of the airports within the system plan. An update to the 2014 Focus study was underway at the

time of this report.

According to the Focus study, BJJ is classified as a GA Level 1 airport. The study lists Level 1 airports as an airport that: meets all the needs of GA turbine-powered aircraft and their users. These airports can provide all the services necessary to support corporate jet aircraft.

Additionally, the study also provided capital improvement objectives, or benchmarks, based upon the designated airport level. Table 1-1 lists BJJ's recommended improvement objectives identified within the 2014 Focus Study.

Table 1-1. 2014 Ohio Airport System Plan Benchmark Recommendations (BJJ)

Project/Benchmark	GA Level 1 Objective	BJJ
Airport Reference Code (ARC)	C-II	B-II
Runway Length	≥ 5,000 Feet	5,189 Feet
Runway Lighting	HIRL	Yes
Airport Beacon	Yes	Yes
Taxiway Type	Full Parallel	Yes
Air Traffic Control Tower	Yes, if Part 139 Certified	N/A
ATC Comms	Yes	Yes
Instrument Approach Procedures	Precision or Approach with Vertical Guidance	Yes
Paved Aircraft Parking	Yes	Yes
Approach Lighting System	MALSR	No
Visual Approach Aids	PAPI	Yes
Snow Removal	Yes	Yes
Fencing	Full Perimeter	None

Source: 2014 Ohio Airports Focus Study (ODOT)

This study will review each benchmark recommended for BJJ's system plan level and provide recommendation based upon unique factors identified within subsequent sections of this report. It should be noted that the Office of Aviation is currently updating the 2014 System Plan. Any updates from that plan specific to BJJ will be incorporated as the study progresses.

1.4 Technical Advisory Committee

To guide the Airport Master Plan Update development, a Technical Advisory Committee (TAC) was formed. This seven-member TAC consists of key airport stakeholders and local leaders (Table 1-2). The TAC is scheduled to meet multiple times during the Airport Master Plan Update to provide input into the report as it evolves.

Table 1-2. Technical Advisory Committee (TAC)

TAC Member	Organization
Matt Long	Manager, Wayne County Airport
Patrick Herron	Wayne County Administrator
Sue Smail	Wayne County Commissioner
Rob Kastner	Soil and Water Conservation District
Chris Hershberger	Airport Tenant
Mark Mosier	Airport Tenant
Maribeth Burns	Economic Development

1.5 Airport Governance

The Wayne County Airport Authority managed the Airport until their dissolution in the September 2015. Currently, the Airport is owned and operated by the Wayne County Board of Commissioners, who operates as the Airport Sponsor. The Commissioners have the authority to establish airport rates and charges; negotiate leases; acquire, construct, operate, manage, and maintain airport facilities; buy and sell property; and issue debt for property acquisitions or facility improvements.

1.6 Airside Facilities

A primary role of master planning is developing a detailed listing of recommended facilities and improvements for implementation over the 20-year planning period. As such, the first step in this process is to compile an inventory of existing facilities and to review their current condition.

Airport facilities are often described as either airside or landside, depending upon the type of operation they support. Airside facilities are those related to the landing, takeoff, and taxiing of aircraft in the airport environment. Examples of airside facilities include: the runway and taxiway system; airfield lighting, marking and visual aids; and aircraft parking and apron areas. **Figure 1-3** depicts the existing airside facilities at BJJ along with the overall airport layout.

1.6.1 Runway System

BJJ operates under a single runway, east/west system designated as Runway 10-28. The Runway is 5,189 feet long by 100 feet wide. The parallel taxiway is south of the runway and extends the entire length. Runway 10-28 is comprised of grooved asphalt and is in good condition according to the most recent FAA Airport Master Record (FAA Form 5010-1). The runway is equipped with non-precision markings in fair condition. The Runway 28 end contains a 218-foot displacement due to the location of Honeytown Road; however, there are no published declared distances for the runway. The runway is equipped with high intensity runway lighting (HIRL) that is lit from dusk to dawn with incandescent lighting.

Table 1-3. Runway 10-28 Characteristics

Runway Feature	Runway 10-28
Length	5,189'
Width	100'
Pavement Type	Asphalt – Good Condition
Gradient	0.45%
Edge Lighting	HIRL
Approach Instrumentation	RWY 10 – RNAV (GPS) & VOR RWY 28 – RNAV (GPS) & VOR 5 – Non-Precision
Approach Lighting	None
Approach Aids	RWY 10 – PAPI-4 RWY 28 – VASI-4
Runway Markings	Non-precision (fair condition)

Source: Wayne County Airport Master Record (09/16/2022), CHA 2023.

File Name: \\cha-lp.com\proj\Projects\ANY\6\078834\000\09_Design\Exhibits\Figure 1-3_Existing Airside Facilities.dwg - 17x11 | Modified / By: November 9, 2023 11:17:31 PM / French, Adam



**WAYNE COUNTY AIRPORT (BJJ)
MASTER PLAN UPDATE**

Existing Airside Facilities

PROJECT:

TITLE:

EXHIBIT NO.

1 - 3

LEGEND	
	EX. Building
	EX. Runway Pavement
	EX. Taxiway Pavement
	EX. Apron Pavement
	Airport Property Boundary
	Runway Protection Zone
	Runway Safety Area
	Runway Object Free Area
	Taxiway Safety Area
	Taxiway/Taxilane Object Free Area

GRAPHIC SCALE (FEET)
0 150 300 600

The Aircraft Classification Number-Pavement Classification Number (ACN-PCN) was established to develop a single method of reporting pavement strengths. The ACN is the effect of an individual aircraft on different pavements that varies according to airplane weight, wheel configuration, pavement type, and subgrade strength. The PCN is the load-carrying capacity of a pavement that is expressed by a single unique number, without specifying a particular airplane or detailed information about the pavement structure. In 2017, the Pavement Classification Number (PCN), which is a number that expresses the load-carrying capacity of pavement, was 21/F/D/X/T for Runway 10/28.

A new method was adopted to replace the ACN-PCN method and will become applicable in 2024. FAA AC 150/5335-5D: Standardized Method of Reporting Airport Pavement Strength – PCR, provides guidance for using the updated standardized method to report pavement strength. The ACR-PCR method shares some similarities with the previous ACN-PCN method as it still expressed the effect of an individual aircraft on different pavements with a single unique number, the Aircraft Classification Rating (ACR). Additionally, a single unique number, the Pavement Classification Rating (PCR), can express the load-carrying capacity of a pavement without specifying a particular aircraft or detailed information about the pavement structure. Like a PCN, the PCR is reported as a five-part code with the following information:

PCR value/Pavement type/subgrade category tire pressure/method used to determine the PCR.

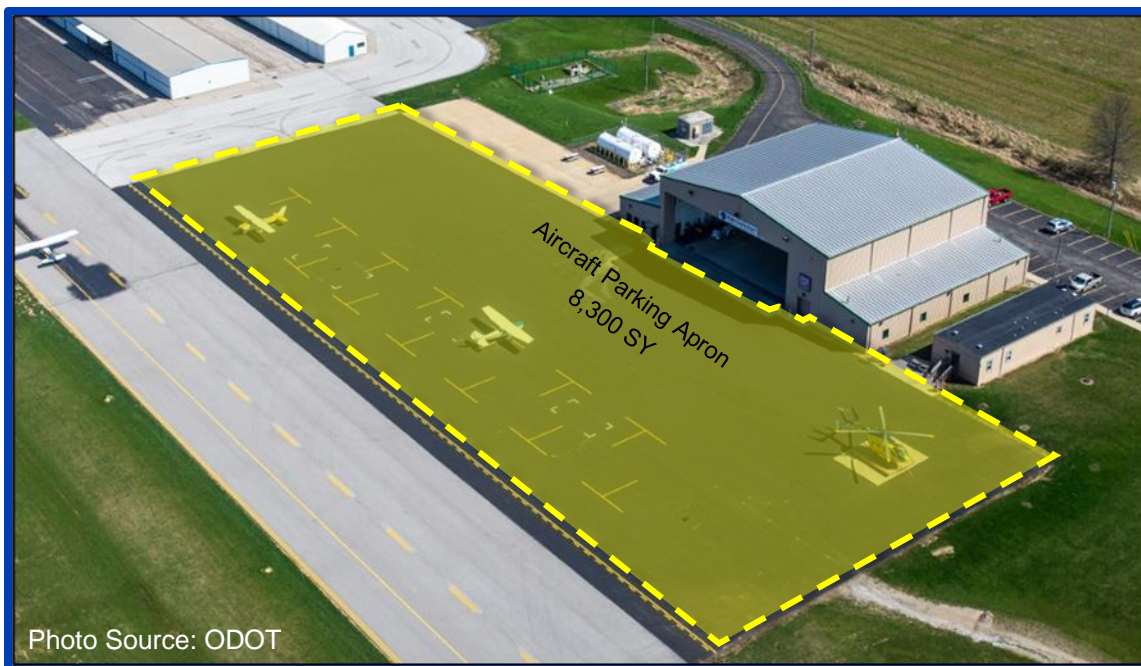
As part of this inventory chapter, the runway data used to calculate the PCN in 2017 along with updated fleet mix data was used to determine the expected Runway 10-28 PCR, which is 153/F/D/X/T.

1.6.2 Taxiway System

As mentioned previously, the taxiway system at BJJ was updated in 2021 to construct a full-length parallel taxiway (Taxiway 'A') offset 350 feet south of the Runway 10-28 centerline. The taxiway is 35 feet in width and meets FAA design standards for Taxiway Design Group 2. Three connector taxiways provide access to Runway 10-28; one located at each runway end and a middle connector located approximately 1,300 feet east of the Runway 10 end. Each connector meets current FAA taxiway fillet design geometry. Taxiway 'A' and each connector taxiway is equipped with Medium Intensity Taxiway Lighting (MITL) that is lit from dusk to dawn with LED lighting.

1.6.3 Aircraft Parking Apron

The aircraft parking apron at BJJ is in the southeast quadrant of the Airport, directly north of the terminal building/hangar. The apron is constructed of asphalt and is approximately 8,300 square yards. There are a total of 14 nested tie-down spaces located within the northern portion of the apron. There are also three (3) small concrete apron pads for larger jet aircraft. In 2020, the parallel taxiway was connected to the existing apron which allowed the apron to operate more efficiently. During the close out of the project, the FAA questioned the "wide-throat" access to the apron and determined it was a non-standard condition. Although the Taxiway Object Free Area (TOFA) was marked on the apron and in-pavement edge lights were installed, the FAA requested painted islands be installed, which were completed in 2023. Airport management has indicated that the aircraft parking apron often becomes congested during peak operations or when large itinerant (i.e., corporate aircraft) occupy apron parking space. Subsequent sections of this report will examine apron sizing.



1.6.4 Visual Aides & Lighting

An airport's rotating beacon universally indicates the location and presence of an airport. BJJ's beacon is equipped with an optical system that projects two beams of light (one green and one white), 180-degrees apart. Additionally, operation of the beacon during daylight hours may indicate the airport is under Instrument Meteorological Conditions (IMC). BJJ's rotating beacon is located on top of the southern edge of the terminal building.



Photo Source: ODOT

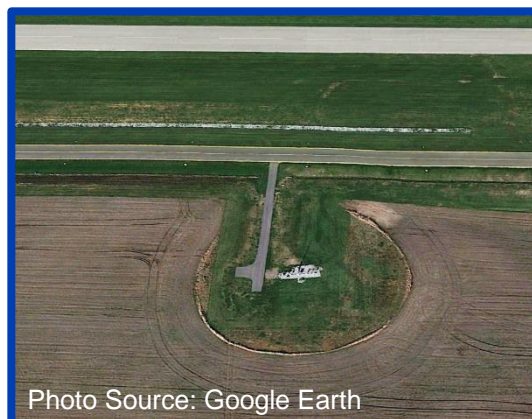
A segmented circle is a 100-foot diameter circular area sited at an airport that aids pilots in locating the wind cone (i.e., windsock) and direction of the traffic pattern. BJJ's segmented circle is located north of the central portion of Runway 10-28. A wind cone, or windsock, is in the center of the segmented circle, which provides pilots general wind direction and speed.



In addition to the windcone located within the segmented circle, there is an additional windcone located near each runway end. Each windcone is lit from dusk to dawn.

1.6.5 ASOS

An Automated Surface Observing System (ASOS) provides pilots with current meteorological conditions, such as wind speed, direction, and cloud ceiling. An ASOS at BJJ is located south of the central portion of Taxiway 'A'. The ASOS is maintained by the National Weather Service (NWS). ASOS weather data is uploaded directly in the NWS database and available for public review.



1.6.6 Airfield Markings

Runway markings denote runway direction, indicate the type of approach associated with the runway (e.g., visual, non-precision, precision), and provide aiming guidance to aircraft. Both runway ends have non-precision instrument markings currently in fair condition according to the most recent FAA Airport Master Record (FAA Form 5010-1). Additionally, the Runway 28 end is equipped with displaced threshold markings to guide pilots to the landing threshold.



1.6.7 Navigational Aids (NAVIDs)

NAVAIDs are physical systems on the ground that aid in the visual identification of an airport's runway environment. NAVIDs are mostly used at night and during poor visibility conditions but can be used at any time to assist with navigation to the airport.

1.6.7.1 PAPI & VASI

A Precision Approach Path Indicator (PAPI) provides visual glide path guidance to the runway by displaying red and white lights aligned in a single row to indicate if an aircraft's approach is high, slightly high, on the correct glide path, slightly low, or low.

The Runway 10 end is equipped with a PAPI-4 (four light system) system located north of the runway. Although the PAPI glide path slope must remain within FAA standards, the



established slope can vary by system dependent upon nearby obstructions such as trees, powerlines, buildings, and/or terrain. The Runway 10 PAPI currently has an established glide path of 3.04 degrees. The PAPI can be activated via the pilot-controlled lighting system. The PAPI system at BJJ is owned by Wayne County.

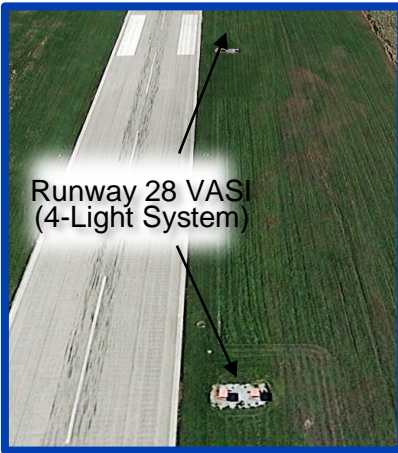


Photo Source: Google Earth

A Visual Approach Path Indicator (VASI) provides similar information as a PAPI system but uses two lighting boxes to provide glide path information. Generally, a VASI provides less information, such as only indicating if the aircraft is above, on, or below the glide path. The VASI glide path can also be adjusted but must remain within FAA standards.

The Runway 28 end is equipped with a VASI-4 (four-light system) located south of the runway. The Runway 28 VASI has an established glide path of 3.0 degrees but is unusable eight degrees left of the Runway 28 centerline due to obstructions. A baffle within the VASI shields the lights to prevent use of the system beyond this tolerance. The VASI can be activated via the pilot-controlled lighting system. The VASI system at Wayne County is owned by the FAA.

1.6.7.2 REILs

The primary function of runway end identifier lights (REILs) is to provide rapid and positive identification of the end of the runway. A REIL system consists of two synchronized, unidirectional flashing white lights that are positioned on each corner of the runway landing threshold, facing the approach, and aimed at an angle of 10 to 15 degrees. The Runway 10 and Runway 28 ends are both equipped with REILs and can be activated via the pilot-controlled lighting system. Note that the Runway 28 REILs are in conjunction with the displaced threshold.



Photo Source: ODOT

1.6.8 Instrument Approach Procedures

Instrument Approach Procedures (IAPs) provide aircraft with navigation from the en-route phase of flight to the runway environment via established instructions that have been vetted for obstruction clearance. IAPs can use ground- or satellite-based technology and can be used during instrument or visual metrological conditions. There are two types of IAPs:

- ➔ **Precision Approach (PA)** – A precision instrument approach provides aircraft with both vertical and lateral guidance to the runway using an instrument landing system (ILS) or precision approach path radar (PAR). Landing visibility minimums for precision approaches are generally lower than other types of instrument approach procedures but require use of ground-based equipment (e.g., glideslope, localizer, approach lighting system).
- ➔ **Non-Precision Approach (NPA)** – A non-precision instrument approach provides lateral or both lateral and vertical guidance to the runway. Non-precision approaches do not meet the same criteria as precision approaches and are therefore classified as “non-precision”. Examples of non-precision approaches include VOR and RNAV (GPS) approaches.

Both Runway 10 and 28 are equipped with non-precision IAPs. Table 1 4 lists the approaches and their respective landing minimums published for each runway end.

Table 1-4. BJJ Instrument Approach Procedures

Approach Procedure	Category A		Category B		Category C		Category D	
	Minimum Ceiling (MSL)	Minimum Visibility (MI)	Minimum Ceiling (MSL)	Minimum Visibility (MI)	Minimum Ceiling (MSL)	Minimum Visibility (MI)	Minimum Ceiling (MSL)	Minimum Visibility (MI)
RWY 10 – RNAV (GPS)	1540	1	1540	1	1540	1 ¼	1540	1 ½
LNAV								
Circling	1600	1	1700	1	1800	1 ¾	1840	2 ¼
RWY 10 – VOR	1840	1	1840	1 ¼	1840	2	1840	2 ¼
S-10								
Circling	1840	1	1840	1 ¼	1840	2	1840	2 ¼
RWY 28 – RNAV (GPS)	1398	1	1398	1	1398	1	1398	1
LPV								
LNAV/VNAV	1589	1 5/8	1589	1 5/8	1589	1 5/8	1589	1 5/8
LNAV	1560	1	1560	1	1560	1 ¼	1560	1 ¼
Circling	1600	1	1700	1	1800	1 ¾	1840	2 ¼
RWY 28 – VOR	1660	1	1660	1 ¼	1660	1 ½	1660	1 ¾
S-28								
Circling	1660	1	1700	1 ¼	1800	1 ¾	1840	2 ¼

Source: FAA Terminal Procedures (Effective Date: October 05 – November 1, 2023), CHA, 2023.
 Note: Not for navigational use. Refer to current published instrument approach procedure.

1.6.8.1 RNAV (GPS) Approaches

An RNAV (Area Navigation) approach is a non-precision, GPS-based IAP that utilizes satellite technology to provide aircraft navigation to the runway environment. This type of approach is widely used at both commercial and GA airports as RNAV (GPS) approaches do not require ground-based navigational equipment.

The Runway 10 RNAV (GPS) instrument approach provides only lateral guidance (i.e., LNAV) while the Runway 28 RNAV (GPS) provides both lateral and vertical guidance (i.e., LPV). Note that the Runway 28 RNAV (GPS) offers lower landing minimums due to the added vertical guidance (LPV).

