

THE OHIO STATE UNIVERSITY AIRPORT (KOSU)

# AIRPORT MASTER PLAN 2022



THE OHIO STATE UNIVERSITY

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AIRPORT

# Table of Contents

## 1 - Inventory

1.0	Introduction.....	1-1
1.1	History .....	1-2
1.2	Today .....	1-4
1.3	Airport Location and Role .....	1-5
1.4	Climate and Meteorological Data .....	1-9
1.5	Existing Airport Facilities.....	1-11
1.6	Airspace / Air Traffic Control .....	1-18
1.7	Instrument Procedures.....	1-21
1.8	Support Facilities .....	1-33
1.9	Adjacent Development and Zoning .....	1-40
1.10	Airport Financials.....	1-43
1.11	Stakeholder Survey .....	1-44

## 2 – Environmental Overview

2.0	Environmental Overview .....	2-1
2.1	Introduction.....	2-1
2.2	Airport Master Plans.....	2-2
2.3	Level of Review .....	2-2
2.4	Environmental Review Categories .....	2-3

## 3 - Aviation Activity Forecasts

3.1	Introduction.....	3-1
3.2	Historic Activity.....	3-1
3.3	Present & Future Airport Role .....	3-3
3.4	Trends Impacting Future Airport Growth .....	3-6
3.5	KOSU Forecasts.....	3-12
3.6	Critical Aircraft.....	3-19
3.7	Summary of Aviation Forecasts .....	3-22

## 4 - Facility Requirements

4.0	Introduction.....	4-1
4.2	Stakeholder Input .....	4-1
4.3	Wind Coverage .....	4-1
4.4	Aircraft Rescue and Firefighting.....	4-4
4.5	Airfield Capacity.....	4-5
4.6	Airport Design Standards.....	4-9
4.7	Runway System.....	4-15
4.8	Taxiway System .....	4-30
4.9	Airfield Marking, Lighting and Signage .....	4-33
4.10	Aircraft Parking and Storage.....	4-34
4.11	Terminal Facility.....	4-39
4.12	Access, Auto Parking, and Passenger Convenience to Airport Facilities .....	4-39

4.13	Airport Fencing, Security and Lighting .....	4-42
4.14	Airport Storage, Maintenance and Electrical Vault Buildings .....	4-45
4.15	Equipment .....	4-49
4.16	Services.....	4-50
4.17	Compass Calibration Pad .....	4-50
4.18	U.S. Customs Service .....	4-52
4.19	Airship Tie-down.....	4-52
4.20	Service Drives .....	4-53
4.21	Academic & Research Support .....	4-53
4.22	Summary of Facility Needs .....	4-55
<b>5 - Alternatives Analysis</b>		
5.0	Introduction.....	5-1
5.1	Runways and Taxiways .....	5-2
5.2	Terminal Area .....	5-23
5.3	Other .....	5-44
5.4	Summary .....	5-51
<b>6 - Airport Layout Plan Drawing</b>		
6.0	Introduction.....	6-1
6.1	ALP Purpose.....	6-1
6.2	ALP Drawing.....	6-1
<b>7 - Financial Implementation</b>		
7.0	Introduction.....	7-1
7.1	ALP Implementation Methodology.....	7-1
7.2	ALP Capital Development Programs .....	7-1
7.3	ALP Capital Development Funding Sources .....	7-2
7.4	Future Development Considerations.....	7-4
<b>Appendix A - Glossary .....</b>		<b>A-1</b>
<b>Appendix B - FAA Airport Obligations/Grant Assurances.....</b>		<b>B-1</b>
<b>Appendix C - Airport Building Assessments.....</b>		<b>C-1</b>
<b>Appendix D - Non-Airport Building Assessments.....</b>		<b>D-1</b>
<b>Appendix E - Survey Summary .....</b>		<b>E-1</b>
<b>Appendix F - Public Involvement Program .....</b>		<b>F-1</b>
<b>Appendix G - PCN Report .....</b>		<b>G-1</b>
<b>Appendix H - Noise Report .....</b>		<b>H-1</b>



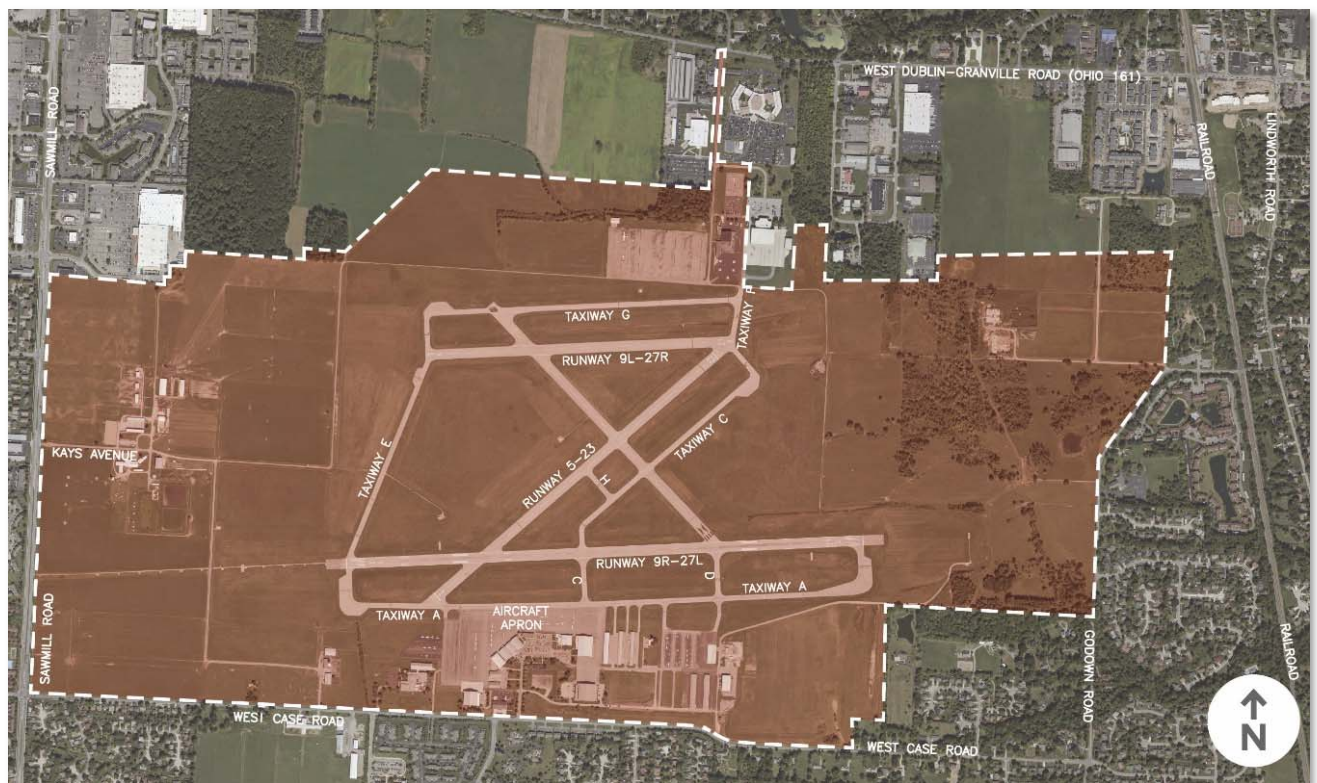
# 1 Inventory

## 1.0 Introduction

The primary purpose of updating The Ohio State University Airport Master Plan is to provide planning and development strategies for the airport over the next 20 years. The goal of the Master Plan is to provide the framework that guides future airport development in a manner that cost-effectively satisfies aviation demand, while also considering potential environmental and socioeconomic impacts. This plan attempts to achieve that balance while also providing sound technical analysis from which airport leaders may create policy for the facility's future improvements.

This chapter discusses the airport's history and role and identifies existing airside and landside facilities, regional setting and land uses, and historical aviation activity. During this inventory narrative and throughout this Master Plan, numerous aviation terms are used. For more complete definitions of these terms, a glossary is included in **Appendix A**. Throughout this document, the KOSU acronym refers to the International Civil Aviation Organization's 4-letter code for The Ohio State University Airport. The study area for the project is shown in **Exhibit 1.0-1**.

**Exhibit 1.0-1: Study Area**



Source: Woolpert, 2017.



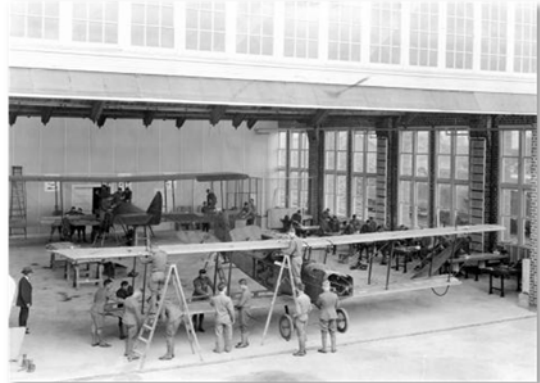
## 1.1 History

### 1.1.1 Local History

The Ohio State University has played an integral part in advancing the aeronautics field, while evolving into one of the nation's premier Aviation programs. Less than 14 years after the first flight, World War I created the need for qualified military pilots. In spring 1917, the War Department established Schools of Military Aeronautics at six universities, including The Ohio State University.