1.6.8.2 VOR Approaches

A VOR instrument approach is a non-precision approach providing only lateral guidance to the runway environment. A VOR approach involves tracking a signal transmitted from a VHF omnidirectional range (e.g., VOR) ground-based station and, generally, does not provide as low of

landing minimums as compared to a precision or satellite-based instrument approach. In addition to the RNAV (GPS) approaches, both Runway 10 and Runway 28 have published VOR approaches using the Briggs VOR located approximately 30 miles southwest of BJJ. Note that the VOR Runway 10 final approach course heading (115 degrees) is approximately five degrees offset from the runway heading and the VOR Runway 28 final approach heading (296 degrees) is approximately 16 degrees offset from the runway heading. Both VOR approaches, however, are considered “straight-in” as the final approach course and runway headings are less than 30 degrees.

1.6.8.3 Takeoff Minimums

Unlike landing during Instrument Flight Rule (IFR) operation, takeoff does not require minimum visibility unless otherwise published by the FAA. At BJJ, takeoff minimums are established for Runway 28. These takeoff minimums require a ceiling of at least 300 feet above ground level and one-mile visibility.

1.6.9 Airspace

The National Airspace System (NAS) is classified using a lettering-system (e.g., Class A, B, C, D, E, and G) and includes controlled and uncontrolled areas of airspace. Class A airspace is a controlled airspace and is generally reserved for business and commercial aircraft as it begins at 18,000 feet above mean seal level (msl). Class A airspace requires operation under IFR and communication with ATC. The Class B, C, and D airspaces are also considered controlled airspace and are generally centered about larger airports. Communication with ATC must be established prior to entering Class B, C, or D airspaces. The Class E and G airspaces encompass most of the NAS below 18,000 feet MSL. Class E airspace can be either controlled or uncontrolled, depending on the type of operation (i.e., VFR or IFR). Class G airspace is completely uncontrolled.

BJJ is a non-towered airport located within Class G airspace. Above BJJ, Class E airspace begins at 700 feet above ground level (AGL) and extends vertically to the Class A airspace at 18,000 feet MSL. This airspace configuration is denoted by the faded magenta circular area surrounding BJJ (denoted by the red circle) on the FAA aeronautical sectional chart. **Figure 1-4** depicts BJJ’s airspace, along with all public-use airports within 30 nautical miles.

Figure 1-4. BJJ Airspace



Source: FAA Detroit Sectional Chart (Effective: October 5, 2023 – November 30, 2023) CHA, 2023.

1.6.10 Pavement Strength & Condition

Runway pavement strength defines the weight limits at or below which an aircraft may operate on the runways without causing undue stress on the pavement. Bearing strength are classified by the various main landing gear system configurations that can operate on the runway at BJJ. Single wheel aircraft have one wheel on each side of their main landing gear and are typically characterized by piston aircraft as well as some turboprop and smaller jet aircraft. Double wheel aircraft have two wheels on each side of their main landing gear and are characterized by larger corporate jet and turboprop aircraft. Dual tandem aircraft have four wheels on each side of their main landing gear and are characterized by larger commercial aircraft.

The Pavement Condition Index (PCI) is based on a visual inspection of pavement condition. ODOT. Office of Aviation completed an inventory of airport pavements in 2017. Pursuant to the 2017 analysis, on a 100-point scale, with 100 being perfect condition, BJJ had an overall PCI of 74; however, this data is over 7 years old and out of date. Coordination with ODOT has indicated they don't have to the staff to continue to update all of Ohio's non-primary airports. Runway 10-28 had a rehabilitation project in 2017 (mill/overlay) and had a PCI of 100; however, this could be expected to be in the 70-75 range. The parallel taxiway that serves Runway 10-28 was constructed in 2020 and is in good condition, most likely in the 80-85 range. The poor pavement at the airport is mostly within the terminal area where the main apron was a 61 in 2017 and various taxilanes ranged from 46-65.

1.7 Landside Facilities

Landside facilities are those related to the transition from air to ground movement or vice versa. Examples of landside facilities include: the airport terminal building, aircraft refueling area, aircraft storage, and vehicle parking. **Figure 1-5** depicts the existing landside infrastructure and buildings.

1.7.1 Airport Tenants & Buildings

1.7.1.1 Terminal Building/FBO

An airport Fixed Base Operator (FBO) provides services to aircrew, passengers, and aircraft, such as pilot and passenger amenities, lounge areas, fueling services, maintenance, and catering. The various services offered by an FBO vary based on the airport and types of visiting aircraft. Wayne County provides FBO services out of the terminal building and adjoined terminal hangar. Wayne County's FBO services include:

- ➔ Aircraft fueling
- ➔ Aircraft Maintenance
- ➔ Aircraft storage
- ➔ Airport Vehicle Maintenance
- ➔ Aircraft Cleaning
- ➔ A pilot/passenger lounge area with light vending
- ➔ A courtesy car
- ➔ Airfield maintenance

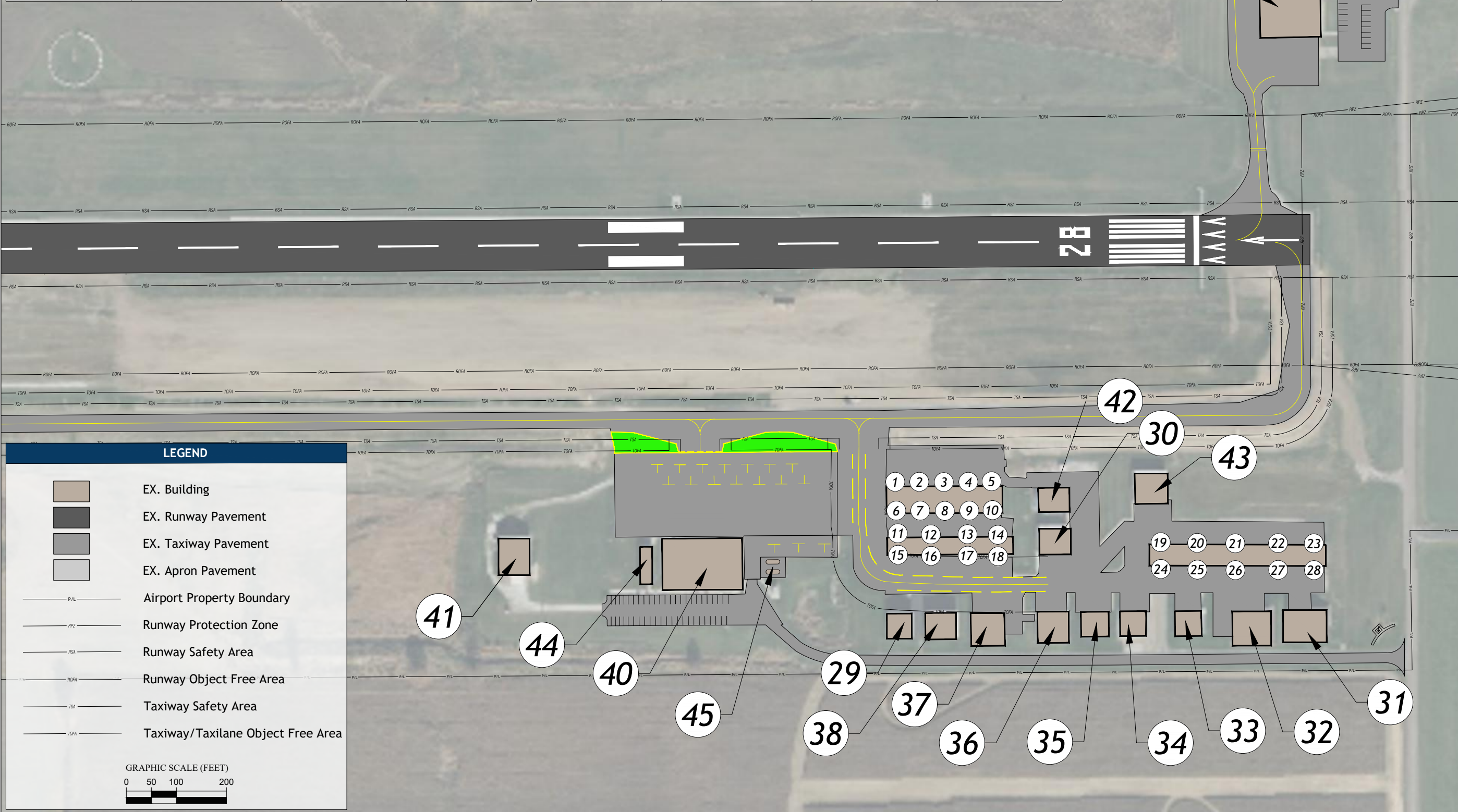


As mentioned previously, the terminal building/hangar was constructed in 2004. The building contains a hangar (approximately 10,700 square feet) and adjoined office/circulation areas on each side. The total building area is approximately 16,000 square feet. The eastern office area houses the FBO and pilot lounge area. The hangar is used for aircraft maintenance, storage, and is used during community airport events. Wayne County employs one full airport manager and five part-time staff.



AIRSIDE FACILITIES			
ID	DESCRIPTION	BUILDING SIZE	OWNER
1-10	T-Hangar (10 Units)	12,600 SF	Mid-Ohio Aviation
11-18	T-Hangar (8 Units)	7,500 SF	Mid-Ohio Aviation
19-28	T-Hangar (10 Units)	11,000 SF	Mid-Ohio Aviation
29	Box Hangar	2,304 SF	Mid-Ohio Aviation
30	Box Hangar	3,000 SF	Mid-Ohio Aviation
31	Box Hangar	4,920 SF	Smith
32	Box Hangar	5,250 SF	Workman
33	Box Hangar	2,500 SF	Boyer
34	Box Hangar	2,300 SF	Dehorta
35	Box Hangar	2,300 SF	Freeman

AIRSIDE FACILITIES			
ID	DESCRIPTION	BUILDING SIZE	OWNER
36	Box Hangar	3,600 SF	Coben
37	Box Hangar	4,200 SF	Bowling
38	Box Hangar	3,000 SF	Bolin
39	Corporate Hangar	18,000 SF	Mid-Ohio Aviation
40	Corporate Hangar	16,000 SF	Wayne County
41	Box Hangar	4,300 SF	Oberli
42	Box Hangar	2,700 SF	Bolin
43	Box Hangar	3,900 SF	Nicholas
44	Trailer	1,700 SF	Metro Life Flight
45	Fuel Farm	N/A	Wayne County



LEGEND

- EX. Building
- EX. Runway Pavement
- EX. Taxiway Pavement
- EX. Apron Pavement
- Airport Property Boundary
- Runway Protection Zone
- Runway Safety Area
- Runway Object Free Area
- Taxiway Safety Area
- Taxiway/Taxilane Object Free Area

GRAPHIC SCALE (FEET)
0 50 100 200

WAYNE COUNTY AIRPORT (BJJ)
MASTER PLAN UPDATE

Existing Landside Facilities

PROJECT:

TITLE:

EXHIBIT NO.

1 - 5

File Name: \\cha-ftp.com\proj\Projects\ANY\6\078834.000\09_Design\Exhibits\Figure 1-5_Existing Landside Facilities.dwg - 17x11 | Modified / By: November 9, 2023 1:21:28 PM / French, Adam

1.7.1.2 Mid-Ohio Aviation

Mid-Ohio Aviation is the only airport tenant located north of Runway 10-28 and formally provided FBO services at BJJ. Mid-Ohio Aviation presently serves as a corporate flight department for Seaman Corporation located in Wooster, Ohio and owns three rows of T-Hangars and two box hangars at BJJ that are leased. Mid-Ohio Aviation does not currently provide any services to the public.

1.7.1.3 Metro Life Flight

In 2021, Metro Life Flight established a 24/7 operating base at BJJ. The Metro Life Flight mobile trailer is located west of and adjacent to the main terminal building. Metro Life Flight operates an EC-145 helicopter stored within the terminal building hangar.



1.7.1.4 Aircraft Storage Hangars

There are a total of 18 aircraft storage facilities located throughout the Airport, including the terminal building hangar. These buildings include 15 corporate (or box) hangars and three T-Hangars. Most of the hangars at BJJ are privately owned with ground lease agreements in place with the County.

1.7.2 Support facilities

1.7.2.1 Aircraft Refueling

Wayne County owns and operates two refueling trucks: a 1,200-gallon truck for 100LL (capable of holding 600 gallons due to damage) and a 3,000-gallon truck for Jet-A.

A fuel farm, constructed in 2006 and located adjacent to and east of the terminal building, contains two 10,000-gallon underground storage tanks estimated to provide a two-month reserve of 100LL and one-month reserve of Jet A. Self-service aircraft fueling not currently available at BJJ. It should be noted that two private hangars also have their own Jet-A fuel farms.



1.7.2.2 Snow Removal & Airfield Maintenance

Wayne County owns and operates a variety of equipment used for snow removal and airfield upkeep. This equipment includes:

- ➔ Snow Removal Equipment:
 - Two International tandem axle dump truck with 12-foot plow
 - 1981 GMC Brigadier with 18.5-foot plow (kept in county maintenance facility)
 - 2001 Dodge Ram pickup truck with 8-foot plow
- ➔ Airfield Maintenance Equipment:
 - 2016 John Deer Gator

- Adams 4-ton Urea Spreader
- Steiner 430 max lawn tractor
- Ford tractor
- Two aircraft towbars

All equipment is stored in either the terminal building hangar or offsite during off-season periods.

1.7.3 Utilities & Stormwater

Although utility connection varies by building, the following utilities are located at the Airport:

- ➔ Electric: Holmes Wayne Electric Cooperative
- ➔ Gas: Consumer Gas Cooperative
- ➔ Internet: MCTV
- ➔ Phone/Landline: Brightspeed

1.7.3.1 Stormwater

The airport has three distinct stormwater collection systems and two stormwater management basins located just to the west of the terminal building and on the southwest corner of airport property. The north side of the Runway 10-28 is collected by a north swale/stream and discharged to the Sugar Creek. The runoff from the south side of the runway, the connector taxiways, the full-length parallel taxiway, and the grassed infields are collected by a series of swales and piped catch basins. The swale and catch basin collection system ultimately discharges to the west detention basin. The runoff is then temporarily stored in the basin while it is slowly discharged to the Sugar Creek over a 12-to-24-hour period. The terminal, apron and general aviation runoff is collected by a series of swales and catch basins along the taxi lane edges and the airport entrance. These systems discharge to the detention basin located just west of the main terminal/hangar. The stormwater is stored in the east detention basin for a 12-to-24-hour period and is discharged to the farmland south of the airport.

1.7.3.2 Domestic Water & Sanitary Systems

The domestic water for the terminal, the FBO hangar and the general aviation area is provided by a well and pump east of the fuel farm. The water is distributed through a series of small diameter mains and service laterals. The material of these mains and laterals is unknown. The domestic sanitary is collected from the same areas via a series of sewers and laterals. The pipe diameters and material of the sewers and laterals are also unknown. The sanitary sewer is discharged to an on-site wastewater treatment plant east of the terminal building. The domestic sanitary flow is then treated, and it appears the effluent discharges to a depressed area west of the plant, which ultimately discharges to the east detention area.

1.7.3.3 Electric

The electrical supply for the airport and airfield originates from a distribution system along Honeytown Road. The service enters the airport via above ground utility poles along the entrance road. The transformer and service disconnect is located near the terminal building. This service powers the facilities on the airport site as well as the airfield lighting vault.

1.7.4 Airport Security

Examples of security measures at GA airports can include use of a 24/7 camera monitoring systems, alarms, and/or security fencing. BJJ utilizes a security camera for monitoring of airport activity. However, airport personnel did not indicate a history of security issues at the Airport.

BJJ does not currently have security fencing; however, subsequent sections of this report will evaluate perimeter fencing, including review of the 2014 Ohio State Airport System Plan Focus Study benchmark which recommends full perimeter fencing for Level 1 airports.

1.7.5 Airport Access

The airport access road runs east/west, perpendicular to Honeytown/CR 54 to which it connects. The road was constructed in 2004 in preparation for the existing terminal building/hangar and eventually replaced the previous access road formally located just north of the existing access. Public vehicle parking is located south of the terminal building and provides a total of 50 vehicle parking stalls and two handicap parking stalls.



Photo Source: ODOT

Mid-Ohio Aviation also maintains a vehicle parking lot west of their facility. However, this lot is not public-use as it is for Mid-Ohio Aviation operations and patrons.

1.8 Environmental Inventory

This section provides a preliminary assessment of the environmental factors to be considered as part of the development and implementation of the proposed Master Plan projects. This review was conducted in accordance with FAA Orders 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions and 1050.1F, Environmental Impacts: Policies and Procedures. This review does not provide a complete investigation sufficient for obtaining environmental permits or compliance with environmental documentation, such as an Environmental Assessment (EA) under the requirements of NEPA, as amended. Publicly available resources were relied upon to identify potential impacts of study recommendations. The purpose of this overview is to identify the potential environmental issues and environmentally sensitive areas that may affect future projects at BJJ and to identify those environmental issues that may require additional analysis and permits prior to implementation. The environmental impact categories evaluated herein are:

- ➔ Compatible Land Use and Zoning
- ➔ Airport Noise

- ➔ Socioeconomics & Environmental Justice
- ➔ Air Quality
- ➔ Water Resources
- ➔ Department of Transportation Act, Section 303 (i.e., Section 4(f))
- ➔ Section 6(f)
- ➔ Cultural Resources
- ➔ Biological Resources
- ➔ Prime and Unique Farmlands
- ➔ Hazardous Materials

1.8.1 Compatible Land Use & Zoning

1.8.1.1 Compatible Land Use

BJJ is in the northwestern portion of the city of Smithville in Wayne County. Based on a review of the area, land uses surrounding the Airport are predominantly agricultural and residential in all directions. Land use considerations for this Master Plan are primarily limited to on-Airport property associated with Airport roadways, parking areas, commercial properties, and operational facilities, but also include small areas off-Airport as well as Geyers Chapel Road off Runway end 10 and Honeytown road off Runway end 28. Land use compatibility is of the most concern in the locations immediately beyond runway ends and within the Runway Protection Zone (RPZ). The RPZ at BJJ is primarily contained to Airport property and is left undeveloped and maintained by the Airport, with no existing forested areas located within the RPZ. Honeytown Road off Runway end 28 is located approximately 400 feet from the runway threshold (approximately 180 feet from the end of the runway pavement), while Geyers Chapel Road off Runway end 10 is located approximately 100 feet from the end of the runway pavement; however, Geyers Chapel road is permanently closed to the public. A turnaround is accessible for use on the southwest end of the road. These non-compatible land uses, as defined in the FAA's Interim Guidance on Land Uses within an RPZ, will be addressed in the alternatives section of the master plan.

Land uses that may not be compatible based on noise sensitivity are defined in FAA Order 1050.1F, Environmental Desk Reference. Potentially incompatible land uses based on noise sensitivity include residential areas and facilities such as schools, hospitals, and libraries. Given the type of aircraft that utilize BJJ, the noise contours are most likely contained to airport property.

1.8.1.2 Zoning

According to the Wayne County Planning Department, there is no zoning; however, there are county subdivision regulations, health, building code, floodplain and soil and water regulations that must still be followed. The Airport is required to comply with the ODOT, Office of Aviation's Ohio Airport Protection Act compliance. This includes identifying an airspace protection representative to monitor all FAA aeronautical studies and offer comments on circularized notifications of proposed structures.