The School of Aeronautics opened May 21, 1917 (see **Exhibit 1.1-1**), when the first "squadron" of 16 cadets reported. The cadets built the aircraft in the aeronautics building, located at on the southeast corner of West 19th Avenue and Neil Avenue. The planes would then be rolled down the hill to the field just east of the Olentangy River for flight tests and training. This arrangement was short-lived with the opening of Ohio Stadium in 1922. In 1939, The Ohio State University was one of a number of universities that took part in the Civilian Pilot Training Program, sponsored by the Civil Aeronautics Administration, for the purpose of fostering private flying.

**Exhibit 1.1-1: School of Military Aeronautics in 1917**



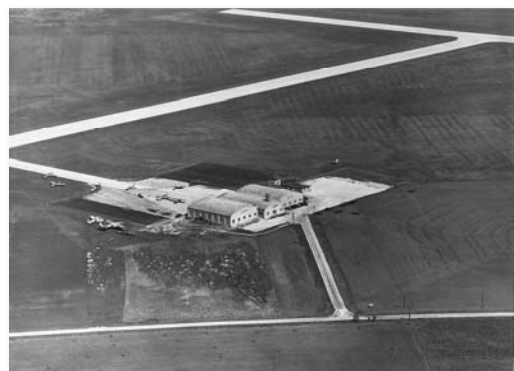
Source: *History of The Ohio State Airport*, available at: <https://osuairport.org/about/history-ohio-state-airport>

In 1942, The Ohio State University Board of Trustees established the policy of developing a comprehensive program of aeronautics. The result of this policy was the establishment of a School of Aviation and an associated airport. The university, in June 1942, purchased property for the development of an airport. The new facility was located on the outskirts of town, seven miles north of campus in northwest Columbus. The first plane to utilize the new airport landed at the field on November 5, 1942. What followed was the construction of the airport's first two buildings in the spring of 1943, and two 2,200 feet, hard-surfaced runways, taxiways, and aprons in early 1944. The Ohio State University first offered Flight Instruction during spring quarter 1945. (See **Exhibit 1.1-2**.)

Prior to 1959, the Airport was operated as a private facility solely for the benefit of the university. It was opened to the public following the adoption of an Airport Master Plan on January 12, 1959. The Master Plan established the policy of receiving federal aid to fund Airport improvements. On November 19, 1962, the university applied for its first federal grant to extend the length of the newly constructed east/west runway from 3,000 feet to 5,000 feet.

Also in 1962, a Special Study Committee on Aviation reported that the operation of the Ohio State Airport was legitimate and that it should continue openly as an income producing university service. As a result, the university Board of Trustees resolved, in 1963, that the operation of the Ohio State Airport for purposes of teaching, research, and public service contributed materially to the achievement of the university's objectives, and the Board intended that the Ohio State Airport remain as a permanent part of the university's facilities and operations.<sup>1</sup>

**Exhibit 1.1-2: University Airport, circa 1945-46**



Source: *History of The Ohio State Airport*, available at: <https://osuairport.org/about/history-ohio-state-airport>

<sup>1</sup> Airport Master Plan Update 2014

In 1983, an Airport Development Advisory Committee was developed to examine the Airport's relationship to the university and the community with a view toward what direction Airport improvement and development should take into the future. The Report of the Ohio State Airport Development Advisory Committee was issued June 1984. The committee concluded that, "The university should continue the ownership and development of the Ohio State Airport as a viable component of its teaching, research, and service missions and as a legitimate income producing auxiliary enterprise."

KOSU hosts outreach programs for children, students and adults. Open houses, with free plane rides, hot air balloons and other attractions, pull in thousands of people. In 2015, the Austin E. Knowlton Foundation donated \$10 million to upgrade aviation education and research facilities, and the terminal at The Ohio State University Airport. In 2017, the airport celebrated its 75th anniversary, as well as the groundbreaking for a new terminal building and flight education center, which is expected to include a research lab, high-tech flight simulators, and lecture rooms.

### 1.1.2 FAA Airport Improvement Program Grant History

The Airport and Airway Improvement Act of 1982 provided the mechanism through which the federal government has provided many of the grants for airport development at KOSU. In return, the airport owner had to commit to grant assurances (see **Appendix B**). See **Exhibit 1.4-1** for a history of FAA grant-funded projects at KOSU.

**Exhibit 1.4-1: KOSU Grant History**

Grant Number	Fiscal Year	Description	Federal Total
14	1999	Acquire land for approaches	\$302,502
15	2001	Acquire snow removal equipment	\$289,454
16	2002	Conduct environmental study	\$85,000
17	2003	Rehabilitate Runway 5/23; Rehabilitate taxiway	\$1,375,000
18	2004	Conduct environmental study; Rehabilitate apron; Rehabilitate Runway 9R/27L; Rehabilitate Taxiway	\$480,225
19	2005	Acquire Land for Development	\$1,018,988
20	2006	Acquire Safety Equipment	\$225,000
21	2006	Install Miscellaneous NAVAIDS, Rehabilitate Taxiway	\$2,045,000
22	2007	Conduct Noise Compatibility Plan Study	\$506,989
23	2007	Improve Runway Safety Area - 09R/27L, Rehabilitate Apron, Rehabilitate Runway - 09R/27L	\$1,300,000
24	2008	Conduct Noise Compatibility Plan Study	\$344,750
25	2008	Rehabilitate Runway - 09R/27L	\$38,760
26	2008	Rehabilitate Runway - 09R/27L, Safety Management System Program	\$5,600,000
27	2010	Safety Management System (SMS) Program	\$100,000
28	2012	Acquire Safety Equipment and/or Fencing, Improve Runway Safety Area - 09R/27L	\$451,507
29	2014	Rehabilitate Apron, Rehabilitate Taxiway	\$38,977
30	2015	Rehabilitate Apron	\$452,431
<b>TOTAL</b>			<b>\$14,654,583</b>

Note: 1999 is the earliest year of accessible FAA AIP data

Source: FAA Airport Improvement Program Grant Histories

## 1.2 Today

Located on nearly 1,500 acres just seven miles from The Ohio State University campus in northwest Columbus, the Airport is owned by the university and operated by the university's College of Engineering.

As it has historically, The Ohio State University Airport continues to be academically focused. It is one of less than 30 university-owned airports nationwide, including one of only three airports owned by a tier-1 university research institution. **The primary mission of the Airport is to serve the university's learning, discovery, and engagement initiatives.** This is accomplished by doing the following:

- Providing a progressive environment conducive to teaching, research, and public service.
- Providing a learning laboratory and professional experience for students seeking to lead, develop, and operate tomorrow's safe and efficient global aviation system.
- Exploring and implementing progressive concepts for aeronautical services and facilities.
- Operating and managing superior facilities and associated aeronautical services for the global aviation community.
- Operating and managing the facility in a manner that is compatible with, and supportive of the surrounding community.

As one of the university's "Core Facilities," the nearly 1,500 acres of office, classrooms, simulation labs, hangar space; runways; air traffic control tower; and state-of-the-art navigation and communication systems allow the airport to support interdisciplinary teaching and research in a broad range of disciplines, including but not limited to:

- Aviation (with 20 university-owned aircraft and multiple simulation platforms)
- Aeronautical Engineering
- Architecture
- City & Regional Planning
- Geography
- Civil Engineering
- Material Science
- Fisher College of Business' MBA Finance program
- Industrial Design
- Chemistry

The airport also manages and operates the university's Flight Education Program, one of the few collegiate aviation programs in the Midwest that operates in an FAA air traffic controlled environment utilizing precision navigation, landing, lighting, and communications systems. These systems are available to the students because the airport serves a much broader clientele.

In addition to the traditional learning experiences, the airport also:

- Serves as a learning laboratory for students from Columbus State Community College, Sinclair College, and Rio Grande College.
- Provides on-the-job training for roughly 30 students each semester, the majority of which go on to work for airports, airlines, aviation consultants, and other flight providers (i.e. NetJets)
- Serves as a regular host site of the NIFA Safety and Flight Evaluation Conference (SAFECON)



- Hosts training for Ohio State Public Safety in receiving & protecting dignitaries, and responding to hijackings, drug smuggling, and bomb threats
- Serves as a Drop Zone for the US Army Airborne 412th Civil Affairs Battalion Hosts over 2,500 youth participating in various engagement activities each year

Located within the US Rte 33 Technology Corridor, the university and its partners have a unique opportunity to utilize the airport's resources to enhance research in core discovery themes, including data analytics, sustainability, resilient economies, and humanities. To this end, the airport is:

- Home to the Aeronautics Research Center (ARC)
- An Unmanned Aircraft Systems (UAS) certified operations site (FAA Certificate of Approval 7711-1)
- A pilot site for Airport Safety Management Systems
- A key component of the Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS)

All told, over 350 undergraduate and graduate students and 65 faculty members/instructors are dependent upon airport access each semester to conduct their coursework and/or research initiatives.

The Ohio State University is associated with a second airport located at the Transportation Research Center in East Liberty, Ohio. This landing strip offers opportunities to the university, while at the same time imposes a number of constraints, when viewed as a compliment to and/or replacement of KOSU.

#### Exhibit 1.2-1: Transportation Research Center Opportunities and Constraints

Opportunities	Constraints
• Owned by The Ohio State University	• Located inside a secure, access controlled facility, requiring pre-approval for all land and/or air access to the site.
• Located at a state-of-the-art research facility	• 45 miles from main campus
• Restricted access allows for uninterrupted flight operations	• Lacks modern navigational, communications, and lighting system, as well as air traffic control
• Limited impacts on surrounding community	• No employment opportunities for students
	• No interaction between students and professional pilots
	• No opportunities for research to be conducted in a real-world setting
	• No opportunities to engage surrounding community

Source: Ohio State Airport Director, 2018

## 1.3 Airport Location and Role

Airports across the country function as an interrelated system. To coordinate and fund this system, the FAA developed the National Plan of Integrated Airport Systems (NPIAS), a system of more than 3,300 existing and proposed airports that are significant to the national air transportation network. The goal of the NPIAS is to provide as many people as possible with convenient access to air transportation, typically not more than 20 miles of travel to the nearest NPIAS airport.

The aviation facilities included in the NPIAS are significant to the national aviation system and are eligible to receive federal funding. Communities that do not receive scheduled commercial service or that do not meet the criteria for classification as a commercial service airport may be included in the NPIAS as general aviation (GA) airports if they account for enough activity (having usually at least 10 locally-based aircraft) and are at least 20 miles from the nearest NPIAS airport. The FAA recently identified The Ohio State University Airport as one of 84 “National Priority Airports” out of nearly 3,000 general aviation facilities nationwide, and supports the enhancement of its facilities through prioritized funding.

KOSU, with a reference north latitude of 40°04.79' and west longitude of 83°04.38', is located in northwestern Franklin County approximately seven miles northwest of the university’s Columbus campus and 9 miles northwest of downtown Columbus. KOSU is included in the 2017-2021 NPIAS as a national reliever airport with 200 based aircraft.<sup>2 3</sup> **Exhibit 1.3-1** provides the distance between KOSU and public airports within a 20-mile radius. **Exhibit 1.3-2** shows all the NPIAS airports in Ohio.<sup>4</sup>

**Exhibit 1.3-1: Distance from KOSU to Surrounding NPIAS Airports**

Airport Name	Distance from KOSU	Runways	Lighting/Nav. Aids
<b>Union County (MRT)</b>	15 nm NW	4,218 X 75	MIRL, REIL, PAPI
<b>John Glenn Columbus International (CMH)</b>	10 nm SE	10,113 ft. x 150 ft. 8,000 ft. x 150 ft.	ASOS, HIRL, MALSR, PAPI, ILS, GPS
<b>Rickenbacker International (LCK)</b>	17 nm SE	11,902 ft. x 150 ft. 12,102 ft. x 200 ft.	AWOS, PAPI, ILS, ALSAF2, MALSR
<b>Delaware Municipal (DLZ)</b>	12 nm N	5,800 ft. x 100 ft.	MIRL, PAPI, REIL, GPS
<b>Bolton Field (TZR)</b>	11 nm S	5,500 ft. x 100ft.	REIL, AWOS, ILS
<b>Madison County (UYF)</b>	20 nm SW	4,000 ft. x 75 ft.	MIRL, REIL, PAPI

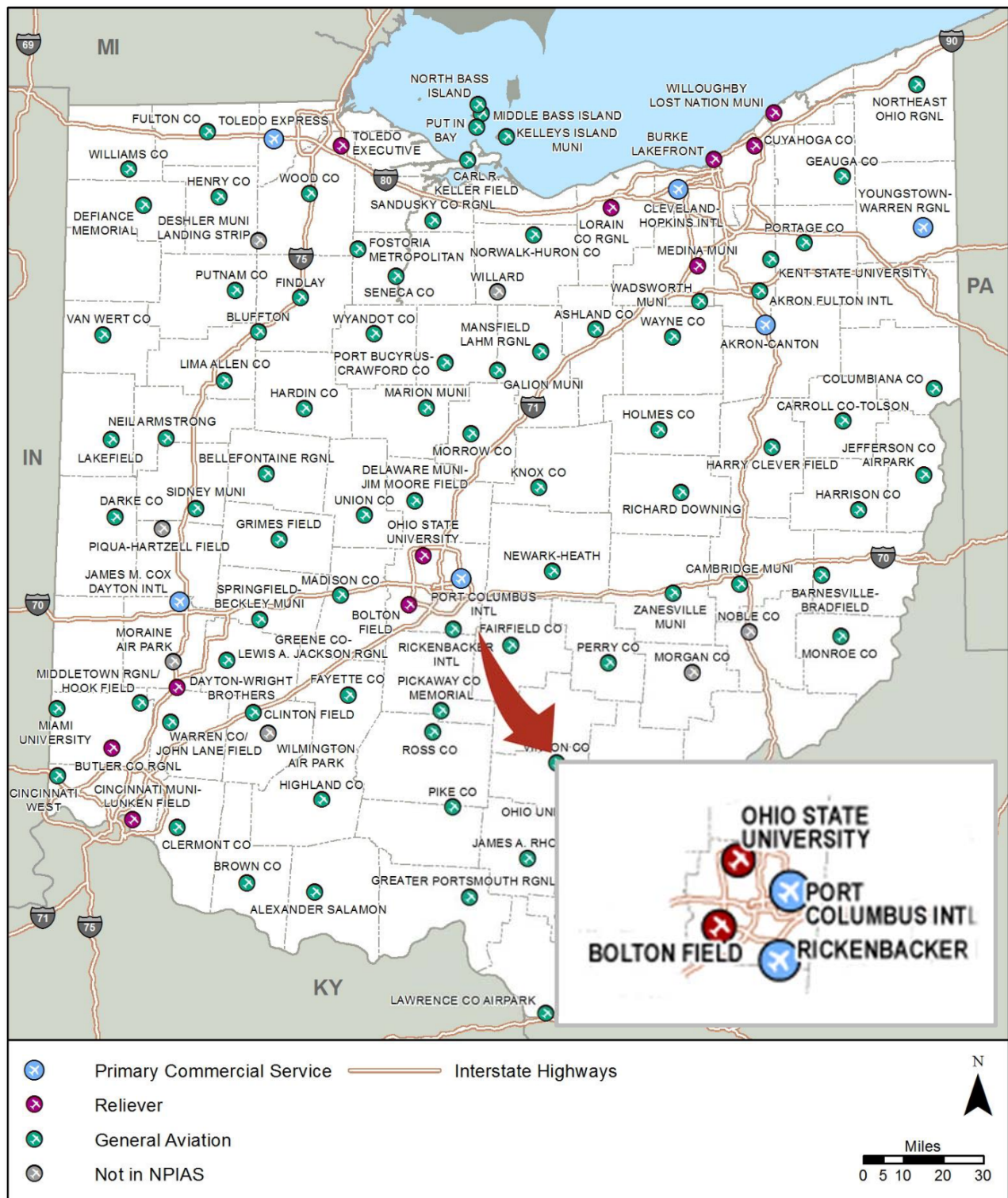
Source: FAA Forms 5010, January 2018; AirNav.com, October 2017.

<sup>2</sup> Federal Aviation Administration, *National Plan of Integrated Airport Systems (NPIAS) Report*, Available at [https://www.faa.gov/airports/planning2\\_capacity/npas/reports/](https://www.faa.gov/airports/planning2_capacity/npas/reports/) (September 2017).

<sup>3</sup> The Ohio State University Airport, *History of the Ohio State Airport*, Available at <https://osuairport.org/about/history-ohio-state-airport> (September 2017).

<sup>4</sup> <http://www.dot.state.oh.us/Divisions/Operations/Aviation/OhioAirportsFocusStudy/TechnicalReport/Appendix%20C%20-%20NPIAS%20Analysis%20FINAL.pdf>