1.8.2 Airport Noise

During normal airport operations, the surrounding industrial, commercial, and residential areas

near the Airport each experience some amount of Airport noise. Airport and aircraft noise are regulated at the federal level, and the impact parameters to communities are often very loud before they are considered a significant impact. Additionally, impacts are determined based on average airport noise levels, rather than peak noise levels that may occur during a single-event aircraft takeoff. This noise metric is represented as the day-night average noise level (DNL). Although updated noise contours were not part of this Master Plan process, any future runway alternatives may require additional noise analyses as part of environmental clearances.

1.8.3 Socioeconomic & Environmental Justice

1.8.3.1 Socioeconomic Resources

A socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the proposed action and alternative(s). Socioeconomic data, including population and housing data, based on information available through the U.S. Census Bureau, is provided below for the Village of Smithville (closest municipality), and Wayne County.

Table 1-5. Socioeconomic Resources

Municipality	2021 American Community Survey (ACS) Population	2021 ACS Median House Income
Village of Smithville	1,389	\$64,954
Wayne County	116,559	\$59,666

Source: United States Census Bureau, 2019, accessed August 2022

1.8.3.2 Environmental Justice

The U.S. Environmental Protection Agency (EPA) defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Title VI of the Civil Rights Act of 1964 was enacted to protect against discrimination based on race, color, and national origin in programs and activities receiving federal financial assistance.

Executive Order 12989, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” enacted in 1994, requires all federal agencies to identify and address the disproportionately high and/or adverse human health environmental impacts of their programs and policies on minority and low-income populations and communities. The guidance provides six principles for consideration of environmental justice, which are: 1) composition of affected area and whether there are low-income populations, minorities, or Indian tribes, 2) public health and industry data for assessment of environmental hazards, 3) recognition of interrelated cultural, social, occupational, historical, or economic factors that could amplify environmental effects, 4) encouragement of public participation and accommodations to overcome linguistic, cultural, institutional, geographic, and other barriers, 5) meaningful community representation with awareness of diverse constituencies, and 6) soliciting tribal representation.

The Council on Environmental Quality’s (CEQ) “Environmental Justice Guidance Under the

National Environmental Policy Act” provides guidance to federal agencies on how to determine the presence of low-income and minority populations within an appropriate unit of geographic analysis. The guidance defines the identification of a minority population where either “(a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.”

To assess the presence of minority and/or low-income populations near the Airport, an environmental justice (EJ) analysis was completed using both the U.S. Climate and Economic Justice Screening Tool (CEJST) and applicable census data from the U.S. Census Bureau website. The CEJST evaluation indicated that there are no disadvantaged communities within the Census Block that includes BJJ.

A more detailed analysis using the U.S. Census data selected Wayne County as the Community of Comparison (COC) as it is representative of the area surrounding the Airport. Census Tracts 8 and 9 include the entirety of the airport and represent the potential Affected Community (AC). Per CEQ guidance, ACs that are greater than 50% minority or low-income are automatically designated as EJ populations. The AC surrounding BJJ does not have minority or low-income populations greater than 50%. ACs are also designated as EJ populations if the low-income or minority populations are 125% of the COC. Table 5-2 displays the EJ analysis for BJJ.

Table 1-6. EJ Analysis

	Wayne County (COC)	Census Tract 8	Census Tract 9
Total Survey Population Determined	116,894	7,209	4,089
Minority Persons	9,165	847	256
Percent Minority	7.84%	11.75%	6.26%
125% COC	9.8%		
Potential Minority EJ Impact?		Yes	No
Total Survey Population Determined	112,074	6,814	4,120
Low Income	10,992	446	230
Percent Low Income	9.81%	6.5%	5.5 %
125% COC	12.26%		
Potential Low Income EJ Impact?		No	No

Source: U.S. Census, 2020 ACS Survey (5-year estimate)

According to the U.S. Census Bureau, 2020 American Community Survey (ACS) 5-Year Estimates, there are minority EJ Populations within Census Tract 8 that could potentially be affected by the projects and improvements in the Master Plan. A more detailed analysis may be required to fully assess environmental impacts in the future as future demographic and economic characteristics of the surrounding area may be different at the time of project implementation.

1.8.3.3 Children’s Health and Safety

Executive Order 13045, “Protection of Children from Environmental Health Risks and Safety Risks” requires that federal agencies make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. Such disproportionate impacts would be likely to occur at schools, day care centers, or similar facilities with higher concentrations

of children. No such facilities are found within a 0.5-mile buffer around the airport.

The proposed projects would occur on Airport property and away from areas where children are likely to be present on a consistent basis. The Master Plan recommendations will have no anticipated impact on children's health and safety.

1.8.4 Air Quality

The Clean Air Act Amendments (CAAA) of 1990 require the EPA to set National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants considered harmful to public health and the environment. The NAAQS identify two types of air quality standards: primary and secondary. Primary standards provide public health protection, including protecting the health of "sensitive" populations, such as asthmatics, children, and the elderly. Secondary standards were established to provide public welfare protection, including protection against impaired visibility and damage to animals, soils, crops, vegetation, and buildings. The six "criteria air pollutants" established by the EPA to protect public health and welfare include:

- ➔ Ozone (O₃)
- ➔ Carbon monoxide (CO)
- ➔ Particulates (PM₁₀ and PM_{2.5})
- ➔ Sulfur dioxide (SO₂)
- ➔ Nitrogen dioxide (NO₂)
- ➔ Lead (Pb)

Ohio has adopted the national standards implemented by the EPA and has developed a State Implementation Plan (SIP) to attain and maintain these standards. Wayne County is in the Mansfield-Marion Intrastate Air Quality Control Region. The Ohio Environmental Protection Agency (EPA) Division of Air Pollution Control (DAPC) is responsible for the SIP, designation activities for the NAAQS, transportation conformity activity, regional haze, and general air quality planning. When violations of air quality standards are detected, the DAPC is required to make plans to bring the area back into compliance with the standards; if they are not, the EPA has the authority to issue sanctions to the area. Wayne County is designated as in attainment for all criteria air pollutants.

1.8.5 Water Resources

Water quality standards applicable to BJJ are established under the federal Clean Water Act (CWA) and the Ohio EPA Surface Water Division. These regulations include requirements for controlling discharges into surface water and groundwater, develop wastewater treatment management plans and practices, and establish permitting requirements for discharges (Section 402 of the CWA) and dredged and fill materials (Section 404 of the CWA). Existing surface and ground water quality at BJJ are described below.

1.8.5.1 Wetlands

Wetlands and watercourses at BJJ are regulated and protected under both federal and state regulatory programs. It is anticipated that prior to initiating specific projects identified in the Master Plan, a current wetland delineation would be required to determine the federally and state regulated wetland and watercourse boundaries in the project area. Work occurring within

designated federal, or state wetlands or watercourses will require securing the appropriate permits from the U.S Army Corps of Engineers (USACE) and/or the Ohio EPA Division of Water, as applicable.

The U.S. Department of Transportation Order 5660.1A, Preservation of the Nation's Wetlands, implements Executive order 11990, Protection of Wetlands. The USACE administers Section 404 of the CWA (933 CFR 320-332) which regulates discharges of fill into federal wetlands and waters of the United States. Federally regulated wetlands, as defined in 33 CFR Part 328, are "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." A federal Section 404 permit may be required from the USACE for projects that include the discharge of dredged or fill material into waters of the U.S. including wetlands. Ohio's regulation of wetlands includes the issuance of a Section 401 Water Quality Certification by the Ohio EPA for the previously described USACE permit for those wetland areas that are deemed to be jurisdictional Waters of the U.S. by the USACE. For those wetland areas that are deemed to be isolated wetlands or Waters of the State, the Ohio EPA regulates any impacts under the Isolated Wetland Permit program.

To identify wetlands and watercourses occurring on BJJ property, publicly available online data was reviewed. While wetlands and watercourses were not formally delineated as part of this study, a field walkover was performed to determine the potential aquatic resources within the Airport property. The USFWS National Wetlands Inventory (NWI) map shows several wetlands on and adjacent to Airport property

During the field walkover, a 0.14-acre Freshwater Emergent Wetland (PEM) was identified south of the runway and designated Wetland A (see **Figure 1-6**). As this wetland does not exhibit a direct surface connection to a jurisdictional Waters of the U.S., it will likely be considered isolated. Prior to the implementation of any project recommended in the Master Plan, a wetland delineation will be conducted as part of the NEPA documentation process.

1.8.5.2 Floodplains

Executive Order 11988 defines floodplains as the "lowland and relatively flat areas adjoining inland and coastal waters, including flood prone areas of offshore islands", including at a minimum, "the area subject to a one percent or greater chance of flooding in a given year". The intent of Order 11988 is to ensure that floodplains and floodways are kept clear of obstructions and facilities that could restrict or increase flow rates or volumes during flood conditions. Encroachment is defined as any action that would cause the 100-year water surface profile to rise by one foot or more. The 100-year floodplain has been adopted by the Federal Emergency Management Agency (FEMA) as the baseline for floodplain management. Both federal and state laws regulate development within floodplains and floodways.

According to FEMA's Flood Insurance Rate Maps (FIRM), dated August 18, 2009 (Panel Numbers 39169C0100E, 39169C0207E, 39169C0125E and 39169C0250E) BJJ is classified as Zone X, meaning that the Airport is not in a floodplain (see **Figure 1-6**).

1.8.5.3 Surface Water

The Airport is located within the Smithville-Sugar Creek watershed (HUC12 – 050400010902). Sugar Creek and several of its unnamed tributaries intersect and/or run adjacent to the Airport property line. Surface water features on and in the vicinity of the Airport are also shown on **Figure 1-6**.

The Ohio EPA identifies surface waters in Ohio according to a tiered aquatic life use designation. The aquatic life use designations are assigned to individual waterbody segments based upon the potential to support that use according to narrative and numerical criteria. These water uses include:

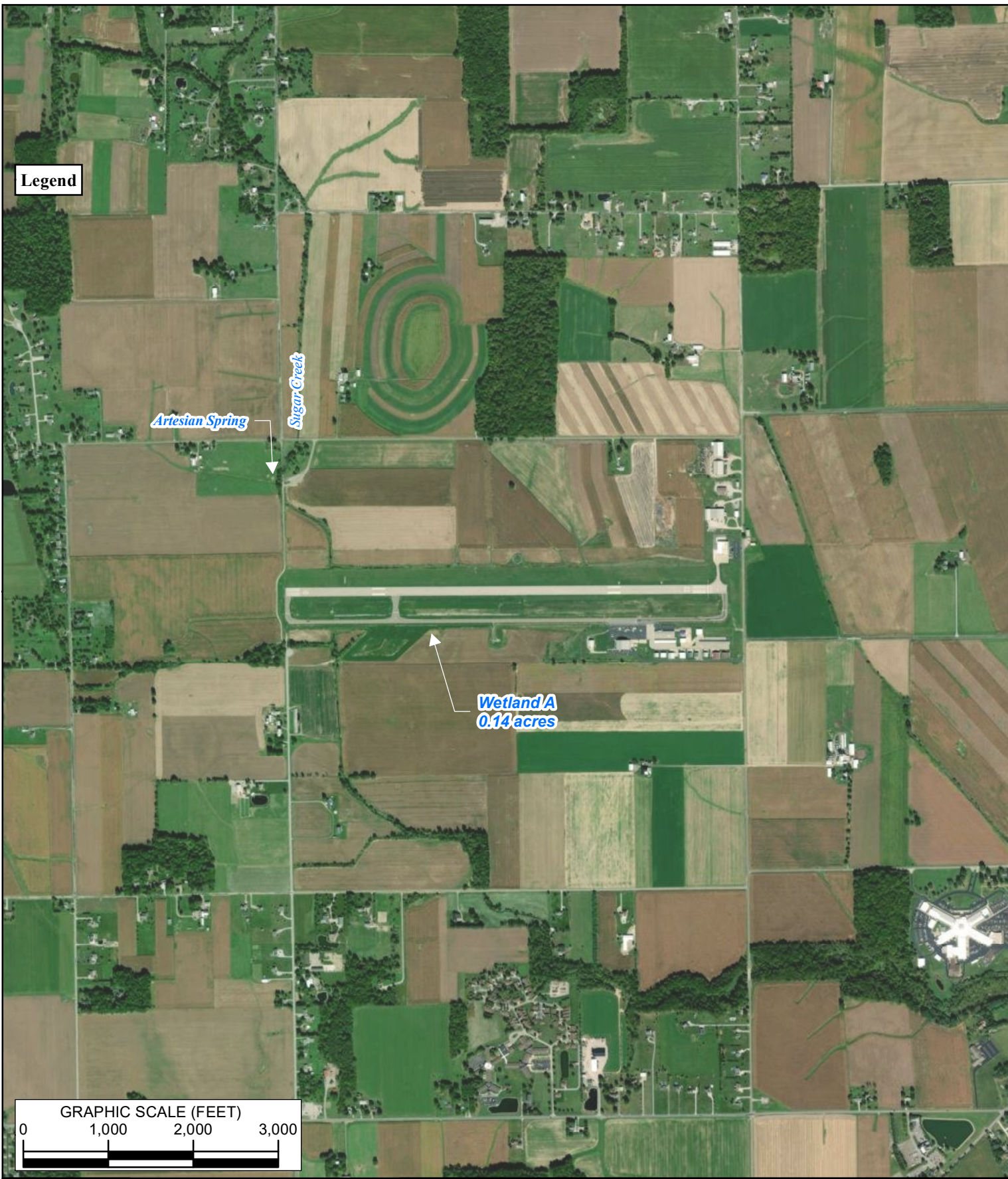
- ➔ Warmwater Habitat (WWH) is applicable to most of the state's rivers and streams.
- ➔ The Exceptional Warmwater Habitat (EWH) is used for waters with unique and unusual assemblages of aquatic life (e.g., waters with the potential for significant populations of endangered species, unusually good chemical quality, above-average abundance of sensitive species, above-average populations of top carnivores).
- ➔ The Modified Warmwater Habitat (MWH) applies to extensively modified habitats that can support the semblance of a warmwater biological community but fall short of attaining WWH because of functional and structural deficiencies due primarily to altered macrohabitat.
- ➔ Limited Resource Water (LRW) is the lowest degree of biological integrity, reflecting poor and very poor communities,

All the water resources on and within the immediate vicinity of BJJ have all been designated as WWH. For construction projects at the Airport that disturb one acre or more of land, a General Permit for Stormwater Discharges Associated with Construction Activity would have to be granted by the Ohio EPA under General Permit OHC000005. A construction Stormwater Pollution Prevention Plan (SWPPP) would be required as part of the permit.

1.8.5.4 Groundwater

BJJ is located within the Killbuck-Glaciated Pittsburgh Plateau. Groundwater moves through the soil in a downward and/or lateral direction as dictated by gravity and the placement of semi-impermeable or impermeable confining layers, moving generally east and west as indicated by the watershed. The Ohio EPA's Water Source Protection Area, used to identify aquifers that are the principal drinking water source for an area, indicates that BJJ is not located directly within a drinking water source protection area.

A natural artesian spring well is located on airport property north of the runway adjacent to Geyers Chapel Road. This spring does not serve as the primary drinking water source for any residence or commercial facility.

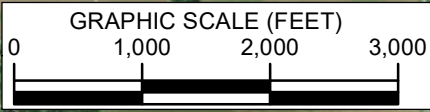


Legend

Artesian Spring

Sugar Creek

Wetland A
0.14 acres



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Wayne County Airport
OHIO



Figure 1-6

Water Resources Map

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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1.8.6 Department of Transportation, Section 303

Section 303 of the U.S Department of Transportation (DOT) Act of 1966 [49 USC 303, commonly referred to as Section 4(f)] provides for the protection of publicly owned recreational resources and requires the analysis of potential impacts to these resources arising from DOT actions. Resources protected include public parks and recreation areas, as well as wildlife and waterfowl refuges or management areas of national, state, or local significance. This section also applies to historic sites of national, state, or local significance as determined by the official that has jurisdiction over these historic resources. Such sites include those that are listed or eligible for inclusion in the National Register of Historic Places (NRHP), as well as those identified by appropriate state or local agencies as having historic significance.

There are no publicly owned parks or recreation areas within one mile of the Airport. Review of the Ohio Department of Natural Resources Lands and Facilities GIS data indicates that there are no wildlife management areas near the Airport. The NRHP spatial database indicates that there are no NRHP resources within the 0.5 mi buffer of the Airport. Formal consultation with the Ohio State Historic Preservation Office will be required before completion of any Master Plan recommendations to determine the presence of resources listed in the Ohio History Connection online mapping system. Historic resources are discussed further in Section 1.8.8.

1.8.7 Section 6(f) Resources

The U.S. Land and Water Conservation Fund Act of 1965 established the Land and Water Conservation Fund (LWCF), which was created to preserve, develop, and assure accessibility to outdoor recreational resources. Section 6(f) of this Act prohibits the conversion of lands purchased with LWCF monies to a non-recreation use. Review of the LWCF website indicates that no LWCF projects are located within 0.5 miles of the airport.

1.8.8 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) of 1966 protects properties that are listed or determined to be eligible for inclusion in the NRHP. The NHPA requires Federal agencies to consider the effects of their undertakings on historic properties and to consult with the State Historic Preservation Office (SHPO) and other parties to develop and evaluate alternatives and modification to the undertaking that could avoid or minimize potential impacts to historic resources.

To consider the effect an undertaking may have on properties that are eligible or are listed on the NRHP, an Area of Potential Effect (APE) must first be identified. According to 36 CFR Part 800.16(d), the APE is the geographic area or areas within where an undertaking may directly or indirectly alter the character or use of historic properties. Such changes may include physical destruction, damage, or alteration of a property; change in the character or the property's use or of physical features within its setting that contribute to its historic significance; and introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features. For the purposes of this evaluation, an APE of 0.5 mile was utilized. As previously discussed, the NRHP spatial database indicated that there are no NRHP resources within the 0.5 mi buffer of the Airport. Formal consultation with the Ohio State Historic Preservation Office will be required before completion of any Master Plan recommendations to determine the presence of resources listed in the Ohio History Connection online mapping system.

1.8.9 Biological Resources

1.8.9.1 Biotic Communities

Upland biotic communities on Airport property are predominantly areas of maintained grass and leased agricultural areas. Aquatic habitats are not abundant on BJJ, and those present are limited to stormwater basins, small wetlands and drainage swales that do not support an abundant habitat for obligatory aquatic wildlife.

1.8.9.2 Threatened and Endangered Species

Section 7(c) of the Endangered Species Act of 1973 (16 USC 1531 et sec.) requires that the potential impacts to rare, threatened, and endangered species of flora and fauna and their critical habitats be identified to avoid adverse impacts to these species. According to the USFWS Information for Planning and Conservation (IPaC) website, several federally protected species have the potential to be present at BJJ.

Three vertebrate species have the potential to be present within the vicinity of the Airport. The Indiana Bat (*Myotis sodalist*) and the Northern Long-eared Bat (*Myotis septentrionalis*) are both endangered species that utilize large trees with areas of exfoliating bark as summer roosting areas and maternal colonies. A third species, the Tricolored Bat (*Perimyotis subflavus*), is a proposed endangered species that roosts in trees in forested areas or in road-associated culverts. No critical habitat has been designated for the Northern Long-eared Bat or the Tricolored Bat.

The Salamander Mussel (*Simpsonia ambigua*) is a proposed endangered species that has the potential to be present within the vicinity of the Airport. No critical habitat has been designated for this species. The Monarch Butterfly (*Danaus plexippus*), is a candidate species that has the potential to be present within the vicinity of the Airport. This species requires nectar sources for the adults (wildflowers or the like) and have specific requirements for larval host plants. The Monarch Butterfly larvae feed exclusively on milkweed species. No critical habitat has been designated for this species.

One federally threatened plant species, the Eastern Prairie Fringed Orchid (*Platanthera leucophaea*) is a species that has the potential to be present within the vicinity of the Airport. This species requires full sun for optimum growth and flowering. A symbiotic relationship between the seed and soil fungi is necessary for the seedlings to become established. No critical habitat has been designated for this species. No suitable habitat for any of these listed species is found within the Airport property, and no identified critical habitat for any listed species is present at BJJ.

The IPaC also identifies multiple migratory birds classified as Birds of Conservation Concern within the boundaries of the Airport. These species include the Belted Kingfisher (*Megaceryle alcyon*), the Chimney Swift (*Chaetura pelagica*), Eastern Meadowlark (*Sturnella magna*), Lesser Yellowlegs (*Tringa flavipes*), Long-eared Owl (*asio otus*), Red-headed Woodpecker (*Melanerpes erythrocephalus*) and the Wood Thrush (*Hylocichla mustelina*). These species are identified as either breeding species or non-breeding migrants. One additional species, the bald eagle (*Haliaeetus leucocephalus*), was identified as warranting attention due to specific regulatory protection.

The Ohio Department of Natural Resources identifies state listed species by county. In Wayne County, a total of 12 species are identified as state endangered, threatened, species of concern or species of special interest. Of these, 7 are bird species, 2 are Insect species, 1 is a Fish species, and 2 are Mollusk species. No past observation data was available for the aquatic

species specific to the Wayne County Airport.

The Ohio DNR state listed plant species includes a total of 23 listed species previously observed within Wayne County. Based upon the last recorded county wide observation dates, about half of these species (13 total) have been observed within the last 20 years. And only 3 have been observed within the county in the last 10 years. These predominately herbaceous species are characterized as having specific habitat requirements and occurring within high quality ecosystems rather than isolated populations within managed areas. There has been no previous documentation of these species occurring at BJJ.

More detailed environmental analysis would be conducted prior to implementation of Master Plan recommendations, including formal consultation with federal and state agencies, confirmation of existing species within the project area through surveying, and evaluation of potential impacts to those species and their habitat areas. If appropriate, mitigation measures to address adverse impacts would be pursued. Best management practices for erosion and sedimentation would be necessary to mitigate impacts to aquatic species during construction activities.

1.8.10 Prime & Unique Farmland

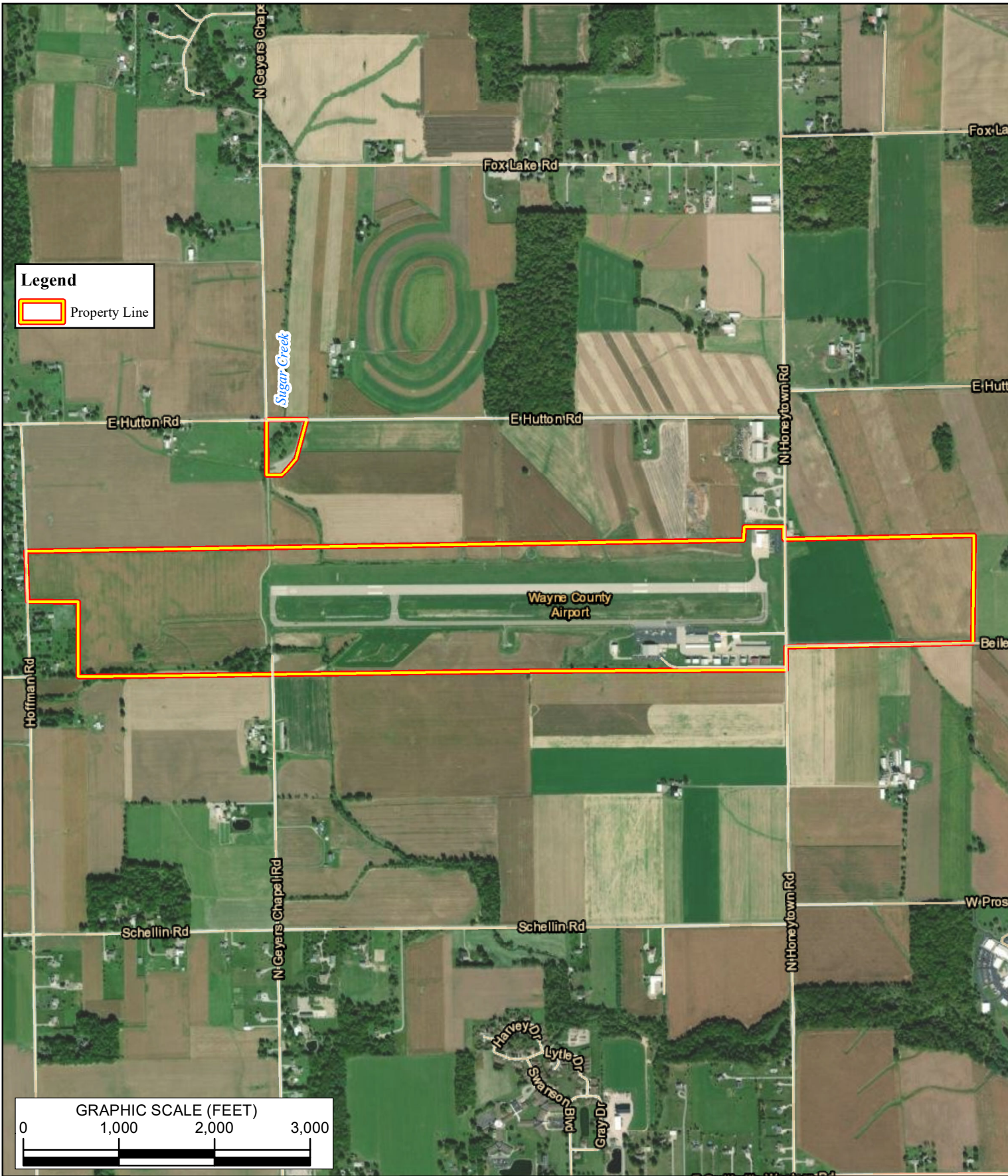
The Farmland Protection Policy Act (FPPA) limits the conversion of significant agricultural lands to non-agricultural uses because of federal actions (7 USC § 4201, et seq.). The determination of whether farmlands are subject to FPPA requirements is based on soil type; the land does not have to be actively used for agriculture. Farmland subject to FPPA requirements can be pastureland, forested, or other land types, but not open water or developed urban or transportation areas. The FPPA regulates four types of farmland soils:

- ➔ Prime Farmland
- ➔ Unique Farmland
- ➔ Farmland of Statewide Importance
- ➔ Farmland of Local Importance

Prime farmland is defined by the Natural Resources Conservation Service (NRCS) as “land that has the best combination of physical and chemical characteristics” for agriculture. This includes land with these characteristics used for livestock or timber production but not land that is already urbanized or used for water storage. Unique farmland is defined as “land other than prime farmland that is used for production of specific high-value food and fiber crops,” with such crops defined by the Secretary of Agriculture. Farmland of statewide or local importance is farmland other than prime or unique farmland that “is used for the production of food, feed, fiber, forage or oilseed crops.”

BJJ property primarily consists of soil types that are considered prime farmland, prime farmland if drained and farmland of local importance by the NRCS. A map of the different soil classifications listed by the NRCS is shown in **Figure 1-7**.

Prior to implementation of the airfield recommendations, a project-specific environmental analysis would be conducted to confirm the location of the improvements relative to farmland soils, quantify potential impacts, and coordinate with the U.S. Department of Agriculture.



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Figure 1-7

Prime Farmland Map



BBJ Master Plan Environmental Overview
Wayne County, Ohio

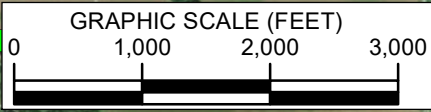
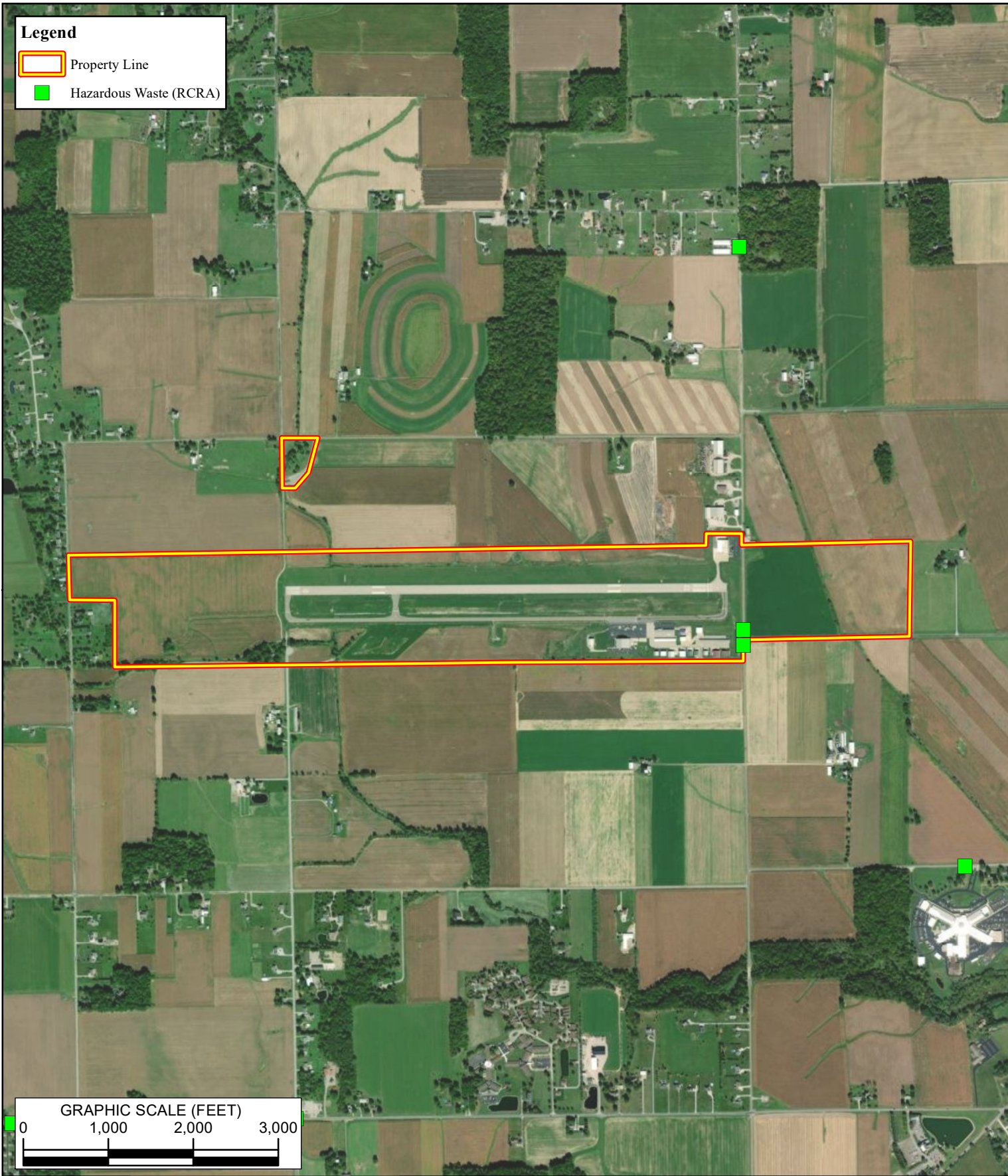
1.8.11 Hazardous Materials

Hazardous waste is a general term relating to spills, dumping, and releases of substances that could threaten human and animal life. To identify these materials and protect the environment from harmful interaction with hazardous wastes, federal laws, and regulations such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource, Conservation, and Recovery Act (RCRA) have been enacted. CERCLA prescribes a very specific process for the investigation and cleanup of sites listed on the National Priorities List (NPL), also referred to as Superfund sites. RCRA is the public law that creates the framework for the proper management of hazardous and non-hazardous solid waste. Hazardous waste impacts are typically associated with the current or future use, transfer, or generation of hazardous materials within the limits of the proposed improvements or the acquisition of properties that contain hazardous materials. Environmental concerns related to solid waste disposal range from adequate landfills for normal urban trash to the safe disposal of industrial waste.

Based on available data from the EPA, there are no Superfund sites near BJJ. Two RCRA reporting facilities associated with H&H Industrial Services Co and Rubbermaid Flight Operations are on Airport property. The location of those facilities is shown on **Figure 1-8**. Two underground storage tanks are located on or near the north side of Airport property. The northernmost underground storage tank that was associated with Wooster Industrial Complex is closed. The second underground storage tank is associated with Mid-Ohio Aviation Inc. and is currently in use. Modifications to existing Airport facilities should be evaluated for the potential to generate additional hazardous materials; however, it is not expected that any recommended project would produce wastes that could not be properly mitigated and addressed.

Legend

-  Property Line
-  Hazardous Waste (RCRA)



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Wayne County Airport
OHIO



Figure 1-8
Hazardous Waste Map

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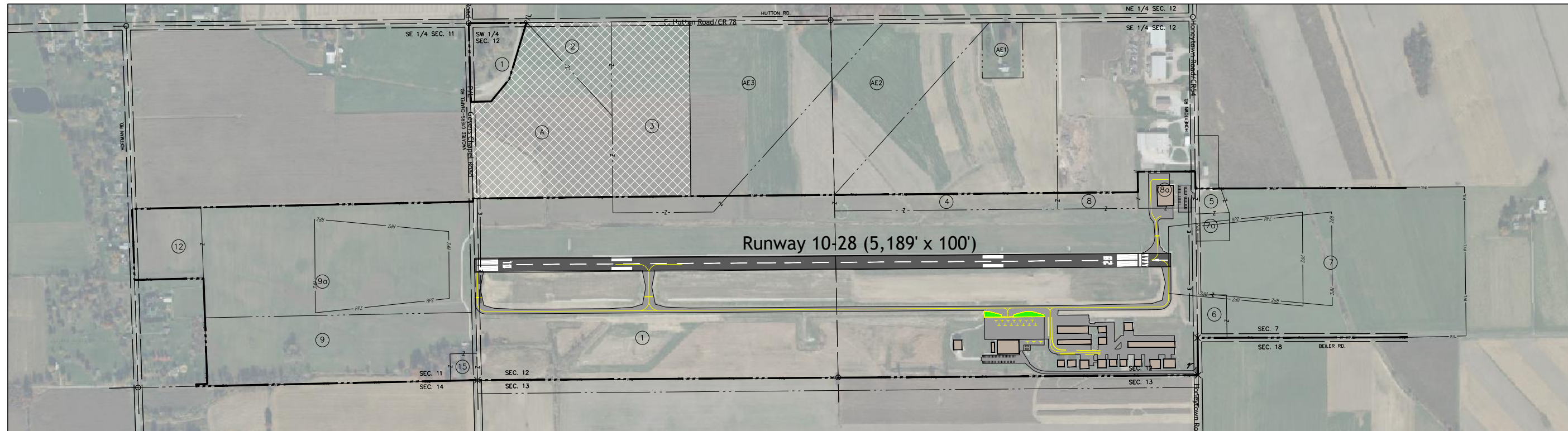
BJJ Master Plan Environmental Overview
Wayne County, Ohio

1.8.12 Summary

The projects recommended in this Airport Master Plan are anticipated to have some impacts on the environment with concerns generally focused on water quality, wetlands, water resources and protected species. As noted under each of the resource-specific sections, prior to the implementation of the proposed development projects, further environmental documentation would be required to document existing conditions at that time, determine impacts on each resource, and if appropriate, identify mitigation measures to address adverse impacts. Based on the information provided and the types of projects recommended in the Master Plan, it is anticipated that impacts can be successfully mitigated allowing implementation of the recommended plan.

1.9 Airport Property

According to the 2017 BJJ Exhibit 'A' Property Map, the Airport is currently 335 acres, comprised of 14 parcels previously purchased between 1967 and 2005. Airport sponsors have a federal obligation to submit accurate Exhibit 'A' Airport Property Inventory Maps when applying for and prior to execution of federal grants. As the airport sponsor, the Commissioners are required to maintain and update the Exhibit 'A' by submitting it to the FAA when any update is necessary. The Exhibit 'A' is a snapshot of the inventory of parcels that make up dedicated airport property. The Exhibit 'A' indicates how the land was acquired, the funding source for the land and if the land was conveyed as Federal surplus land or government property. Other detached parcels owned by the Airport Sponsor that are dedicated to airport purposes must also be shown on the Exhibit 'A'. The Exhibit 'A' must show all dedicated airport property regardless of the type of funds (AIP, state, local, etc.) used to acquire that property. The 2017 Exhibit 'A' is shown in **Figure 1-9**.



RELEASED LAND							
Federal Project Number	Parcel	Grantor	Sec.	Liber & Page	Date Acquired	Acres	
						Fee	Ease.
----	A	Board of County Commissioners	12	799/1215	June 3, 2015	44.713	

EASEMENTS							
Federal Project Number	Parcel	Grantor	Sec.	Liber & Page	Date Acquired	Acres	
						Fee	Ease.
	AE1	Wayne County Community Improvement Corp.	12	676/1322	February 15, 100		3.00
	AE2	Wayne County Community Improvement Corp.	12	676/1322	February 15, 100		46.71
	AE3	Wayne County Community Improvement Corp.	12	676/1322	February 15, 100		31.89

TITLE INTEREST IN FEE PROPERTY									
Federal Project Number	2017 Exhibit 'A'	1993 Property Map	2008 Property Map	Grantor	Sec.	Liber & Page	Date Acquired	Acres	
								Fee	Ease.
*	1	1	1	Wayne County Airport Authority	12	426/153	May 26, 1967	**185.327	
*	2	2	2	Wayne County Community Improvement Corp	12	555/185	June 7, 1979	5.14	
*	3	3	3	Wayne County Community Improvement Corp	12	600/281	June 29, 1984	19.18	
*	4	4	4	Wayne County Community Improvement Corp	12	600/281	September 18, 1984	3.984	
3-39-0093-03-89	5	5a	5	Everette W. & Marilyn J. McIntire	7	671/419	February 20, 1991	1.002	
3-39-0093-03-89	6	6	6	Jack A. Bluy	7	665/399	August 10, 1990	1.498	
3-39-0093-02-89	7	7	7	Myrtle Farms, Inc.	7	665/50	July 26, 1990	46.54	
3-39-0093-02-89	7a	7a		Myrtle Farms, Inc.	7	665/47	July 26, 1990	0.962	
3-39-0093-03-89	8	8	8	Homer A. Hess	12	677/516	August 26, 1991	1.4356	
----	8a	8a	9	Rubbermaid, Inc.	12	647/36	December 19, 1998	2.544	
3-39-0093-03-89	9	9	10	Hilda I. Wolbaugh	11	670/660	January 24, 1991	22.465	
3-39-0093-03-89	9a			Hilda I. Wolbaugh	11	669/757	December 27, 1990	38.614	
----	12	Not Shown	11	Wayne County Airport Authority	11	813/1552	November 20, 2015	6.228	
3-39-0093-03-89	15	Not Shown	12	Hilda I. Wolbaugh	11	670/658	January 24, 1991	0.92	

* Federal Participation in Land Reimbursements Under AIP grants 02, 03, 04, 05, 06, and 07 grants
 ** Property Acreage Reduced because of released amounts

LEGEND	
	EX. Building
	EX. Runway Pavement
	EX. Taxiway Pavement
	EX. Apron Pavement
	Airport Property Boundary
	Runway Protection Zone

GRAPHIC SCALE (FEET)
0 150 300 600

WAYNE COUNTY AIRPORT (BJJ)
MASTER PLAN UPDATE
Property Map

File Name: \\cha-lp.com\proj\Projects\ANY\6\078834_000\09_Design\Exhibits\Figure 1-X_Property Map.dwg - 17x11 | Modified / By: November 16, 2023 2:08:15 PM / French, Adam

2.0 FORECASTS OF AVIATION DEMAND

This Chapter of the Master Plan and Airport Layout Plan Update presents the forecast of aviation activity and demand at the Wayne County Airport over the 20-year planning horizon (2022 through 2042). The forecasts consist of projections for activity at the Airport, including based aircraft, general aviation operations, and military operations.