Exhibit 1.3-2: FAA Classification of Ohio System Plan Airports

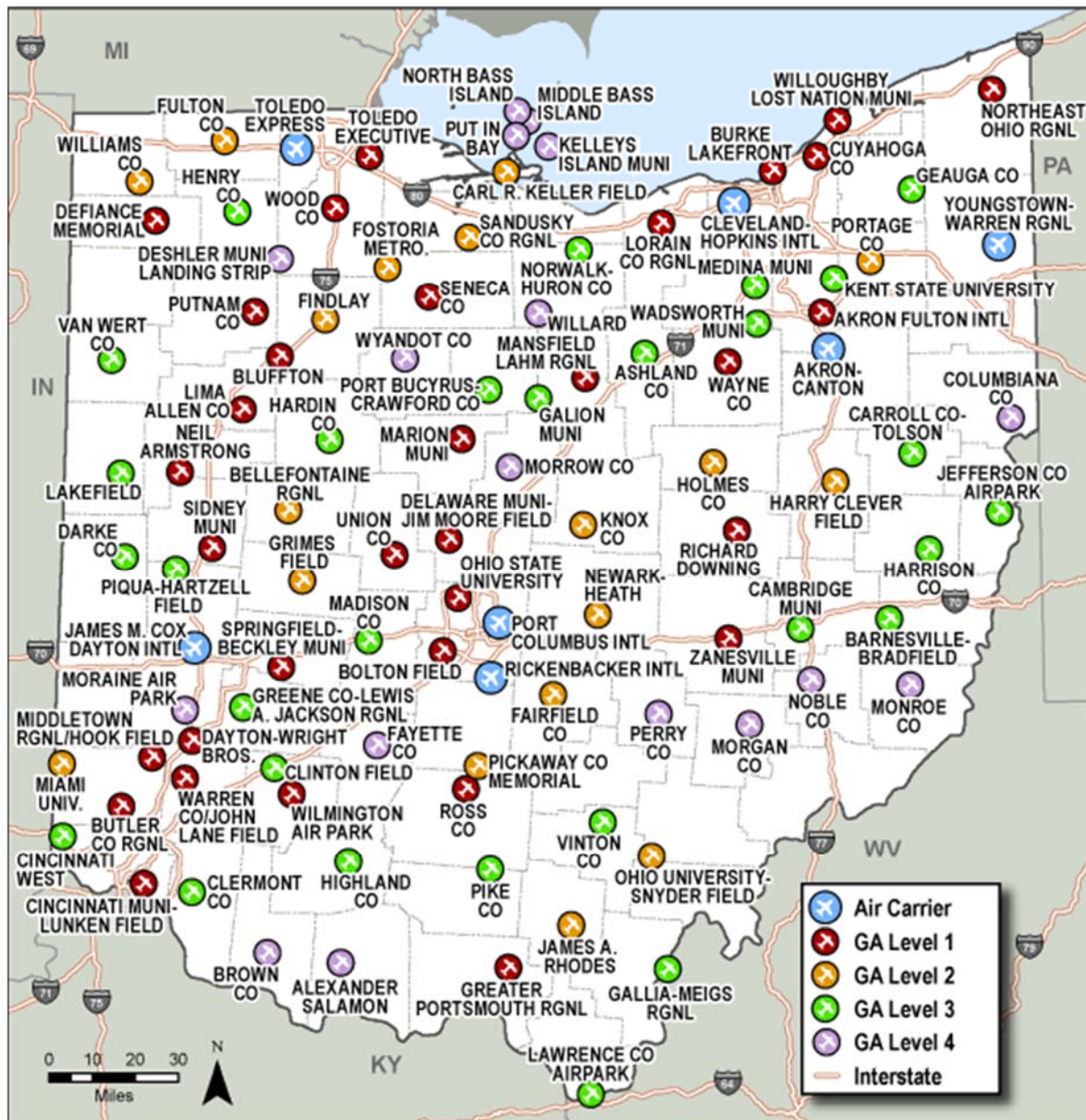


Source: Ohio Airports Focus Study, ODOT.



KOSU is also a part of the Ohio Airport System Plan (OASP), which consists of 104 aviation facilities of statewide importance. Within the OASP, KOSU is classified as a Level 1 airport. These airports are intended to meet nearly all the needs of general aviation turbine-powered and corporate jet aircraft while also supporting recreational general aviation activities and flight training. **Exhibit 1.3-3** shows all the OASP airports within Ohio.

**Exhibit 1.3-3**



Source: Ohio Airports Focus Study, ODOT.

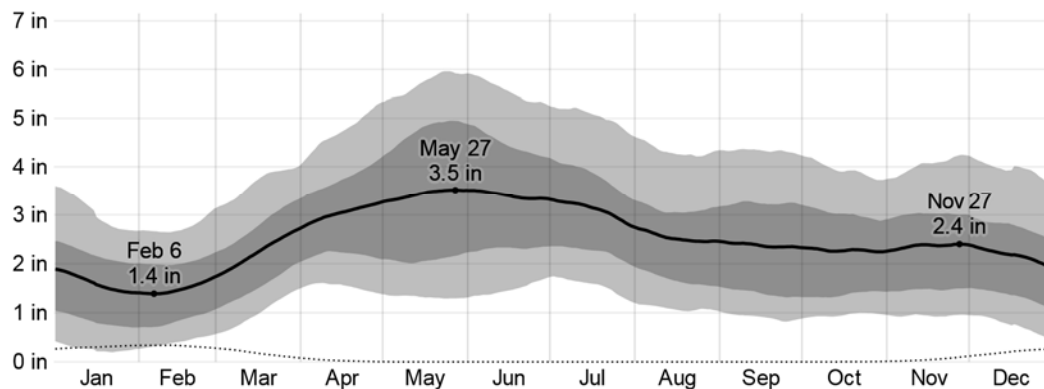
## 1.4 Climate and Meteorological Data<sup>5</sup>

This section discusses general climate conditions. Specific weather as it relates to the facilities needed at the Ohio State Airport are discussed in the Facility Requirements chapter.

The KOSU climate is typical of the Midwest United States. The airport experiences the spectrum of weather with four distinct seasons, including warm, humid summers and cold winters. The temperatures typically vary from 22°F to 84°F. Typically, the hottest day of the year comes in July, with an average high of 84°F and low of 66°F. The coldest day typically comes in January, with an average low of 22°F and high of 36°F.

Cloud cover varies throughout the year, with the clearer part of the year occurring from approximately June through about October. Precipitation also varies throughout the year. The wetter season lasts from the end of March to the beginning of August, with a greater than 30% change of precipitation on any given day. The wettest days happen in May, with the odds of precipitation reaching 45% and the average rainfall approximately 3.5 inches. The most snow falls in January and February. (See **Exhibit 1.4-1.**)

**Exhibit 1.4-1: Average Monthly Rainfall**



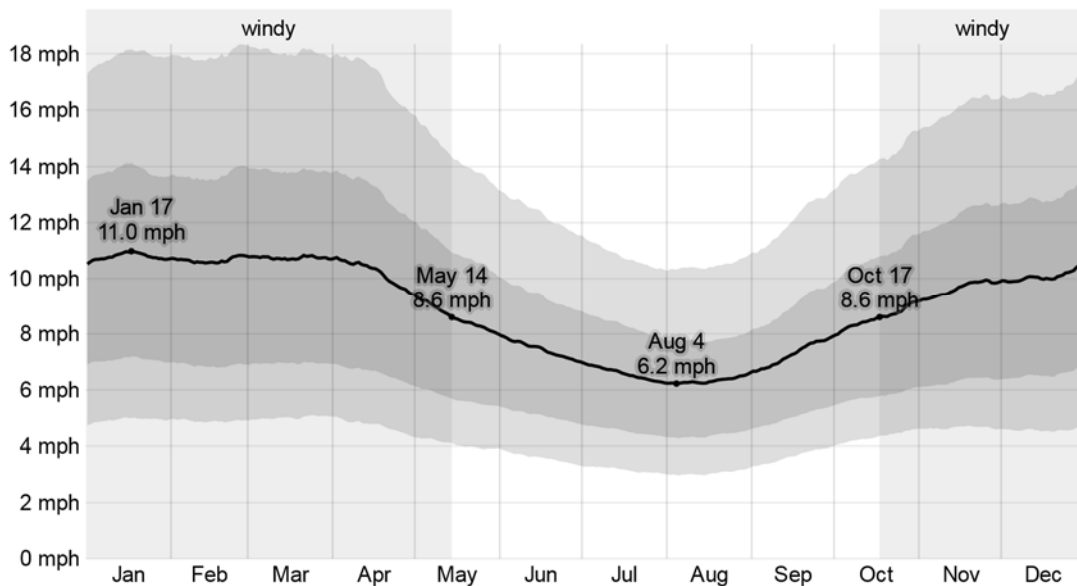
The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. The thin dotted line is the corresponding average liquid-equivalent snowfall.

Source: WeatherSpark, January 29, 2018.

<sup>5</sup> Weather data was obtained from WeatherSpark, which uses the KOSU weather station for historical temperature and dew point when data was available. In the case of missing or erroneous measurements from this station, WeatherSpark uses records from nearby stations, including Bolton Field, Delaware Municipal Airport - Jim Moore Field, Port Columbus International Airport, Rickenbacker International Airport, Union County Airport, Fairfield County Airport, Marion Municipal Airport, and Knox County Airport. Other data comes from NASA's MERRA-2 Modern-Era Retrospective Analysis, for reconstructions. This has the advantages of temporal and spatial completeness, but are also can be affected by model-based errors.