The forecasts of aviation activity provide the Wayne County Board of Commissioners with guidance to determine facility sizing and capacity recommendations, both airside and landside, that directly impact future development at the Airport. The forecasts will also facilitate long-term strategic planning and development plans depicted on the updated ALP.

The forecasts presented account for the impacts due to COVID-19 ('COVID' or 'the pandemic') and incorporate projected recovery levels based on industry trends and recent activity levels at BJJ. The resulting preferred, or recommended, forecast will be submitted to FAA for approval and acceptance.

It is important to note that the historical and projected activity levels herein represent calendar year data (January through December), while the FAA's Terminal Area Forecast (TAF) is organized according to the federal government's fiscal year (October through September).

2.1 Forecast Categories

Aviation demand forecasts are prepared for a variety of aviation categories, which are determined based on the type and level of activity expected at an airport over the planning horizon. These categories vary in relevance depending on the size and category of an airport and the basic objectives of the study.

As previously discussed, this Study evaluated and projected general aviation and military activity (based aircraft and operations). A description of each category is provided below.

- ➔ General Aviation Based Aircraft – Aircraft that spend more than six months of the year at a given airport and that have an agreement with the airport or a tenant for storage, is operational and can perform takeoffs and landings, and have a current valid FAA airworthiness certificate. The aircraft considered for evaluation include validated aircraft from the FAA's BasedAircraft.com registry.
- ➔ General Aviation Operations – Includes all segments of the aviation industry except commercial air carriers/regional/commuter service, scheduled cargo, and military operations.
- ➔ Military Operations – Activity performed by the United States military.

2.2 Impacts of COVID-19 on the General Aviation Industry and BJJ

In March 2020, COVID-19 began impacting the aviation industry and air travel. The impacts of COVID on the aviation system have been split in terms of types of users. With this, it was important to become familiar with industry trends and historical activity trends at BJJ, prior to 2020, to properly evaluate the level of impact COVID-19 has had on the Airport's activity.

2.2.1 COVID-19 Impacts on General Aviation

As more data and analytics have been reported, an industry trend of note was that during the

pandemic, GA users were not as heavily impacted by the COVID-19 pandemic as commercial operators. While travel and route restrictions were placed on the commercial industry, route restrictions were not placed on civil aviation; however, business and travel restrictions did have an impact on itinerant general aviation (GA) travel, though recreational flying remained relatively stable throughout the pandemic. In addition, during 2020 GA pilots began assisting with COVID-19 relief efforts by aiding in the delivery of personal protective equipment to medical facilities.

As shown in **Figure 2-1**, GA Aircraft Shipment Reports, published by the General Aviation Manufacturers Association (GAMA)², aircraft shipments in the United States declined from 2,658 aircraft to 2,408 aircraft in 2020. In 2021, aircraft shipments improved by approximately 9.9 percent with 2,646 aircraft shipments. Shipments increased again in 2022 to 2,818 aircraft, or by approximately 6.5 percent. The GA Aircraft Shipment data shows shipment levels are currently exceeding 2019 shipments and are trending upward.

Figure 2-1. GA Aircraft Shipments

<u>Aircraft Shipments & Billings: Comparison of Last Three Years</u>					
<u>AIRPLANE SHIPMENTS</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>% CH. 21-22</u>
Piston Airplanes (*)	1,324	1,331	1,409	1,524	+8.2%
Turboprop Airplanes	525	443	527	582	+10.4%
Business Jets	809	644	710	712	+0.3%
TOTAL AIRPLANE SHIPMENTS	2,658	2,408	2,646	2,818	+6.5%
TOTAL AIRPLANE BILLINGS	\$23.5B	\$20.0B	\$21.6B	22.9B	+5.8%
<u>HELICOPTERS SHIPMENTS</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>% CH. 21-22</u>
Piston Helicopters	179	142	181	194	+7.2%
Turbine Helicopters (*)	698	567	679	738	+8.2%
TOTAL HELICOPTER SHIPMENTS	877	709	860	932	+8.0%
TOTAL HELICOPTER BILLINGS	\$3.8B	\$3.4B	\$4.2B	\$4.5B	+8.5%

Source: General Aviation Manufacturers Association.

² General Aviation Manufacturers Association. "Aircraft Shipments & Billings: Comparison of Last Three Full Years." <https://gama.aero/facts-and-statistics/quarterly-shipments-and-billings/>. Accessed 14 November 2023.

BJJ did experience a decrease in filed flight plans in 2020, as shown in **Section 2.4.2** in **Figure 2-3**; however, filed flights began to increase in 2021, which continued through 2022, indicating that BJJ is recovering to pre-COVID activity levels. While operational activity was impacted, the number of based aircraft at BJJ were not negatively impacted; however, as evident in the number of filed flight plans, the operations per based aircraft are assumed to have decreased assumed as an impact of COVID-19.

2.3 Forecast Data Sources

Information factored into both planning and forecasting efforts included aviation operational trends and based aircraft activity at BJJ. The data and assumptions used to define the baseline conditions and future trends were derived from multiple sources, including:

- ➔ Airport Management – These representatives provided insight on recent general aviation activity levels and based aircraft activity, as well as insight regarding plans for future growth.
- ➔ FAA’s National Based Aircraft Inventory Program – NPAIS airports are required, and non-NPIAS airports are encouraged, to enter the aircraft that are based at their facilities into the FAA’s National Based Aircraft Inventory Program. The Program was referenced to verify based aircraft at BJJ.
- ➔ FAA 2022 Terminal Area Forecast (TAF)³ – TAF activity estimates for non-towered airports, such as BJJ, are derived from Form 5010 data, with activity levels assumed to remain static throughout the forecast horizon unless otherwise specified by a local or regional FAA official. The TAF was utilized for comparative purposes.
- ➔ FAA Traffic Flow Management System Counts (TFMSC) – The FAA’s TFMS contains air traffic activity data and fleet mix data for the National Aerospace System.
- ➔ FAA Aerospace Forecast (FY 2023-2043) – This forecast provided an overview of aviation industry trends and expected growth for the commercial passenger air carrier and general aviation activity segments. National growth rates of enplanements, operations, and fleet mixes are provided over a 20-year forecast horizon. For the purposes of forecast development, the FAA Aerospace Forecasts were used as comparisons for the basis of determining the growth of the general aviation fleet.
- ➔ FlightAware – FlightAware is an aviation company that, per the company’s website, operates the largest flight tracking and data platform. Data is received from air traffic control systems and via FlightAware’s network of ADS-B ground stations. This data was used to develop a baseline of operations that occurred at BJJ.
- ➔ 1200.aero – 1200.aero monitors and measures aviation operational data, including but not

³ Note, the ‘FAA 2022 TAF’ was published in February 2023 and represents activity at BJJ through 2021, with activity beyond 2021 representing the FAA’s activity projections.

limited to landings, takeoffs, flight plans, itinerant versus local activity, runway usage, and aircraft type.

- ➔ Woods & Poole Economics, Inc. – Woods & Poole Economics, Inc. is an independent firm that specializes in developing long-term economic and demographic projections, utilizing more than 900 economic and demographic variables. The database includes every state, Metropolitan Statistical Area (MSA), Micropolitan Statistical Area (μSA) and county in the U.S. For the purposes of this Study, data contained within the 2023 State Profile for Ohio were utilized, which contained historical data through 2021 and projections from 2022 to 2060.

2.4 Historical Aviation Activity Levels

For the purpose of this Study, historical activity levels were analyzed for both based aircraft and aircraft operations.

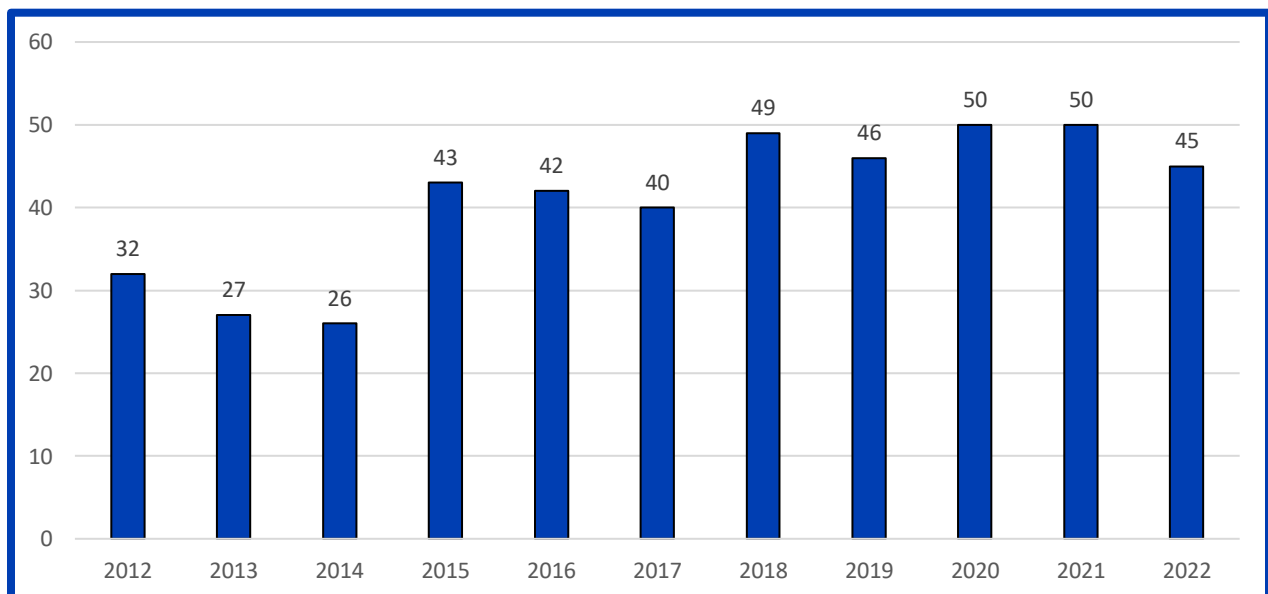
2.4.1 Historical Based Aircraft

Historical based aircraft in 2012 was provided by the FAA TAF, and based aircraft from 2013 through 2022 was provided by the FAA’s National Based Aircraft Inventory Program.

The number of based aircraft at BJJ has experienced periods of fluctuations between 2012 and 2022, as seen in **Figure 2-2**. Based aircraft were lowest in 2014 with 26 aircraft and highest in 2020 and 2021 with 50 based aircraft.

In 2022, the Airport had 45 validated based aircraft consisting of 32 single-engine aircraft, 3 multi-engine aircraft, 5 jets, and 5 helicopters. In addition to these 45 validated based aircraft, BJJ had nine aircraft within leased hangar space at the Airport, for a total of 54 aircraft. Therefore, for the purpose of this forecast, a baseline of 45 validated based aircraft was assumed.

Figure 2-2. Historical Based Aircraft



Source: FAA 2022 TAF, FAA’s National Based Aircraft Inventory Program, CHA, 2023.

2.4.2 Historical General Aviation Operations

Historical operations at BJJ consisted of general aviation and military activity. The Airport initially reported 4,934 operations in 2022; however, for the purpose of this forecast, ADS-B data was acquired from FlightAware and analyzed to account for additional operations not previously captured. Note, FlightAware does not track military related activity, thus military operations were acquired via TFMSC. As shown in **Table 2-1**, in 2022, BJJ experienced 5,794 GA operations and 6 military flights.

FAA TFMSC data was also analyzed to evaluate trends in historically filed flight plans, as shown in **Figure 2-3**.

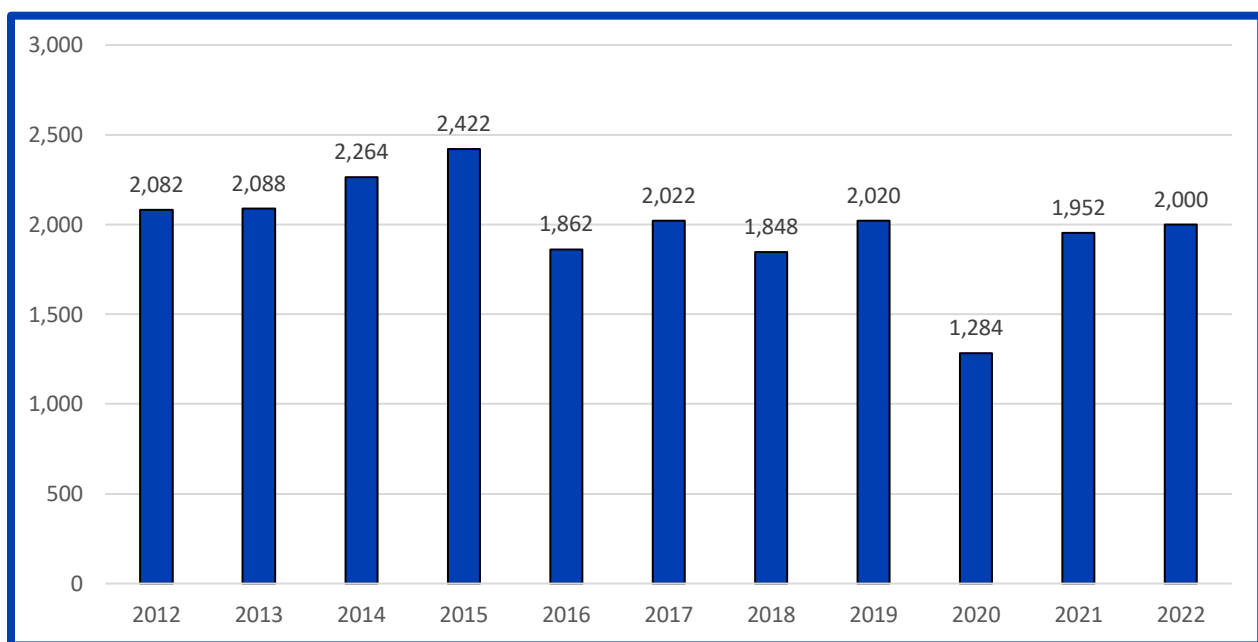
Table 2-1. Historical Operations (Base Year 2022)

Year	General Aviation	Military	Historical Ops
2022	5,794	6	5,800

Note: Military operations were provided via the FAA TFMSC, while GA operations were provided via FlightAware.

Source: FAA TFMSC (Military Activity), FlightAware, CHA, 2023.

Figure 2-3. BJJ Historical Filed Flight Plans



Note: The totals shown within this figure only include those reported in the TFMSC, or those with filed flight plans.

Source: FAA TFMSC, CHA, 2023.

To assist with future activity tracking, the Board was able to retain an aircraft operation counting and analysis system (1200.aero), which was installed in July 2023.

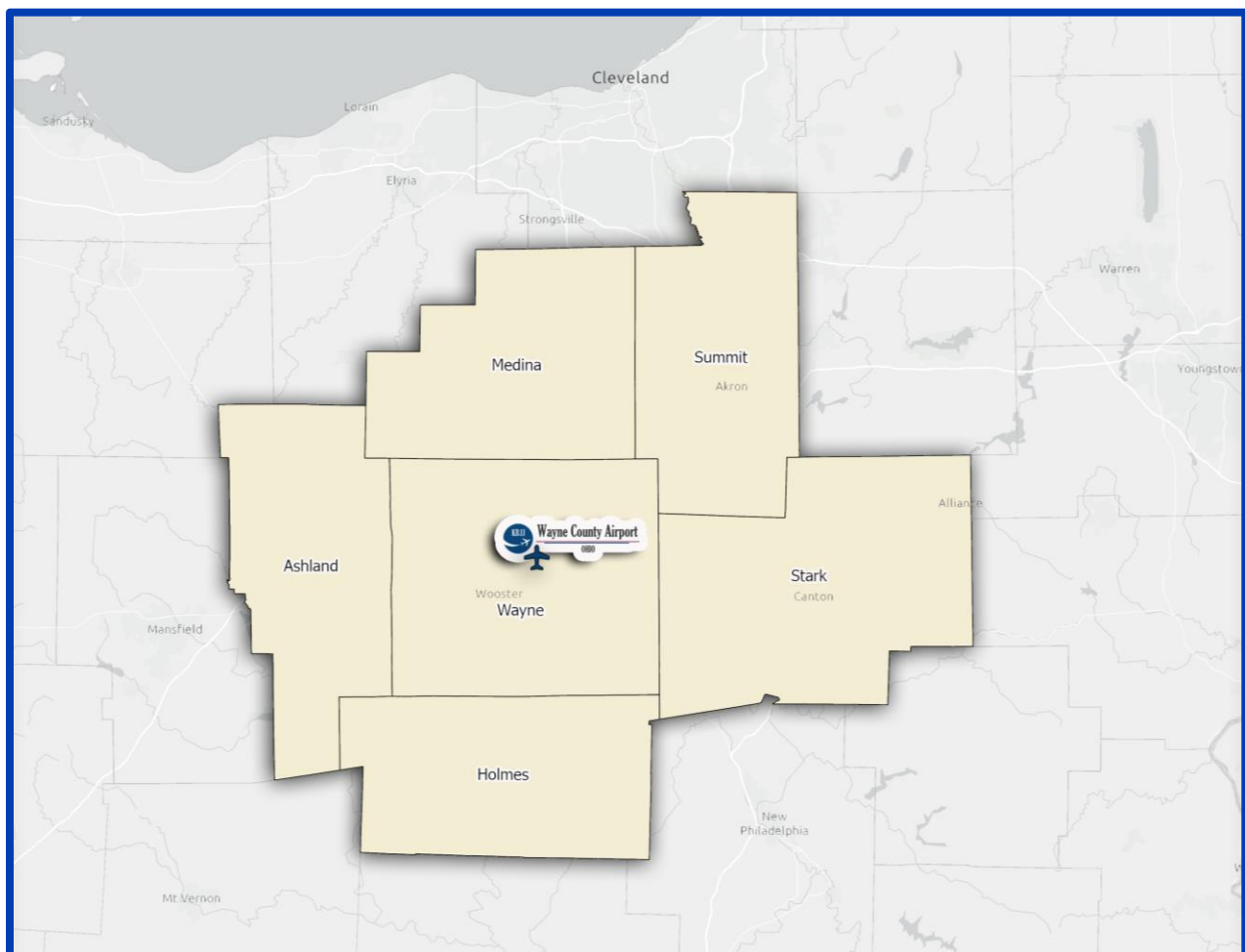
2.5 Socioeconomic Overview

The factors that have the greatest impact on the growth prospects of an airport are the socioeconomic characteristics (i.e., population, employment, and personal income per capita) present within the airport's catchment, or market, area.