The average hourly wind speed in the Columbus area experiences significant seasonal variations. The windier part of the year runs from mid-October to mid-May, with average wind speeds of more than 8.6 miles per hour (at 10 meters above the ground). The windiest day of the year occurs in January, with an average hourly wind speed of 11 mph. The calmer time of year lasts from May 14 to October 17. The calmest day of the year is August 4, with an average hourly wind speed of 6.2 mph. The wind generally blows from the west the majority of the time, 9.4 months. (See **Exhibit 1.4-2.**)

**Exhibit 1.4-2: Average Wind Speed (10 meters above the ground)**

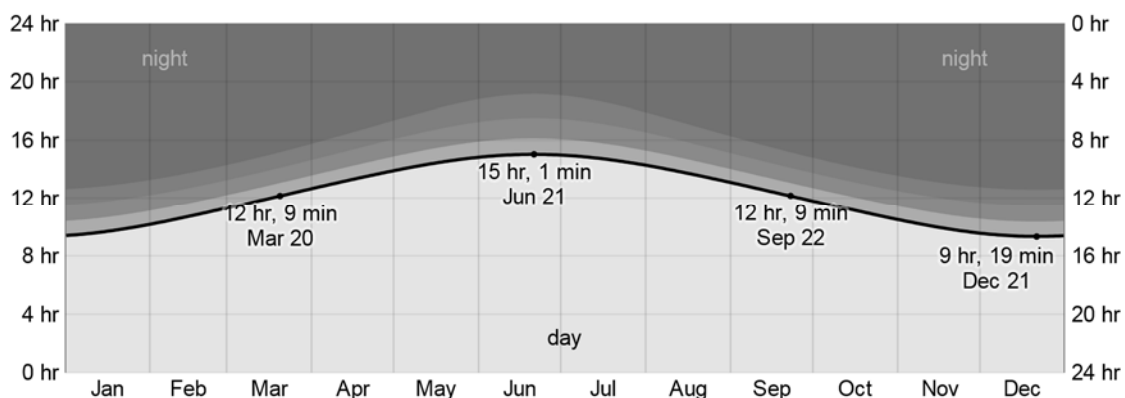


The average of mean hourly wind speeds (dark gray line), with 25th to 75th and 10th to 90th percentile bands.

Source: WeatherSpark, January 29, 2018.

The length of the day at KOSU varies like other areas of the world. The shortest day occurs December on the 21<sup>st</sup> and the longest day in June on the 21<sup>st</sup>. (See **Exhibit 1.4-3.**)

**Exhibit 1.4-3: Hours of Daylight and Twilight**



The number of hours during which the Sun is visible (black line). From bottom (most yellow) to top (most gray), the color bands indicate: full daylight, twilight (civil, nautical, and astronomical), and full night.

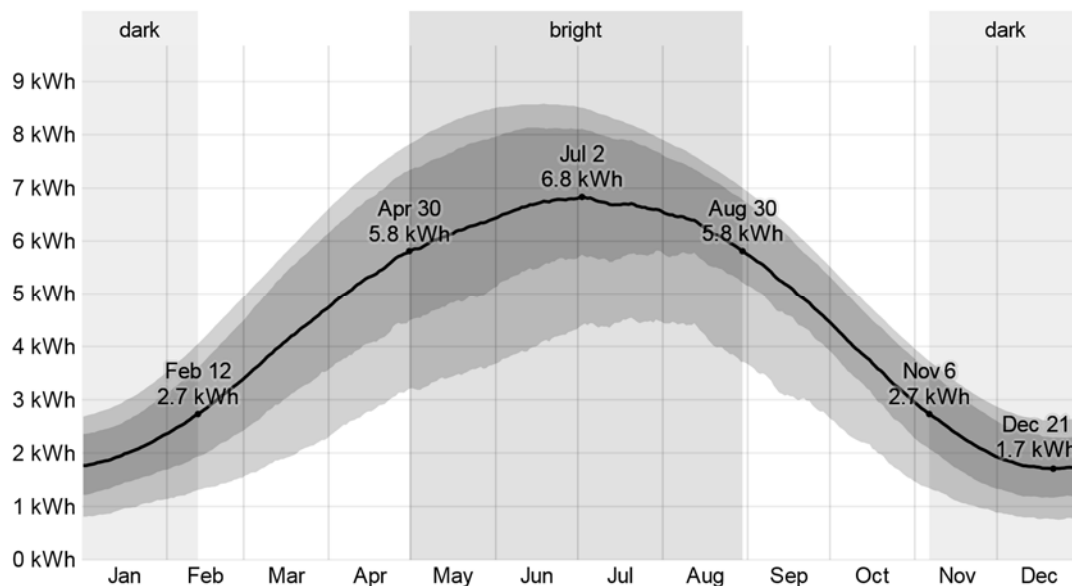
Left axis is day and right axis is night.

Source: WeatherSpark, January 29, 2018.



In relation to solar energy, the brighter period of the year, from May through August, has an average daily incident shortwave energy per square meter of above 5.8 kWh. The darker period is from early November to mid-February, with an average of 1.7 kWh daily. (See **Exhibit 1.4-4.**)

**Exhibit 1.4-4: Average Daily Incident Shortwave Solar Energy**



The average daily shortwave solar energy reaching the ground per square meter (orange line), with 25th to 75th and 10th to 90th percentile bands.

Source: WeatherSpark, January 29, 2018.

## 1.5 Existing Airport Facilities

KOSU is comprised of a complex and interconnected system of facilities that works to provide a safe and enjoyable user experience. Some of the facilities considered in more depth below are runways, taxiways, hangars, lighting networks, and navigational aids, to name a few. **Exhibit 1.5-1** below provides an overview of pertinent airport information.

**Exhibit 1.5-1: General Airport Information**

General		
State:	Ohio	
County:	Franklin	
Control Tower:	Yes	
Sectional Chart:	Detroit	
Elevation:	905.5 ft.	
Weather		
Weather Source:	ATIS/ASOS 121.35	
Frequency:	121.35	
Communications/Navigation:		
CTAF/UNICOM:	118.8/122.95	
Approach/Departure Control:	Columbus 125.95	
ARTCC:	Indianapolis Center	
Services		
Fuel:	100LL, JET A-1+	
Airframe Service:	Major	
Power Plant Service:	Major	
Bottled Oxygen:	None	
Bulk Oxygen:	High/Low	
Pilot Training:	Yes	
Aircraft Rental:	Yes	
Other		
Wind Indicator:	Lighted-In service	
Segmented Circle:	No	
Beacon:	White-Green (lighted land airport)	
Hangars:	T, Conventional, and Corporate	

Source: FAA Airport 5010 Form; AirNav Website; KOSU

KOSU offers airside facilities that include three asphalt runways - two parallel 9-27 runways, and one intersecting crosswind runway (5-23) - and one helipad. Runway 9R-27L currently serves as the primary runway, measuring 5,004 feet long and 100 feet wide. Runway 9L-27R is 2,994 feet long and 100 feet wide. The crosswind runway, Runway 5-23, is 3,562 feet long and 100 feet wide (**Exhibit 1.5-2**). The helipad provides 1,600 square feet of surface for helicopters to utilize. A fourth runway, Runway 14-32, was decommissioned on October 5, 2015, for a number of reasons, including a deteriorating lighting system and safety considerations.<sup>6</sup>

According to the FAA, KOSU supported over 87,000 annual flight operations in 2017.<sup>7</sup> The airport is served by a combination of medium and high-intensity runway and taxiway lights, an air traffic control tower, four T-hangar buildings, one-hundred ninety available tie-downs, a maintenance hangar, eight fuel tanks, and an aircraft rescue

<sup>6</sup> The Ohio State University Airport, *Runway 14/32 Decommissioning*, Available at <https://osuairport.org/news/2015/10/runway-1432-decommissioning> (October 2017).

<sup>7</sup> FAA, Air Traffic Activity System, Airport Operations.





airport staff also started working with US Customs & Border Patrol officials to study the possibilities of having US Customs services at the airport.<sup>9</sup>

### 1.5.1 Runways and Helipads

KOSU is served by two parallel runways, one crosswind runway, and one helipad. The details of these four landing surfaces are detailed below.

**Exhibit 1.5-2: Runway and Helipad Information**

Primary Runway Information	Runway 09R	Runway 27L
<b>Threshold Latitude:</b>	N 40° 04' 37.7287"	N 40° 04' 40.2538"
<b>Threshold Longitude:</b>	W 083° 04' 53.7698"	W 083° 03' 49.4881"
<b>Threshold Horizontal Datum:</b>	NAD83	NAD83
<b>Threshold Vertical Datum:</b>	NAVD88	NAVD88
<b>Status:</b>	Asphalt (Grooved)	Asphalt (Grooved)
<b>Markings:</b>	Precision	Non-precision
<b>Physical Length:</b>	5004	5004
<b>Width:</b>	100	100
<b>Gradient:</b>	-0.2%	0.2%
<b>Runway Lights:</b>	HIRL	HIRL
<b>REIL:</b>	No	Yes
<b>VGSI Lights</b>		
<b>Type:</b>	PAPI-4L	PAPI-4L
<b>Threshold Cross Height:</b>	51	25.7
<b>Commission Date:</b>	11-18-2009	11-18-2009
<b>Commission Angle:</b>	3.0	3.0
<b>Reference Point Latitude:</b>	N 40° 04' 38.1900"	N 40° 04' 40.0000"
<b>Reference Point Longitude:</b>	W 083° 04' 42.0800"	W 083° 03' 56.0000"
<b>Reference Point Elevation:</b>	904.6	890.4
<b>Reference Point Threshold:</b>	910	507
Parallel Runway Information	Runway 09L	Runway 27R
<b>Threshold Latitude:</b>	N 40° 04' 57.7000"	N 40° 04' 59.2095"
<b>Threshold Longitude:</b>	W 083° 04' 44.0527"	W 083° 04' 5.5873"
<b>Threshold Horizontal Datum:</b>	NAD83	NAD83
<b>Threshold Vertical Datum:</b>	NAVD88	NAVD88
<b>Status:</b>	Asphalt	Asphalt
<b>Markings:</b>	Basic	Basic
<b>Physical Length:</b>	2994	2994
<b>Width:</b>	100	100
<b>Gradient:</b>	-0.4%	+0.4%
<b>Runway Lights:</b>	MIRL	MIRL
<b>REIL:</b>	No	No
<b>VGSI Lights</b>		

<sup>9</sup> The Ohio State University Airport, US Customs Survey, Available at <https://osuairport.org/news/2017/10/us-customs-survey> (October 2017).

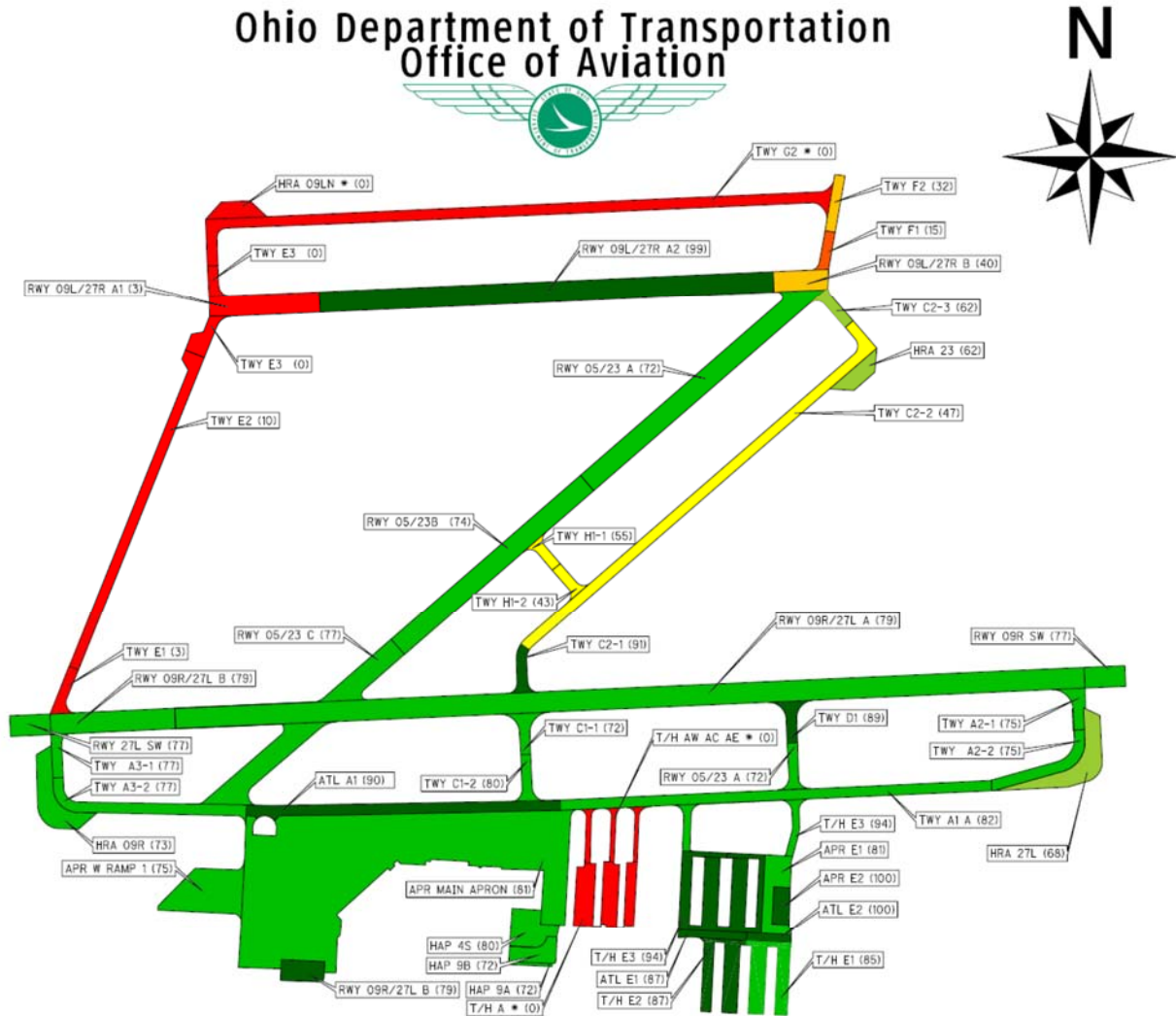
<b>Type:</b>	VASI-2L	VASI-2L
<b>Threshold Cross Height:</b>	28.7	41.7
<b>Commission Date:</b>	11-22-2005	11-22-2005
<b>Commission Angle:</b>	3.0	3.0
<b>Reference Point Latitude:</b>	N 40° 04' 57.9800"	N 40° 04' 58.9400"
<b>Reference Point Longitude:</b>	W 083° 04' 37.0200"	W 083° 04' 12.5700"
<b>Reference Point Elevation:</b>	904.4	904.4
<b>Reference Point Threshold:</b>	547	543
<b>Crosswind Runway Information</b>	<b>Runway 05</b>	<b>Runway 23</b>
<b>Threshold Latitude:</b>	N 40° 04' 34.6008"	N 40° 04' 57.8103"
<b>Threshold Longitude:</b>	W 083° 04' 42.4614"	W 083° 04' 8.0118"
<b>Threshold Horizontal Datum:</b>	NAD83	NAD83
<b>Threshold Vertical Datum:</b>	NAVD88	NAVD88
<b>Status:</b>	Asphalt	Asphalt
<b>Markings:</b>	Basic	Basic
<b>Physical Length:</b>	3562	3562
<b>Width:</b>	100	100
<b>Gradient:</b>	-0.3	0.3%
<b>Runway Lights:</b>	MIRL	MIRL
<b>REIL:</b>	No	No
<b>Helipad Information</b>		
<b>Latitude:</b>	N 40° 05' 5.2700"	
<b>Longitude:</b>	W 083° 04' 6.5900"	
<b>Threshold Horizontal Datum:</b>	NAD83	
<b>Threshold Vertical Datum:</b>	NAVD88	
<b>Status:</b>	Asphalt	
<b>Physical Dimensions:</b>	40x40	
<b>Traffic Pattern Direction:</b>	Left	
<b>Reference Point Elevation:</b>	890	

Sources: FAA Airport 5010 Form, 2017; FAA Airport AVNIS Datasheet, 2017; AirNav.com, 2017; KOSU, 20187.

### 1.5.2 Pavement Condition

In 2011, the Ohio Department of Transportation conducted a pavement condition analysis of KOSU's airside pavement. **Exhibit 1.5-3** below graphically expresses the condition of KOSU's pavement as of 2011. Since this analysis, runway 9L/27R has been rehabilitated. Primary RW PCN was calculated at 72/F/D/X/T and the full report is included in **Appendix G**.

### Exhibit 1.5-3: Pavement Condition Map



## Ohio State University (OSU)

## Pavement Condition Index

02/02/2018

- 100-86 Preventative Maintenance
- 85-71 Preventative Maintenance
- 70-56 Preventative Maintenance/OverLay
- 55-41 Overlay/Reconstruction
- 40-26 Reconstruction
- 25-11 Reconstruction
- 10-0 Reconstruction