An airport's catchment area is defined as the locale in which an airport captures the majority of its users. To determine the catchment area, an evaluation using socioeconomic factors was conducted to identify which airports the local area population are most likely to use based on proximity to other airports in the region, with respect given to drive-time and demographics. A radius of 30-miles was applied around the vicinity of the Airport to determine a general catchment area and to estimate potential growth or leakage of services. This area captures the majority share of users with aircraft based at BJJ. This area also accounts for those users who prefer use of BJJ rather than using an airport with a control tower and with more air traffic.

As shown in **Figure 2-4**, the catchment area for BJJ consists of the following counties within Ohio (OH): Ashland, Holmes, Medina, Stark, Summit, Wayne.

Figure 2-4. Catchment Area for BJJ



Source: CHA, 2023.

Although included in the catchment area, the socioeconomics of Wayne County were evaluated as a stand-alone county for the purpose of comparison. Socioeconomic factors were also analyzed for the State of Ohio and the United States.

Socioeconomics data was acquired from Woods & Poole Economics, Inc. For the purposes of this Study, data contained within the 2023 State Profile for Ohio was utilized, which contained historical data through 2021 and projections from 2022 to 2060.

2.5.1 COVID-19 Disclaimer

Although 2021 represents the last year of historical socioeconomic data provided, Woods and Poole Economics continues to analyze the effects of COVID-19 on the economy and the impacts on the provided projections. Per Woods and Poole’s State Profiles for Florida, “Despite a significant 2020 and 2021 short-term impact, COVID-19 itself does not appear to have made a quantifiable long-term economic impact that would affect U.S. economic growth beyond 2024 and through 2060.”

2.5.2 Population, Employment, and Personal Income Per Capita

The United States, State of Ohio, and Wayne County are each projected to experience a continuous increase in population, employment, and personal income per capita.

The population within the BJJ catchment area is projected to slightly decrease near the end of the forecast horizon in 2041 and 2042; however, the population within the BJJ catchment is still projected to grow overall by approximately 1.8 percent over the 20-year planning horizon. While population within the catchment area is projected to fluctuate, employment and personal income per capita is projected to steadily increase throughout the forecast horizon.

In summary, the economic outlook of the BJJ catchment area and Wayne County, Ohio are projected to be relatively positive, similar to that of the State of Ohio and United States. This strong outlook of socioeconomic trends indicates the potential for increasing levels of discretionary spending and future prosperity of aviation users that are anticipated to utilized BJJ.

A summary table of projected socioeconomics is portrayed in **Table 2-2**, while a full socioeconomic overview additional supporting tables are provided in **Appendix A**.

Table 2-2. Socioeconomic Overview

Year	BJJ Catchment Area	CAGR	Wayne County, OH	CAGR	State - Ohio	CAGR	United States	CAGR
Population								
2022	1,305,181	-0.1%	116,559	-0.1%	11,756,058	0.0%	333,287,557	0.4%
2027	1,316,795	0.2%	118,030	0.3%	11,889,703	0.2%	344,557,385	0.7%
2032	1,324,885	0.1%	119,147	0.2%	11,998,336	0.2%	355,532,044	0.6%
2037	1,328,862	0.1%	119,852	0.1%	12,076,901	0.1%	366,031,910	0.6%
2042	1,329,022	0.002%	120,165	0.1%	12,127,585	0.1%	376,080,106	0.5%
CAGR 2022 - 2042	-	0.1%	-	0.2%	-	0.2%	-	0.6%
Growth Rate 2022 - 2042	-	1.8%	-	3.1%	-	3.2%	-	12.8%

Year	BJJ Catchment Area	CAGR	Wayne County, OH	CAGR	State - Ohio	CAGR	United States	CAGR
Employment								
2022	789,708	0.4%	70,516	0.3%	7,196,074	0.6%	208,286,623	1.2%
2027	829,162	1.0%	73,823	0.9%	7,570,828	1.0%	224,079,836	1.5%
2032	857,916	0.7%	75,815	0.5%	7,845,424	0.7%	237,718,837	1.2%
2037	883,097	0.6%	77,532	0.4%	8,091,667	0.6%	251,080,236	1.1%
2042	904,934	0.5%	79,002	0.4%	8,312,629	0.5%	264,243,080	1.0%
CAGR 2022 - 2042	-	0.7%	-	0.6%	-	0.7%	-	1.2%
Growth Rate 2022 - 2042	-	14.6%	-	12.0%	-	15.5%	-	26.9%
Personal Income Per Capita								
2022	\$57,152	5.0%	\$53,500	4.7%	\$59,215	4.9%	\$66,968	5.4%
2027	\$72,115	4.8%	\$66,938	4.6%	\$75,427	5.0%	\$85,161	4.9%
2032	\$90,767	4.7%	\$83,582	4.5%	\$94,975	4.7%	\$107,378	4.7%
2037	\$114,388	4.7%	\$104,584	4.6%	\$119,675	4.7%	\$135,487	4.8%
2042	\$143,951	4.7%	\$130,764	4.6%	\$150,534	4.7%	\$170,682	4.7%
CAGR 2022 - 2042	-	4.7%	-	4.6%	-	4.8%	-	4.8%
Growth Rate 2022 - 2042	-	151.9%	-	144.4%	-	154.2%	-	154.9%

Note: Compound Annual Growth Rate (CAGR).; Source: Woods & Poole Economics, Inc., CHA, 2023.

2.6 General Aviation Forecast Analysis

General aviation (GA) includes all segments of the aviation industry except commercial air carriers/regional/commuter service, scheduled cargo, and military operations. GA represents the largest percentage of civil aircraft in the U.S. and accounts for most operations handled by towered and non-towered airports. GA activities include flight training, sightseeing, recreational, aerial photography, law enforcement, medical flights, as well as business, corporate, and personal travel via air taxi charter operations. General aviation aircraft encompass a broad range of types: from single-engine piston aircraft to large corporate jets, as well as helicopters, gliders, and home-built/kit aircraft.

General aviation operations are further categorized as either itinerant or local operations. Local operations are those performed by aircraft that remain in the local traffic pattern or within a 20-mile radius of the tower. Local operations are commonly associated with training activity and flight instruction, while also including touch-and-go operations. Itinerant operations are arrivals or departures, other than local operations, performed by either based or transient aircraft that do not remain in the airport traffic pattern or within a 20-nautical mile radius.

2.6.1 Based Aircraft Forecast

The FAA provides multiple methodologies to be used to forecast GA based aircraft. To determine the most reasonable scenario for BJJ, it was necessary to perform and compare each forecast scenario to identify which best support the key factors and variables that comprise the specific direction of the Airport and its market. This section provides the methodologies that were analyzed for the development of the forecast of GA based aircraft at BJJ, as follows: FAA Aerospace Forecast Analysis; FAA TAF-Based Growth Scenarios; Historical Trend Scenarios; Market Share Scenarios, and Econometric Scenarios. The result of each methodology is summarized in **Table 2-3**.

Table 2-3. Based Aircraft Forecast Methodologies

Year	FAA Aerospace	FAA TAF-Based		Historical Trend (Pre-COVID)			Historical Trend (COVID)			Market Share		Econometrics			
		BJJ TAF-Based	National TAF-Based	3-Year	5-Year	7-Year	3-Year	5-Year	10-Year	Static Regional	Adjusted Static Regional	Population-Based	Employment-Based	Income-Based	Population-Employment-Income-Based
2022	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
2023	45	45	45	46	50	47	45	46	47	46	45	45	46	47	46
2024	44	45	46	48	57	50	44	47	48	46	45	45	46	50	47
2025	44	45	46	49	63	53	44	48	50	46	46	45	47	52	48
2026	45	45	47	51	71	55	44	49	52	46	46	45	47	54	49
2027	45	45	47	52	80	58	43	51	53	46	46	45	47	57	50
2028	44	45	47	54	89	61	43	52	55	47	46	45	48	59	51
2029	45	45	48	56	100	65	43	53	57	47	47	46	48	62	51
2030	45	45	48	57	112	68	42	54	59	47	47	46	48	65	52
2031	46	45	48	59	126	72	42	56	61	47	47	46	49	68	53
2032	45	45	49	61	141	76	42	57	63	48	47	46	49	71	54
2033	45	45	49	63	158	80	42	58	65	48	48	46	49	75	55
2034	45	45	50	65	177	84	41	60	68	48	48	46	49	78	56
2035	45	45	50	67	198	88	41	61	70	48	48	46	50	82	57
2036	45	45	50	69	222	93	41	63	73	48	48	46	50	86	58
2037	45	45	51	71	249	98	40	64	75	49	49	46	50	90	59
2038	45	45	51	73	279	103	40	66	78	49	49	46	51	94	60
2039	45	45	52	75	313	109	40	67	80	49	49	46	51	99	61
2040	46	45	52	78	351	114	39	69	83	49	49	46	51	103	63
2041	46	45	53	80	393	121	39	70	86	50	50	46	51	108	64
2042	47	45	53	83	441	127	39	72	89	50	50	46	52	113	65
CAGR 2022-2042	0.2%	0.0%	0.8%	3.1%	12.1%	5.3%	-0.7%	2.4%	3.5%	0.5%	0.5%	0.1%	0.7%	4.7%	1.9%
Growth 2022-2042	4.4%	0.0%	17.8%	84.4%	880.0%	182.2%	-13.3%	60.0%	97.8%	11.1%	11.1%	2.2%	15.6%	151.1%	44.4%

Source: FAA Aerospace Forecast (FY 2023-2043), FAA 2022 TAFs, FAA's National Based Aircraft Inventory Program, Woods & Poole Economics, Inc., CHA, 2023.

As previously stated in **Section 2.4.1**, BJJ had 45 based aircraft in 2022.

2.6.1.1 FAA Aerospace Forecast Analysis

In the FAA Aerospace Forecast methodology, annual fleet mix growth projections – provided in the FAA Aerospace Forecasts (FY 2023-2043) – were used to project the number of based aircraft at BJJ throughout the forecast period. This methodology assumed that BJJ GA based aircraft will grow at the FAA projected national rate and will maintain their respective share of fleet mix throughout the forecast period, as shown in **Table 2-4**. The FAA Aerospace Forecast indicates that piston (single- and multi-engine) will steadily decrease, while jet aircraft and helicopters are projected to increase presence at airports.

In 2022, based aircraft at BJJ were comprised of 32 single-engine aircraft, 3 multi-engine aircraft, 5 jets, and 5 helicopters. Founded on the national projected trends, and as shown in **Table 2-5**, single-engine aircraft would decrease by approximately 12.5 percent. The Airport would retain the number of multi-engine aircraft, while jets and helicopters would increase throughout the forecast horizon.

Table 2-4. FAA Aerospace National GA Fleet Mix Growth Rates

Period	Single-Engine	Multi-Engine	Turboprop	Jet	Helicopter
CAGR 2022-2027	-0.9%	-0.5%	0.2%	3.2%	1.5%
CAGR 2027-2032	-0.8%	-0.3%	0.5%	2.9%	1.5%
CAGR 2032-2037	-0.7%	-0.2%	0.9%	2.6%	1.5%
CAGR 2037-2042	-0.5%	-0.1%	1.2%	2.3%	1.4%

Source: FAA Aerospace Forecast (FY 2023-2043), CHA, 2023.

Table 2-5. FAA Aerospace Forecast Analysis (BJJ GA Based Aircraft)

Year	Single-Engine	Multi-Engine	Turboprop	Jet	Helicopter	Total
2022	32	3	0	5	5	45
2027	31	3	0	6	5	45
2032	29	3	0	7	6	45
2037	28	3	0	8	6	45
2042	28	3	0	9	7	47
CAGR 2022-2042	-0.7%	0.0%	-	3.0%	1.7%	0.2%
Growth 2022-2042	-12.5%	0.0%	-	80.0%	40.0%	4.4%

Source: FAA Aerospace Forecast (FY 2023-2043), FAA's National Based Aircraft Inventory Program, CHA, 2023.

While the trends in fleet mix may be reflective of future trends at BJJ, this scenario was not chosen to represent future based aircraft at BJJ, as it was believed to be too conservative.

2.6.1.2 FAA TAF-Based Growth Scenarios

Two TAF-based growth scenarios were performed and are summarized below, with results shown in **Table 2-3**.

FAA TAF-Based Growth Scenario (TAF for BJJ)

The FAA TAF-based growth scenario assumed the FAA 2022 TAF's projected based aircraft year-over-year growth from 2022 through 2042 for BJJ and applied that assumption to actual airport-reported data. Per the FAA 2022 TAF (shown in **Appendix B**), based aircraft in 2022 were projected at 49; however, the actual based aircraft count in 2022 was 45 aircraft. The year-over-year TAF growth rate for BJJ based aircraft was applied to the actual 45 based aircraft and projected through 2042, assuming the TAF growth rate for the respective years. Note, the FAA TAF projects static growth throughout the forecast horizon; therefore, this scenario projected the Airport to retain 45 based aircraft over the 20-year planning horizon, with no change or variance.

This scenario was not chosen to represent future based aircraft at BJJ, as based aircraft are anticipated to grow rather than remain static based on anticipated future airport development.

FAA National TAF-Based Growth Scenario

The FAA National TAF-based growth scenario methodology assumed the FAA 2022 TAF's projected based aircraft year-over-year growth from 2022 through 2042 for national based aircraft and applied that assumption to actual airport-reported data. For example, per the FAA's national TAF, national based aircraft are projected to increase by approximately 0.92 percent from 2022 to 2023. This growth rate of 0.92 was applied to actual 2022 based aircraft (45) for a total of 45 based aircraft in 2023. This methodology was carried out through 2042. While this scenario projects growth in based aircraft, it was not chosen to represent the recommended forecast as it was believed to be too conservative. Rather, historical trends experienced at BJJ, as well as the Airport's market share and catchment area's econometrics, were analyzed.

The FAA National TAF can be found in **Appendix B**.

2.6.1.3 Historical Trend Scenarios

Two historical trend scenarios were performed and are described in the following paragraphs, with results shown in **Table 2-3**.

Pre-COVID Historical Trends

In the pre-COVID historical trend scenario, trends prior to the pandemic from 2012 to 2019 were determined and assumed throughout the forecast horizon. Three-year (2016 to 2019), five-year (2014 to 2019), and seven-year (2012 to 2019) trends were evaluated, with historical CAGRs of approximately 3.1 percent, 12.1 percent, and 5.3 percent, respectively. The pre-COVID historical trend scenarios were not chosen to represent the recommended forecast, as they were believed to be too aggressive.

COVID Historical Trends

In the COVID historical trend scenarios, activity during COVID was included within the analyses. A 3-year (2019 to 2022), 5-year (2017 to 2022), and a 10-year (2012 to 2022) historical trend was evaluated, with historical CAGRs of approximately 0.7 percent, 2.4 percent, and 3.5 percent, respectively. The three-year COVID historical trend was believed to be too conservative, while the five-year and seven-year trends were believed to be too aggressive; thus, these scenarios were not picked to represent the recommended based aircraft forecast for BJJ.

2.6.1.4 Market Share Scenarios

Two market share scenarios were performed and are described in the following paragraphs, with results summarized in **Table 2-3**.

Static Regional Market Share

The static regional market share scenario used the aggregate, regional level forecast of based aircraft projections from the FAA's 2022 TAF for the individual National Plan of Integrated Airport Systems (NPIAS) airports within 30 nautical miles of BJJ, which includes Medina Municipal Airport (1G5), Kent State University Airport (1G3), Mansfield Lahm Regional Airport (MFD), Ashland County Airport (3G4), Wadsworth Municipal Airport (3G3), Akron-Canton Airport (CAK), Akron Fulton Airport (AKR), and Holmes County Airport (10G), to derive forecasts for BJJ based on market share. This methodology assumed BJJ will maintain its current level, or static market share (approximately 7.8 percent), of based aircraft relative to regional based projections throughout the planning period.

Adjusted Static Regional Market Share

An evaluation of the 10-year historical market share at BJJ on a regional level determined that over the 10-year period, the BJJ market share increased from approximately 5.5 percent in 2012 to approximately 7.8 percent in 2022. As such, building upon the static regional market share scenario, this forecast assessed that BJJ will continue to capture a larger share of the regional market share.

Each of the market share methodologies resulted in four additional based aircraft over the 20-year planning horizon, which were believed to be too conservative.

2.6.1.5 Econometric Scenarios

As defined by Merriam-Webster, econometrics is "the application of statistical methods to the study of economic data and problems."⁴ The GA based aircraft econometric scenarios were a result of examining the year-over-year socioeconomic projections within the BJJ catchment area, and then applying incremental growth rates to the Airport's based aircraft throughout the forecast horizon. A population-based, employment-based, income-based, and population-employment-income-based scenario were all performed. Note, the combined population-employment-income-based scenario applied the average year-over-year growth rates of each socioeconomic factor for each respective year throughout the forecast horizon. The results of each scenario are summarized in **Table 2-3**.

The population-based scenario resulted in minimal growth, with the addition of one based aircraft over the 20-year planning horizon. The employment-based scenario was conservative with the addition of only seven based aircraft during the forecast period. In contrast, the income-based scenario was too aggressive, reflecting approximately 151.1 percent growth in 20-years.

After further evaluation, the population-employment-income-based scenario was chosen to represent the preferred GA based aircraft forecast at BJJ, as this forecast was qualitative in nature and projects steady, conservative growth while considering economic factors within the Airport's catchment area.

2.6.1.6 Recommended Based Aircraft Forecast (By Aircraft Type)

The future breakdown of aircraft by type were assumed to reflect historical trends experienced at

⁴ Merriam-Webster. *Econometric Definition & Meaning* - Merriam-Webster. <https://www.merriam-webster.com/dictionary/econometric>. Accessed 14 November 2023.

BJJ, as shown in **Table 2-6**.

Table 2-6. Recommended GA Based Aircraft Forecast (By Aircraft Type)

Year	Single-Engine	Multi-Engine	Jet	Helicopter	Total
2022	32	3	5	5	45
2027	35	3	6	6	50
2032	38	4	6	6	54
2037	41	4	7	7	59
2042	47	4	7	7	65

Source: FAA 2022 TAFs, FAA's National Based Aircraft Inventory Program, Woods & Poole Economics, Inc., CHA, 2023.

2.6.2 General Aviation Operations Forecast

Like the based aircraft forecast, more than one methodology exists that could be used to forecast GA operations. To determine the most plausible and reasonable scenario for BJJ, it was necessary to perform and compare each forecast scenario to indicate which best supports the key factors and variables that comprise the specific operational environment at the Airport.

This section provides the methodologies that were analyzed for the development of the forecast of GA operations at BJJ, as follows: FAA TAF-Based Growth Scenario; Static Regional Market Share Scenario; Econometric Scenario; and Operations Per Based Aircraft (OPBA).

The result of each methodology is summarized in **Table 2-7**.