**BRANCH KEY:**

RWY - RUNWAY

TWY - TAXIWAY

**HRA - HOLDING/RUN-UP APRON**

**APR - APRON**

ATL - APRON TAXILANE  
HTW - HANGAR TAXILANE

HTW - HANGAR TAXIWAY  
T/H - T HANGAR APRONS

### T/H - T-HANGAR APRONS

\* PAVEMENT NOT INSPECTED PCI COMPUTED

Sources: ODOT

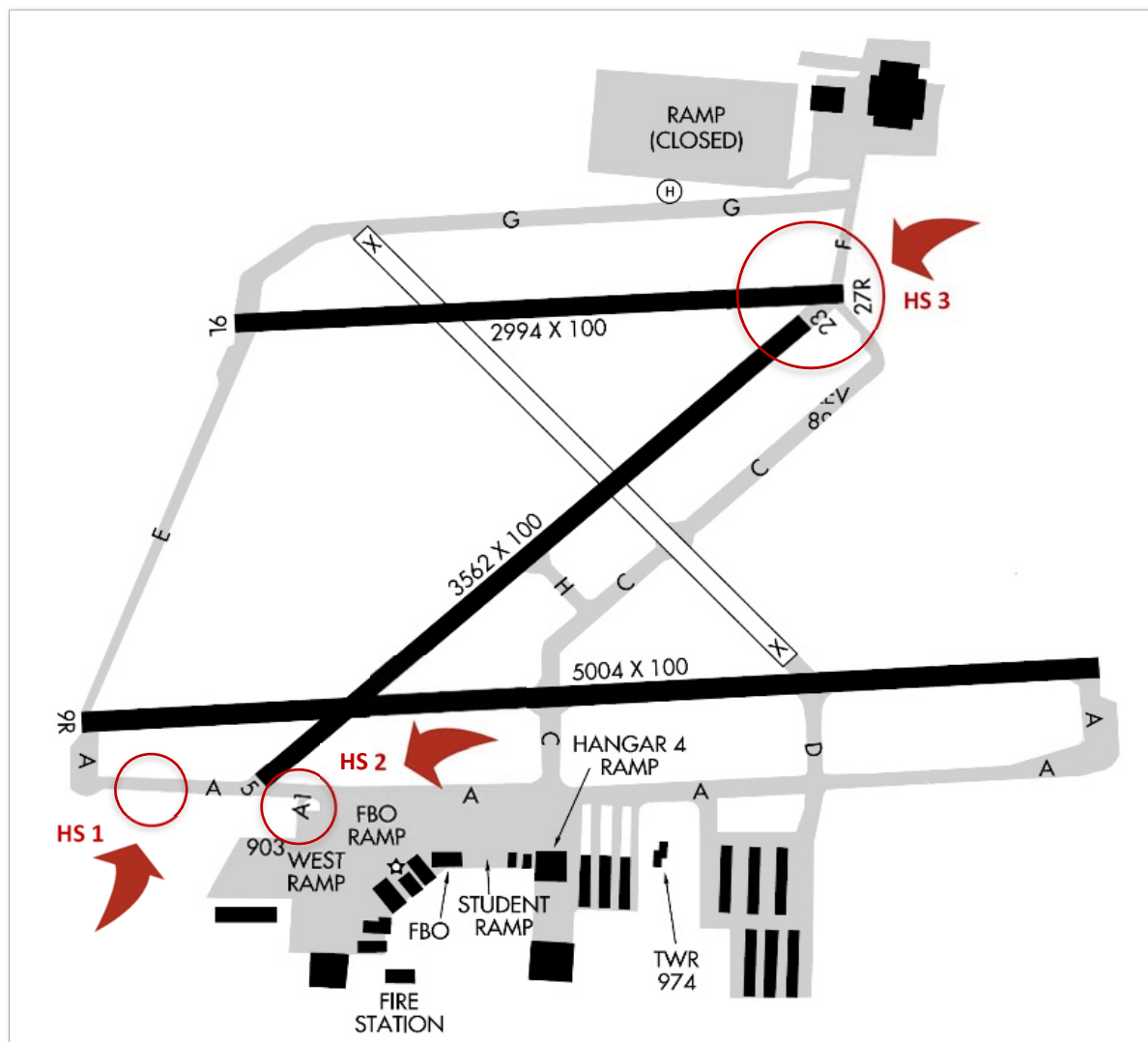
### 1.5.3 Hot Spots

A hot spot is defined as a location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary. KOSU has three hotspots:

- HS 1 When holding short of Runway 09R, aircraft must clear Runway 05 hold short line on Taxiway A, west of Runway 05.
- HS 2 Runway 05 hold short line proximity to west ramp on Taxiway A.
- HS 3 Wrong Runway departure risk: Unusual geometry at Runway 27R, Runway 23, Taxiway C and Taxiway F intersection; Runway 23 threshold is beyond Runway 27R on Taxiway F southbound.

These hotspots are depicted on **Exhibit 1.5.3-1**.

**Exhibit 1.5.3-1: Airport Layout Diagram with Hot Spots**



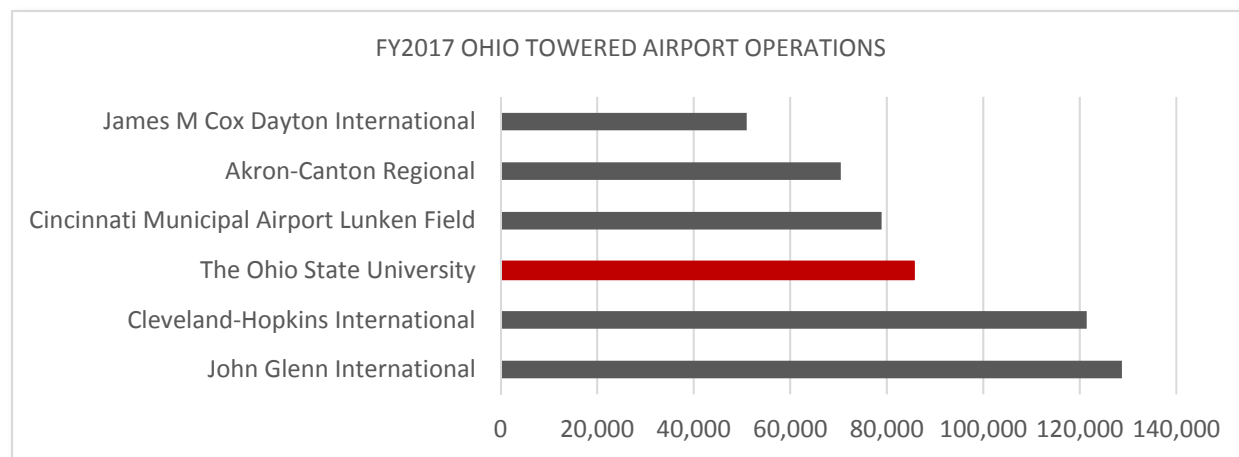
Source: FAA Airport Diagram, 2017



## 1.6 Airspace / Air Traffic Control

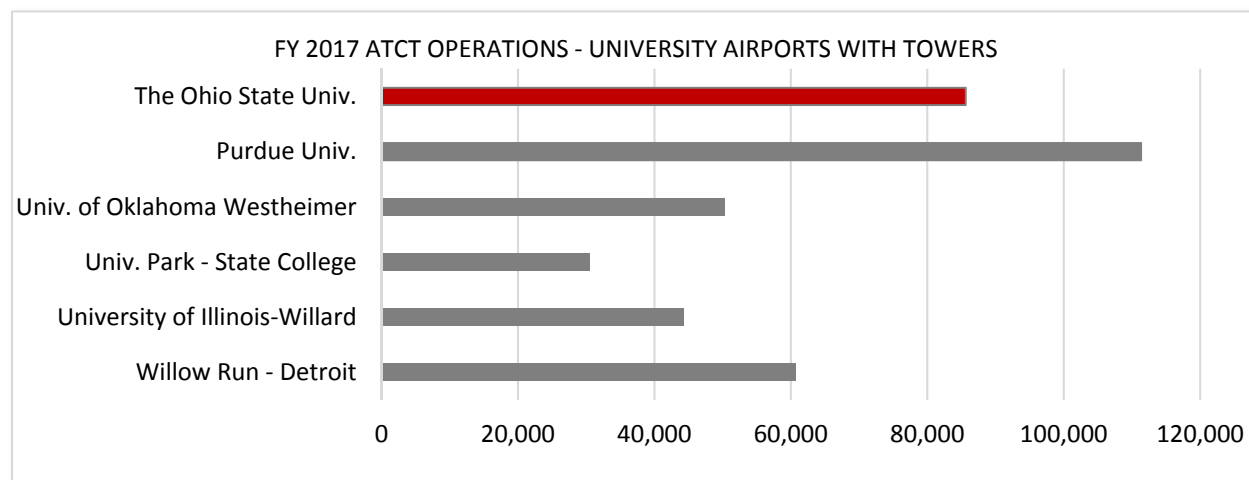
In August 1997, Midwest Air Traffic Control Services, Inc. was contracted by the FAA to provide air traffic control (ATC) services at The Ohio State University Airport and is known as “State Tower”. For Fiscal Year 2016-2017, State Tower ranked 44 in total operations at the nation’s 253 Federal Contract Towers<sup>10</sup> and 186 for total operations at all 517 Air Traffic Control Towered airports.<sup>11</sup> As compared to all Ohio towered airports, KOSU ranks third highest in total airport operations, and as compared to other university owned airports with towers, KOSU ranks second. (See Exhibits 1.6-1 and 1.6-2.)

**Exhibit 1.6-1: Ohio Towered Airport Operations**



Source: FAA Air Traffic Control Tower (ATCT) Aircraft Operations Counts, Fiscal Years 2016 – 2017 (Ranked by State), Quadrex Aviation, LLC, November 2017.

**Exhibit 1.6-1: University Owned Towered Airport Operations**



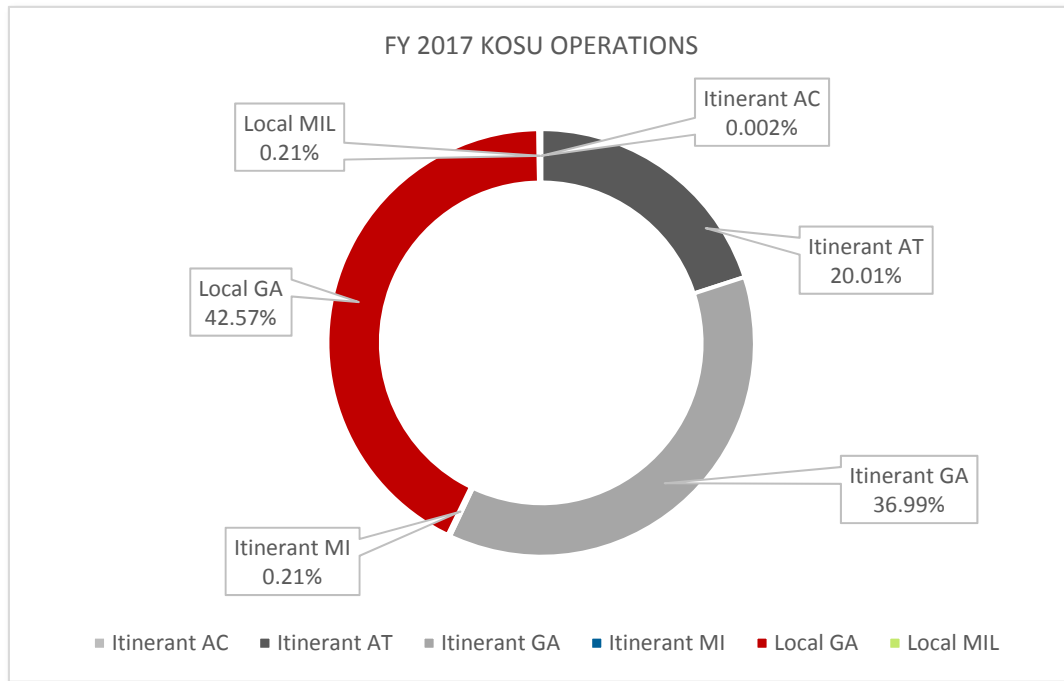
Source: FAA Air Traffic Control Tower (ATCT) Aircraft Operations Counts, Fiscal Years 2016 – 2017 (Ranked by State), Quadrex Aviation, LLC, November 2017.