Table 2-7. General Aviation Operations Forecast Methodologies

Year	FAA TAF-Based	Static Regional Market Share	Econometrics				OPBA	OPBA (Smoothed)
			Population-Based	Employment-Based	Income-Based	Population-Employment-Income-Based		
2022	5,794	5,794	5,794	5,794	5,794	5,794	5,794	5,794
2023	5,900	6,028	5,805	5,865	6,099	5,923	5,923	5,923
2024	6,009	6,103	5,816	5,936	6,383	6,043	6,052	6,052
2025	6,119	6,214	5,827	5,989	6,679	6,158	6,180	6,180
2026	6,231	6,240	5,836	6,037	6,988	6,273	6,309	6,309
2027	6,346	6,266	5,846	6,083	7,311	6,388	6,438	6,438
2028	6,462	6,292	5,854	6,128	7,652	6,506	6,567	6,567
2029	6,582	6,319	5,862	6,172	8,011	6,627	6,567	6,695
2030	6,702	6,347	5,869	6,214	8,389	6,749	6,695	6,824
2031	6,824	6,374	5,876	6,255	8,786	6,872	6,824	6,953
2032	6,949	6,403	5,881	6,294	9,202	6,998	6,953	7,082
2033	7,076	6,431	5,887	6,333	9,637	7,124	7,082	7,210
2034	7,205	6,460	5,891	6,371	10,094	7,253	7,210	7,339
2035	7,337	6,490	5,895	6,408	10,572	7,383	7,339	7,468
2036	7,471	6,520	5,897	6,444	11,072	7,514	7,468	7,597
2037	7,608	6,550	5,899	6,479	11,597	7,647	7,597	7,725
2038	7,748	6,581	5,900	6,513	12,145	7,782	7,725	7,854
2039	7,890	6,612	5,901	6,546	12,718	7,918	7,854	7,983
2040	8,034	6,644	5,901	6,578	13,316	8,055	8,112	8,112
2041	8,182	6,676	5,900	6,609	13,941	8,193	8,240	8,240
2042	8,332	6,708	5,900	6,639	14,594	8,333	8,369	8,369
CAGR 2022-2042	1.8%	0.7%	0.1%	0.7%	4.7%	1.8%	1.9%	1.9%
Growth 2022-2042	43.8%	15.8%	1.8%	14.6%	151.9%	43.8%	44.4%	44.4%

Source: FAA 2022 TAF, FlightAware, Woods & Poole Economics, Inc., CHA, 2023.

2.6.2.1 FAA TAF-Based Growth Scenario

The FAA TAF-based GA operations scenario assumed the FAA 2022 TAF's projected annual growth rate from 2022 to 2042 for GA operations and applied the projected annual growth to actual airport-reported GA activity data.

It is important to note that actual activity levels at BJJ in 2022 included 5,794 GA operations compared to the 18,536 operations reported in the TAF, or approximately 68.7 percent lower than the FAA's TAF projections. Although applying the growth rates projected in the TAF results in a forecast with realistic activity levels, further analysis was conducted to provide further justification and reliability, as the FAA 2022 TAF is not reflective of activity occurring at BJJ.

2.6.2.2 Static Regional Market Share Scenario

Like the static regional market share scenario for based aircraft, this scenario used the aggregate, regional level forecast of general aviation projections from the FAA's 2022 TAF for individual NPIAS airports within 30 nautical miles of BJJ [(1G5, 1G3, MFD, 3G4, 3G3, CAK, AKR, and 10G)] to derive forecasts for BJJ based on market share. This methodology assumed BJJ will maintain its current level, or static market share (approximately 1.7 percent), of general aviation operations relative to regional projections throughout the planning period.

While this scenario projects growth in operations, it was not chosen to represent the recommended forecast, as several of the FAA 2022 TAFs used as comparison project static growth which may not be reflective of activity expected to occur at the respective airports. Thus, a closer look was taken at socioeconomic factors within the catchment area, as shown in the subsequent section.

2.6.2.3 Econometric Scenarios

Similar to the GA based aircraft econometric scenarios, the econometric scenarios performed herein were a result of examining the year-over-year socioeconomic projections within the BJJ catchment area, and then applying the incremental growth rates to the Airport's GA operations throughout the forecast horizon. A population-based, employment-based, income-based, and population-employment-income-based scenario were all performed. Note, the combined population-employment-income-based scenario applied the average year-over-year growth rates of each socioeconomic factor for each respective year throughout the forecast horizon. The results of each scenario are summarized in **Table 2-7**.

The population-based and employment-based scenarios were believed to be too conservative, while the income-based scenario is too aggressive with an overall growth of approximately 151.9 percent over the 20-year planning period. While the population-employment-income-based scenario indicates realistic activity projections, it was not chosen to represent the recommended GA operations forecast. Rather, activity at a GA airport such as BJJ is highly reliant on activity conducted via the aircraft based at the airport; therefore, an Operations Per Based Aircraft (OPBA) scenario was performed.

2.6.2.4 Operations Per Based Aircraft

The OPBA scenario is a straightforward forecasting methodology which assumes the total number of annual operations is representative of the number of aircraft based at BJJ. When projecting operations using OPBA for BJJ, it was assumed that OPBA will remain static throughout the forecast period at levels consistent with actual activity in 2022 (116 operations per based aircraft). Once the OPBA of 116 was applied to the preferred based aircraft forecast, the forecast was

exponentially smoothed, which helps to better identify patterns or trends in a time series. See **Table 2-7**.

As shown, GA operations were projected to grow by approximately 1.9 percent annually. As indicated via 1200.aero, and as shown in **Appendix C**, local operations makeup an average of approximately 24.3 percent of all GA operations, which can often be linked to based aircraft activity. Given the high makeup of local activity, it can be assumed that based aircraft will drive GA operations at BJJ; therefore, this scenario was chosen to represent the preferred GA operations forecast.

2.6.2.5 Recommended General Aviation Operations Forecast (Itinerant Vs. Local)

Projected GA operations were further broken down and categorized by either itinerant or local, as shown in **Table 2-8**. To project the percent split in activity, future operations were projected to retain the average split currently being experienced at BJJ, as portrayed in 1200.aero: approximately 75.7 percent itinerant and 24.3 percent local.

Table 2-8. Recommended GA Operations Forecast (Itinerant Vs. Local)

Year	Itinerant	Local	Total GA Operations
2022	4,389	1,405	5,794
2027	4,877	1,561	6,438
2032	5,365	1,717	7,082
2037	5,852	1,873	7,725
2042	6,339	2,030	8,369
CAGR 2012-2042	1.9%	1.9%	1.9%
Growth 2012-2042	44.4%	44.4%	44.4%

Source: FlightAware, Woods & Poole Economics, Inc., CHA, 2023.

2.7 Military Activity Forecast

Military operations have fluctuated over the last decade; however, unlike other types of operations, historical trends in military activity levels are not representative of future activity. Rather, military operations are a function of military decisions, national security priorities, and budget pressures; therefore, military operations are not projected in the same manner as other types of operations occurring at the Airport.

During the baseline year (2022), per the FAA TFMSC, BJJ had six (6) military operations. For the purposes of this forecast, projected military operations were assumed to remain static at the baseline year levels throughout the forecast horizon, with all activity being categorized as itinerant operations.

Similar to military operations, the standard methodologies used for determining general aviation-based aircraft cannot be applied when determining military based aircraft, thus military based aircraft are assumed to remain static.

Currently, the military does not have any based aircraft stationed at BJJ; therefore, it was assumed that BJJ will not have military owned based aircraft during the forecast period.

2.8 Recommended Forecast Summary

The following tables present a summary of recommended general aviation and military activity levels as detailed in the previous sections. The recommended forecasts will be used as the basis for future planning for the Airport. **Table 2-9** presents the complete summary of the recommended forecast.

Table 2-9. Recommended Forecast Summary

Year	Based Aircraft	Operations				
		General Aviation		Military		Total
		Itinerant	Local	Itinerant	Local	
2022	45	4,389	1,405	6	0	5,800
2027	50	4,877	1,561	6	0	6,444
2032	54	5,365	1,717	6	0	7,088
2037	59	5,852	1,873	6	0	7,731
2042	65	6,339	2,030	6	0	8,375
CAGR 2012-2042	1.9%	1.9%	1.9%	0.0%	-	1.9%
Growth 2012-2042	44.4%	44.4%	44.4%	0.0%	-	44.4%

Source: FAA 2022 TAFs, FAA TFMSC, FAA's National Based Aircraft Inventory Program, FlightAware, Woods & Poole Economics, Inc., CHA, 2023.

Per FAA requirements, in order for Master Plan forecasts to be approved the forecast should be within 10 percent of the TAF in the first 5 years and 15 percent in 10 years — as set forth by the FAA in AC 150/5070-6B, *Airport Master Plans*. **Table 2-10** details the recommended forecast of enplanements and total airport operations (all activity types) in comparison to the FAA TAF forecast.

As shown, based aircraft are projected to be within FAA parameters in 5 and 10 years when comparing the Master Plan forecast to the FAA 2022 TAF.

When comparing the Master Plan forecast of operations to the FAA 2022 TAF, operations are projected approximately 68.4 percent below the TAF in 5 years and approximately 68.3 percent below the TAF in 10 years. Although outside FAA parameters, the Master Plan forecast is justifiable.

It is important to note that actual activity levels at BJJ in 2022 consisted of 5,800 operations compared to the 18,636 operations reported in the FAA 2022 TAF, or approximately 68.9 percent lower than the FAA's TAF projections. Given the large difference in FAA projected activity in 2022 when compared to reported activity, the FAA 2022 TAF projections over the 20-year planning horizon are not believed to be reflective of activity at BJJ.

Table 2-10. FAA Appendix C: Comparing Airport Planning and TAF Forecasts

Specified Base Year: 2022	Year*	Master Plan Forecast	FAA 2022 TAF	Master Plan Forecast vs. FAA 2022 TAF (% Difference)
Based Aircraft				
Base Yr.	2022	45	49	-8.2%
Base Yr. + 5 Yrs.	2027	50	49	2.0%
Base Yr. + 10 Yrs.	2032	54	49	10.2%
Base Yr. + 15 Yrs.	2037	59	49	20.4%
Operations				
Base Yr.	2022	5,800	18,636	-68.9%
Base Yr. + 5 Yrs.	2027	6,444	20,411	-68.4%
Base Yr. + 10 Yrs.	2032	7,088	22,351	-68.3%
Base Yr. + 15 Yrs.	2037	7,731	24,471	-68.4%

* Master Plan Forecast data depicts calendar years, while the FAA TAFs depict fiscal year data.

Source: FAA 2022 TAFs, FAA TFMSC, FAA’s National Based Aircraft Inventory Program, FlightAware, Woods & Poole Economics, Inc., CHA, 2023.

The full recommended enplanements, alternate enplanements, and operations forecasts can be found in **Appendix D**. In accordance with FAA requirements, a summary of forecasted levels and growth rates, as well as operational factors, is included in **Appendix E**.

2.9 Critical Aircraft and Airport Reference Code Determination

The foundation of facility planning and design of federally obligated airports are based on the specifications and dimensional requirements of the critical aircraft, making the critical aircraft an important component of the airport planning process. Per FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, the critical aircraft is the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use⁵ of the airport.

The FAA classifies airports and runways by Airport Reference Codes (ARC) based on their existing and planned operational capabilities. ARC is an airport designation that represents the Aircraft Approach Category (AAC) category and Airplane Design Group (ADG) group of the aircraft that the airfield is intended to accommodate on a regular basis (at least 500 annual operations). The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely on the airport.

2.9.1 Critical Aircraft and Airport Reference Code

To determine the current critical aircraft for BJJ, FlightAware data was evaluated to identify trends by AAC category and ADG grouping. **Table 2-11** presents the operations by groupings. As shown, BJJ experienced more than 500 annual operations for AAC Category B and ADG Group II aircraft in 2021; therefore, based on the analysis of operations data, B-II represents the current ARC and current group of aircraft with similar characteristics, or the critical aircraft grouping.

⁵ Regular use is defined as an aircraft or grouping of aircraft with more than 500 annual operations, including both itinerant and local operations, but excluding touch-and-go operations.

An example of a B-II aircraft operating at BJJ is the Cessna Citation Excel.

Table 2-11. BJJ Operations by AAC Category and ADG Group (2022)

AAC & ADG		2022
Subtotal by AAC	A	3,510
	B	1,258
	C	60
Subtotal by ADG	I	3,730
	II	1,094
	III	4
Helicopter		938
Balloon		2
Unknown		32

Note: Unknown represent aircraft users who blocked the aircraft's identifying information.

Source: FlightAware, CHA, 2023.

2.9.2 Future Airport Reference Code

When projecting future aircraft groupings, it was assumed that operations would retain the percent makeup by user class (i.e., general aviation and military) from 2022. As shown in **Table 2-12**, the future ARC at BJJ is predicted to remain at B-II, with the Cessna Citation Excel representing an aircraft within the critical aircraft family.

Table 2-12. BJJ Operations by AAC Category and ADG Group (Projected)

AAC & ADG		2027	2032	2037	2042
Subtotal by AAC	A	3,922	4,313	4,706	5,096
	B	1,405	1,546	1,686	1,827
	C	67	74	80	87
Subtotal by ADG	I	4,167	4,584	4,999	5,416
	II	1,222	1,344	1,466	1,588
	III	4	5	5	6
Helicopter		1,048	1,153	1,257	1,362
Balloon		2	2	3	3

Source: FlightAware, CHA, 2023.

APPENDIX A

Socioeconomics

Population

From 2012 through 2022, the population within the United States experienced minor but steady growth year-over-year and is projected to continue steadily increasing throughout the forecast horizon. The population within the BJJ catchment area, Wayne County, and the State of Ohio experienced an overall increase in population, despite periods of decreasing population.

In 2022, Wayne County had a population of approximately 116,559, while the BJJ catchment area had an estimated population of approximately 1,305,181 (or approximately 11.1 percent of the State's population). As shown in **Table A1**, the BJJ catchment area and Wayne County grew had a lower Compound Annual Growth Rate (CAGR) than the State of Ohio or United States, indicating slower growth year-over-year.

From 2022 through 2042, the BJJ catchment area is projected to have a CAGR of approximately 0.1 percent. Population within Wayne County is projected to grow at the same CAGR as the State of Ohio, at approximately 0.2 percent, which is slower than that of the United States (0.6 percent).

Table A1. Population (Historical & Projected)

Year	BJJ Catchment Area	CAGR	Wayne County, OH	CAGR	State - Ohio	CAGR	United States	CAGR
Historical								
2012	1,302,381	-	115,300	-	11,571,828	-	314,283,058	-
2017	1,311,494	0.1%	117,075	0.3%	11,738,715	0.3%	326,541,427	0.8%
2022	1,305,181	-0.1%	116,559	-0.1%	11,756,058	0.0%	333,287,557	0.4%
CAGR 2012 - 2022	-	0.02%	-	0.1%	-	0.2%	-	0.6%
Projected								
2027	1,316,795	0.2%	118,030	0.3%	11,889,703	0.2%	344,557,385	0.7%
2032	1,324,885	0.1%	119,147	0.2%	11,998,336	0.2%	355,532,044	0.6%
2037	1,328,862	0.1%	119,852	0.1%	12,076,901	0.1%	366,031,910	0.6%
2042	1,329,022	0.002%	120,165	0.1%	12,127,585	0.1%	376,080,106	0.5%
CAGR 2022 - 2042	-	0.1%	-	0.2%	-	0.2%	-	0.6%
Growth Rate 2022 - 2042	-	1.8%	-	3.1%	-	3.2%	-	12.8%

Note: Compound Annual Growth Rate (CAGR).

Source: Woods & Poole Economics, Inc., CHA, 2023.

Employment

In 2020, the number of jobs within the BJJ catchment area decreased by approximately 2.7 percent, which could have possibly been a result of COVID-19. Despite a decrease in jobs the previous year, the number of jobs increased in 2021 by approximately 2.1 percent. The number of jobs increased again in 2022 by approximately 2.5 percent with a total of approximately 789,708 jobs, exceeding the number of jobs in 2019 (775,961).

Like the BJJ catchment area, Wayne County, the State of Ohio, and United States experienced a decrease in jobs in 2020, followed by increases in 2021 and again in 2022.

The number of jobs prior to COVID-19 (2019) and from 2020 through 2022 are presented in **Table A2**.

Table A2. Employment (2019-2022)

Year	BJJ Catchment Area	Wayne County, OH	State - Ohio	United States
2019	775,961	69,996	7,072,282	201,648,179
2020	754,903	67,481	6,853,597	195,301,627
2021	770,417	68,635	7,010,299	201,142,587
2022	789,708	70,516	7,196,074	208,286,623

Source: Woods & Poole Economics, Inc., CHA, 2023.

As depicted in **Table A3**, the numbers of jobs within the BJJ catchment area, Wayne County, State of Ohio, and United States are each expected to steadily increase throughout the forecast horizon.

Table A3. Employment (Historical & Projected)

Year	BJJ Catchment Area	CAGR	Wayne County, OH	CAGR	State - Ohio	CAGR	United States	CAGR
Historical								
2012	739,272	-	64,285	-	6,605,933	-	178,979,687	-
2017	773,444	0.9%	69,487	1.6%	6,987,863	1.1%	196,394,098	1.9%
2022	789,708	0.4%	70,516	0.3%	7,196,074	0.6%	208,286,623	1.2%
CAGR 2012 - 2022	-	0.7%	-	0.9%	-	0.9%	-	1.5%
Projected								
2027	829,162	1.0%	73,823	0.9%	7,570,828	1.0%	224,079,836	1.5%
2032	857,916	0.7%	75,815	0.5%	7,845,424	0.7%	237,718,837	1.2%
2037	883,097	0.6%	77,532	0.4%	8,091,667	0.6%	251,080,236	1.1%
2042	904,934	0.5%	79,002	0.4%	8,312,629	0.5%	264,243,080	1.0%
CAGR 2022 - 2042	-	0.7%	-	0.6%	-	0.7%	-	1.2%
Growth Rate 2022 - 2042	-	14.6%	-	12.0%	-	15.5%	-	26.9%

Note: Compound Annual Growth Rate (CAGR).

Source: Woods & Poole Economics, Inc., CHA, 2023.

Personal Income Per Capita

Despite experiencing a decrease in jobs from 2019 to 2020, personal income per capita within the BJJ catchment area, Wayne County, State of Ohio, and United States increased consistently through 2022.

In 2022, the BJJ catchment area had an average personal income per capita of approximately \$57,152, which is higher than that of Wayne County, Ohio at \$53,500. The State of Ohio had a personal per capita income of approximately \$59,215, while the United States was approximately \$66,968. The personal per capita income within BJJ catchment area and Wayne County are

projected to grow by approximately 4.7 percent and 4.6 percent annually throughout the forecast horizon, which are slightly lower than that of the State of Ohio (4.8 percent) and United States 4.8 percent). See **Table A4**.

Table A4. Personal Income Per Capita (Historical & Projected)

Year	BJJ Catchment Area (\$)	CAGR	Wayne County, OH (\$)	CAGR	State – Ohio (\$)	CAGR	United States (\$)	CAGR
Historical								
2012	37,518	-	35,875	-	40,763	-	44,556	-
2017	44,864	3.6%	42,562	3.5%	46,642	2.7%	51,563	3.0%
2022	57,152	5.0%	53,500	4.7%	59,215	4.9%	66,968	5.4%
CAGR 2012 - 2022	-	4.3%	-	4.1%	-	3.8%	-	4.2%
Projected								
2027	72,115	4.8%	66,938	4.6%	75,427	5.0%	85,161	4.9%
2032	90,767	4.7%	83,582	4.5%	94,975	4.7%	107,378	4.7%
2037	114,388	4.7%	104,584	4.6%	119,675	4.7%	135,487	4.8%
2042	143,951	4.7%	130,764	4.6%	150,534	4.7%	170,682	4.7%
CAGR 2022 - 2042	-	4.7%	-	4.6%	-	4.8%	-	4.8%
Growth Rate 2022 - 2042	-	151.9%	-	144.4%	-	154.2%	-	154.9%

Note: Values in Current Dollars. Compound Annual Growth Rate (CAGR).
Source: Woods & Poole Economics, Inc., CHA, 2023.

APPENDIX B

FAA 2022 Terminal Area Forecasts
BJJ & National

Table B1. FAA 2022 TAF (BJJ)

Fiscal Year	Enplanements			AIRCRAFT OPERATIONS								Total Ops	Total Tracon Ops	Based Aircraft
				Itinerant Operations					Local Operations					
	Air Carrier	Commuter	Total	Air Carrier	Air Taxi & Commuter	GA	Military	Total	Civil	Military	Total			
2012	0	0	0	0	15,000	25,520	1,000	41,520	55,000	0	55,000	96,520	0	32
2013	0	0	0	0	15,000	25,520	1,000	41,520	55,000	0	55,000	96,520	0	27
2014	0	0	0	0	15,000	25,520	1,000	41,520	55,000	0	55,000	96,520	0	27
2015	0	0	0	0	15,000	25,520	1,000	41,520	55,000	0	55,000	96,520	0	43
2016	0	0	0	0	9,900	17,160	1,320	28,380	37,620	0	37,620	66,000	0	43
2017	0	0	0	0	9,900	17,160	1,320	28,380	37,620	0	37,620	66,000	0	40
2018	0	0	0	0	9,900	17,160	1,320	28,380	37,620	0	37,620	66,000	0	40
2019	0	0	0	0	200	9,000	100	9,300	9,000	0	9,000	18,300	0	46
2020	0	0	0	0	200	9,000	100	9,300	9,000	0	9,000	18,300	0	51
2021	0	0	0	0	200	9,000	100	9,300	9,000	0	9,000	18,300	0	49
2022*	0	0	0	0	204	9,166	100	9,470	9,166	0	9,166	18,636	0	49
2023*	0	0	0	0	208	9,335	100	9,643	9,335	0	9,335	18,978	0	49
2024*	0	0	0	0	212	9,508	100	9,820	9,507	0	9,507	19,327	0	49
2025*	0	0	0	0	216	9,683	100	9,999	9,682	0	9,682	19,681	0	49
2026*	0	0	0	0	220	9,861	100	10,181	9,861	0	9,861	20,042	0	49
2027*	0	0	0	0	224	10,044	100	10,368	10,043	0	10,043	20,411	0	49
2028*	0	0	0	0	228	10,229	100	10,557	10,229	0	10,229	20,786	0	49
2029*	0	0	0	0	232	10,419	100	10,751	10,418	0	10,418	21,169	0	49
2030*	0	0	0	0	236	10,610	100	10,946	10,610	0	10,610	21,556	0	49
2031*	0	0	0	0	240	10,804	100	11,144	10,805	0	10,805	21,949	0	49
2032*	0	0	0	0	245	11,002	100	11,347	11,004	0	11,004	22,351	0	49
2033*	0	0	0	0	250	11,203	100	11,553	11,206	0	11,206	22,759	0	49
2034*	0	0	0	0	255	11,408	100	11,763	11,412	0	11,412	23,175	0	49
2035*	0	0	0	0	260	11,617	100	11,977	11,622	0	11,622	23,599	0	49
2036*	0	0	0	0	265	11,830	100	12,195	11,836	0	11,836	24,031	0	49
2037*	0	0	0	0	270	12,047	100	12,417	12,054	0	12,054	24,471	0	49
2038*	0	0	0	0	275	12,269	100	12,644	12,276	0	12,276	24,920	0	49
2039*	0	0	0	0	280	12,495	100	12,875	12,502	0	12,502	25,377	0	49
2040*	0	0	0	0	285	12,724	100	13,109	12,733	0	12,733	25,842	0	49
2041*	0	0	0	0	290	12,958	100	13,348	12,968	0	12,968	26,316	0	49
2042*	0	0	0	0	295	13,197	100	13,592	13,208	0	13,208	26,800	0	49

Source: FAA 2022 TAF, CHA, 2023.



Table B2. FAA 2022 TAF (National) – Enplanements

Fiscal Year	Enplanements		
	Air Carrier	Commuter	Total
2012	571,945,322	159,107,255	731,052,577
2013	578,603,059	155,732,599	734,335,658
2014	598,560,607	154,968,527	753,529,134
2015	632,226,955	154,156,643	786,383,598
2016	669,403,241	153,181,807	822,585,048
2017	695,738,234	150,876,594	846,614,828
2018	732,093,608	156,264,202	888,357,810
2019	762,356,558	161,753,845	924,110,403
2020	418,658,728	93,407,309	512,066,037
2021	439,290,457	107,058,661	546,349,118
2022*	694,095,762	128,886,217	822,981,979
2023*	812,548,645	115,688,253	928,236,898
2024*	880,011,838	124,115,057	1,004,126,895
2025*	918,822,733	128,267,251	1,047,089,984
2026*	943,095,030	131,055,037	1,074,150,067
2027*	965,563,725	133,677,154	1,099,240,879
2028*	988,672,709	136,384,884	1,125,057,593
2029*	1,012,073,758	139,141,437	1,151,215,195
2030*	1,035,570,032	141,919,231	1,177,489,263
2031*	1,059,094,284	144,701,730	1,203,796,014
2032*	1,082,556,406	147,474,067	1,230,030,473
2033*	1,105,943,861	150,237,958	1,256,181,819
2034*	1,129,462,001	153,019,878	1,282,481,879
2035*	1,154,082,095	155,957,442	1,310,039,537
2036*	1,179,265,913	158,966,314	1,338,232,227
2037*	1,204,946,715	162,043,968	1,366,990,683
2038*	1,231,066,748	165,182,045	1,396,248,793
2039*	1,257,284,429	168,341,776	1,425,626,205
2040*	1,284,160,174	171,590,982	1,455,751,156
2041*	1,310,889,452	174,822,884	1,485,712,336
2042*	1,338,459,750	178,166,338	1,516,626,088

Source: FAA 2022 TAF, CHA, 2023.

Table B3. FAA 2022 TAF (National) – Aircraft Operations & Based Aircraft

Fiscal Year	Aircraft Operations								Total Ops	Total Tracon Ops	Based Aircraft
	Itinerant Operations					Local Operations					
	Air Carrier	Air Taxi & Commuter	GA	Military	Total	Civil	Military	Total			
2012	13,207,585	11,652,724	33,534,638	3,453,773	61,848,720	35,676,757	1,346,299	37,023,056	98,871,776	37,514,316	162,347
2013	13,110,294	11,470,904	32,994,934	3,387,579	60,963,711	35,459,228	1,339,019	36,798,247	97,761,958	36,713,757	166,002
2014	13,370,388	11,035,236	32,466,313	3,411,560	60,283,497	35,363,417	1,297,287	36,660,704	96,944,201	36,576,418	169,448
2015	14,068,783	10,494,017	32,285,972	3,489,587	60,338,359	35,653,309	1,260,747	36,914,056	97,252,415	36,956,062	163,149
2016	14,719,904	10,088,374	31,925,847	3,492,343	60,226,468	35,279,103	1,188,848	36,467,951	96,694,419	37,496,951	172,834
2017	15,362,683	9,687,298	31,725,368	3,629,029	60,404,378	35,299,249	1,245,106	36,544,355	96,948,733	37,949,207	166,052
2018	16,008,338	9,575,072	31,967,211	3,683,367	61,233,988	35,786,996	1,193,059	36,980,055	98,214,043	38,856,216	164,340
2019	16,500,548	9,687,010	32,205,379	3,694,401	62,087,338	36,499,474	1,172,706	37,672,180	99,759,518	39,226,504	161,831
2020	12,032,817	7,910,398	30,438,088	3,610,262	53,991,565	35,816,652	1,058,506	36,875,158	90,866,723	31,274,162	155,584
2021	12,509,380	8,256,298	31,549,153	3,715,437	56,030,268	36,958,952	1,112,984	38,071,936	94,102,204	33,536,171	158,188
2022*	15,445,106	8,893,083	32,411,995	3,646,504	60,396,688	37,570,977	1,024,533	38,595,510	98,992,198	37,694,020	159,551
2023*	16,921,416	8,411,695	32,919,820	3,646,725	61,899,656	38,426,013	1,024,533	39,450,546	101,350,202	38,921,939	161,014
2024*	18,216,902	8,611,340	33,468,237	3,646,951	63,943,430	39,069,182	1,024,533	40,093,715	104,037,145	40,751,980	162,370
2025*	18,947,838	8,805,548	33,844,971	3,647,179	65,245,536	39,402,151	1,024,533	40,426,684	105,672,220	41,844,699	163,688
2026*	19,559,685	8,517,736	34,034,922	3,647,409	65,759,752	39,543,064	1,024,533	40,567,597	106,327,349	42,168,490	164,990
2027*	20,057,021	8,394,823	34,147,057	3,647,650	66,246,551	39,686,273	1,024,533	40,710,806	106,957,357	42,553,885	166,315
2028*	20,475,362	8,463,990	34,260,744	3,647,891	66,847,987	39,831,521	1,024,533	40,856,054	107,704,041	43,101,159	167,649
2029*	20,897,801	8,534,790	34,375,923	3,648,134	67,456,648	39,978,737	1,024,533	41,003,270	108,459,918	43,655,633	168,987
2030*	21,320,868	8,608,042	34,492,431	3,648,381	68,069,722	40,127,662	1,024,533	41,152,195	109,221,917	44,213,742	170,371
2031*	21,741,551	8,677,598	34,610,532	3,648,631	68,678,312	40,278,659	1,024,533	41,303,192	109,981,504	44,765,632	171,768
2032*	22,157,053	8,747,658	34,730,431	3,648,883	69,284,025	40,431,839	1,024,533	41,456,372	110,740,397	45,312,664	173,129
2033*	22,568,048	8,818,690	34,852,107	3,649,141	69,887,986	40,587,264	1,024,533	41,611,797	111,499,783	45,855,663	174,509
2034*	22,978,138	8,890,249	34,975,532	3,649,401	70,493,320	40,745,068	1,024,533	41,769,601	112,262,921	46,398,456	175,918
2035*	23,407,397	8,963,264	35,100,848	3,649,663	71,121,172	40,905,238	1,024,533	41,929,771	113,050,943	46,963,432	177,338
2036*	23,845,593	9,037,051	35,228,022	3,649,939	71,760,605	41,067,807	1,024,533	42,092,340	113,852,945	47,538,960	178,802
2037*	24,286,233	9,111,904	35,357,106	3,650,212	72,405,455	41,232,804	1,024,533	42,257,337	114,662,792	48,117,992	180,262
2038*	24,737,561	9,187,876	35,488,121	3,650,488	73,064,046	41,400,314	1,024,533	42,424,847	115,488,893	48,709,827	181,740
2039*	25,195,427	9,264,513	35,621,121	3,650,764	73,731,825	41,570,303	1,024,533	42,594,836	116,326,661	49,309,602	183,221
2040*	25,664,175	9,342,575	35,756,131	3,651,047	74,413,928	41,742,907	1,024,533	42,767,440	117,181,368	49,922,519	184,752
2041*	26,126,634	9,421,555	35,893,169	3,651,335	75,092,693	41,918,165	1,024,533	42,942,698	118,035,391	50,529,363	186,293
2042*	26,607,649	9,501,581	36,032,343	3,651,626	75,793,199	42,096,133	1,024,533	43,120,666	118,913,865	51,157,744	187,828

Source: FAA 2022 TAF, CHA, 2023.

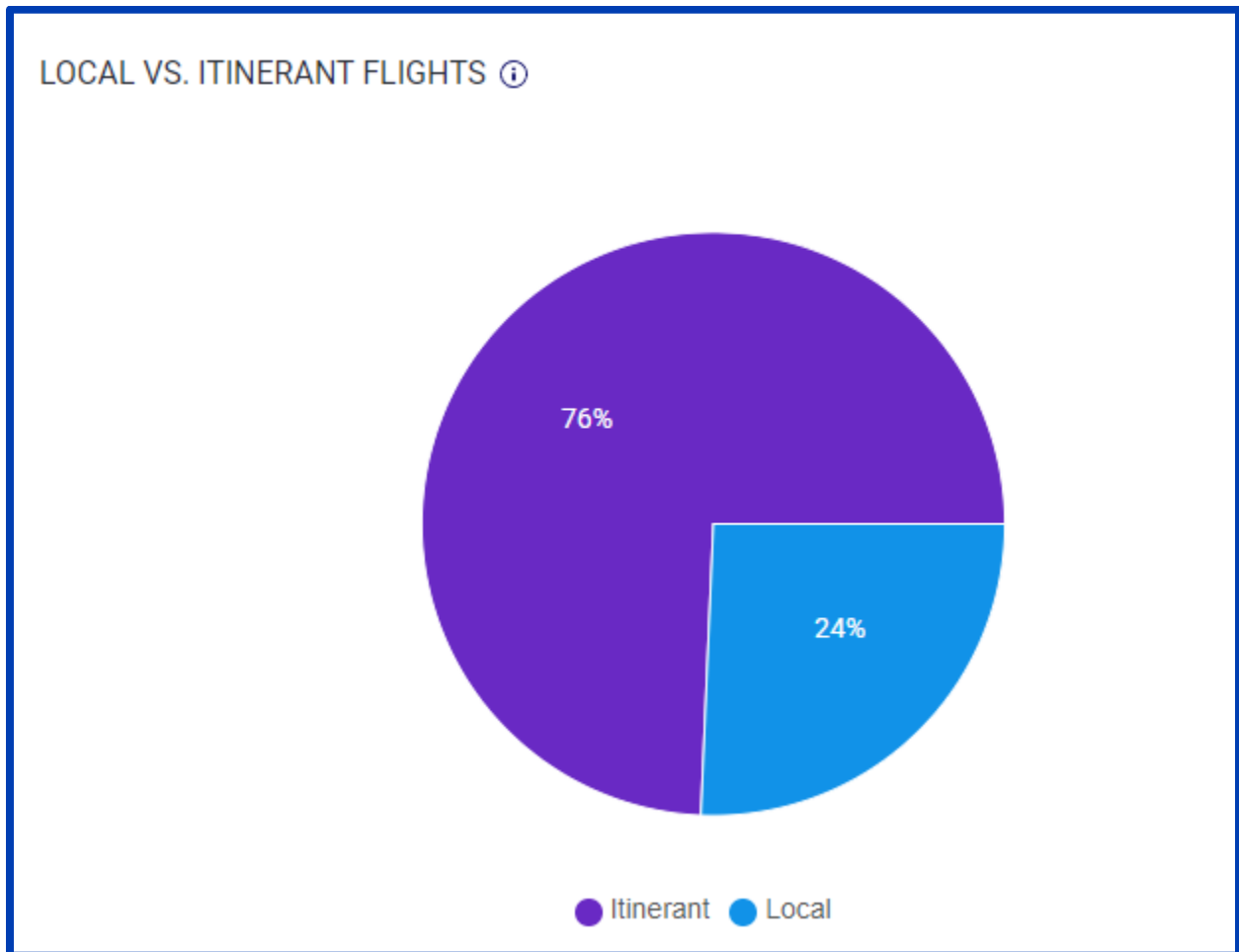


APPENDIX C

1200.AERO

Local Vs. Itinerant Operations

Figure C1. 1200.aero Itinerant Vs. Local Operations (Percent Split)



Note: Represent activity occurring from July 2023 through November 2023.

Source: 1200.aero.

APPENDIX D

Recommended Forecast
(20-Years)

Table D1. Recommended Forecast (20-Years)

Year	Based Aircraft	Operations				
		General Aviation		Military		Total
		Itinerant	Local	Itinerant	Local	
2022	45	4,389	1,405	6	0	5,800
2023	46	4,487	1,436	6	0	5,929
2024	47	4,584	1,468	6	0	6,058
2025	48	4,681	1,499	6	0	6,186
2026	49	4,779	1,530	6	0	6,315
2027	50	4,877	1,561	6	0	6,444
2028	51	4,974	1,593	6	0	6,573
2029	51	5,071	1,624	6	0	6,701
2030	52	5,169	1,655	6	0	6,830
2031	53	5,267	1,686	6	0	6,959
2032	54	5,365	1,717	6	0	7,088
2033	55	5,461	1,749	6	0	7,216
2034	56	5,559	1,780	6	0	7,345
2035	57	5,657	1,811	6	0	7,474
2036	58	5,755	1,842	6	0	7,603
2037	59	5,852	1,873	6	0	7,731
2038	60	5,949	1,905	6	0	7,860
2039	61	6,047	1,936	6	0	7,989
2040	63	6,145	1,967	6	0	8,118
2041	64	6,242	1,998	6	0	8,246
2042	65	6,339	2,030	6	0	8,375
CAGR 2012-2042	1.9%	1.9%	1.9%	0.0%	-	1.9%
Growth 2012-2042	44.4%	44.4%	44.4%	0.0%	-	44.4%

Source: FAA 2022 TAFs, FAA TFMSC, FAA's National Based Aircraft Inventory Program, FlightAware, Woods & Poole Economics, Inc., CHA, 2023.

APPENDIX E

FAA Appendix B:

Airport Planning Forecasts

Table E1. FAA Appendix B: Airport Planning Forecasts

A. Forecast Levels and Growth Rates									
Specified Base Year: 2022	Base Yr. Level	Base Yr. +1	Base Yr. +5	Base Yr. +10	Base Yr. +15	Average Annual Compound Growth Rates			
						Base Yr. to +1	Base Yr. to +5	Base Yr. to +10	Base Yr. to +15
Itinerant GA	4,389	4,487	4,877	5,365	5,852	2.2%	2.1%	2.0%	1.9%
Local GA	1,405	1,436	1,561	1,717	1,873	2.2%	2.1%	2.0%	1.9%
Itinerant Military	6	6	6	6	6	0.0%	0.0%	0.0%	0.0%
TOTAL OPERATIONS	5,800	5,929	6,444	7,088	7,731	-	-	-	-
Based Aircraft									
Single-Engine	32	33	35	38	41	3.1%	1.8%	1.7%	1.7%
Multi-Engine	3	3	3	4	4	0.0%	0.0%	2.9%	1.9%
Jet	5	5	6	6	7	0.0%	3.7%	1.8%	2.3%
Helicopter	5	5	6	6	7	0.0%	3.7%	1.8%	2.3%

Source: FAA 2022 TAFs, FAA TFMSC, FAA's National Based Aircraft Inventory Program, FlightAware, Woods & Poole Economics, Inc., CHA, 2023.

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