<sup>10</sup> Federal Contract Tower Program (FCT) Air Traffic Control Operations, Fiscal Years 2016 – 2017 (Ranked by Total Operations), Quadrex Aviation, LLC, November 2017.

<sup>11</sup> FAA Air Traffic Control Tower (ATCT) Aircraft Operations Counts, Fiscal Years 2016 – 2017 (Ranked by State), Quadrex Aviation, LLC, November 2017.

The operations controlled by State Tower are made up of slightly more itinerant than local operations. While the clear majority of the users are general aviation, 20 percent are comprised of air taxi. (See **Exhibit 1.6-3**.)

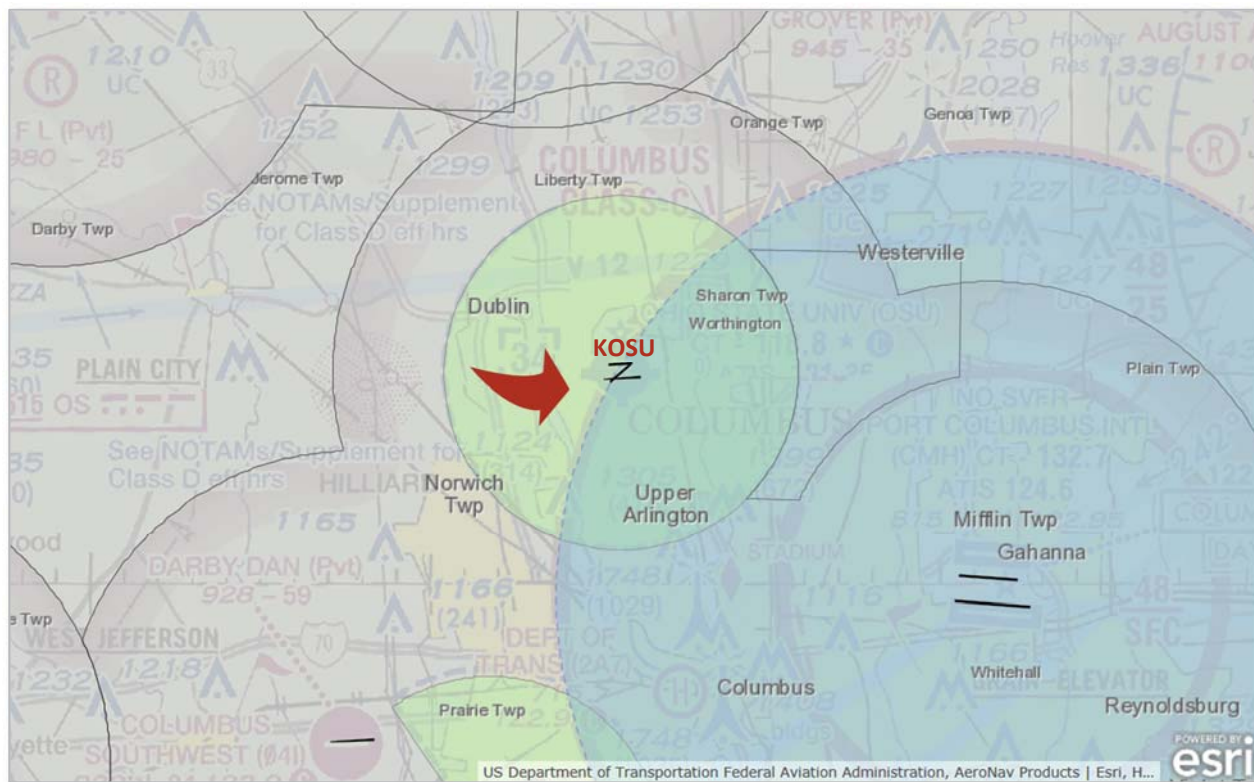
**Exhibit 1.6-3: KOSU Operations – Local and Itinerant**



Source: FAA Air Traffic Control Tower (ATCT) Aircraft Operations Counts, Fiscal Years 2016 – 2017 (Ranked by State), Quadrex Aviation, LLC, November 2017.

State Tower provides the flying public with aircraft arrival and departure procedures. Because of the tower, the airport is within Class D airspace, which extends from the ground to 2,500 feet MSL. The airport also falls on the outer edge of Port John Glenn Columbus International Airport's (CMH) Class C airspace. **Exhibit 1.6-4** is from the FAA Sectional Chart and depicts this airspace.

**Exhibit 1.6-4: KOSU Airspace**



Source: FAA Sectional Chart, ESRI ArcGIS

### **1.6.1 Arriving Aircraft**

Pilots of inbound aircraft to KOSU for a Full Stop, Touch & GO, Low Approach, Stop & GO, Option Approach (or to transition the airport's airspace) obtain ATIS information prior to 10 nautical miles from the airport. Then, at 10 nautical miles, they are to contact the tower to ensure proper sequencing.

In the case of VFR flight following with CMH approach, normal procedure is for CMH Approach to terminate service and switch the pilot to the KOSU Tower frequency far enough out to avoid violating Class D airspace. A frequency change to State Tower constitutes termination of radar services. Once terminated and/or instructed to switch to State tower, the pilot assumes responsibility of remaining clear of Class D airspace until communications are established with State Tower.

Initial aircraft reporting for KOSU includes local points of prominent locations and landmarks mostly within 2.5 miles of the airport. The majority of reporting points (located to the north of the airport) may be used by the controller in order to instruct aircraft to enter the pattern at specific places. Common communication such as "Report the twin tanks at I-270", "Report the river and the outer belt", "Report route 315 and the outer belt" are often used. "The outer belt" refers to interstate I-270, which surrounds the city of Columbus.

### **1.6.2 Departing Aircraft**

Pilots obtain the current ATIS information prior to taxi and then contact ground control and indicate their intentions and departure heading in nearest 10 degrees. This information is then given to the tower controller. How the tower controller handles a departure is dependent on the departure heading of the aircraft.

Clearance delivery (CD) for KOSU is available 24-hours on frequency 121.7. Columbus Approach Control handles CD remotely when KOSU Tower is closed.

Aircraft are not to enter any movement area prior to obtaining a taxi clearance. At KOSU, the movement area encompasses all taxiways and runways, but does not include ramp space. Taxiway A is a movement area and is connected to and runs parallel with the flight line ramp. Additionally, the approach end of Runway 5 is immediately at the northwest edge of the transient ramp.

FAA rules require pilots to obtain approval to cross or enter any runway, which also includes the Runway 5 and 32 approach zones. This takes out the mystery and confusion about runway crossings. Again, pilots must have specific permission to cross the approach zones or any other runway, including the assigned take off runway.

### **1.6.3 Tower Procedures**

ATC is required to obtain read backs of all clearances and hold short instructions. Pilots must also acknowledge with call signs when reading back. There are two approach zones that arrive over Taxiway A and 12 different runway/taxiway intersection combinations on the airfield, so "progressive taxi instructions" are encouraged by those not familiar with the airport.

Pilots are to complete the assigned taxi and run up prior to departure. Next, pilots may automatically switch to tower frequency without requesting permission from ground control to do so. On departure, it is not always possible to approve aircraft directly on course due to higher traffic volume. It can be dangerous to make an early turnout without first coordinating it with the tower because of the parallel/crossing runway configuration. Even if approved on-course, pilots should fly runway heading until one-half-mile off the departure end of the runway. Pilots are to remain on State Tower frequency until exiting the Class D Surface Area; otherwise, they may request a frequency change prior to that. No request to change frequencies upon exiting a Class Delta Surface Area is necessary.

CMH Class C Airspace overlaps about one-half of the KOSU Class D Surface Area. All pilots are to remain below CMH Class C Airspace until clear of it. The Class C Airspace begins at 2,500 feet MSL and extends up to 4,800 MSL. No pilot may enter Class C Airspace until establishing two-way radio contact with the CMH Approach Control.

Class C and Radar Flight Following services for pilots departing KOSU are available through CMH Approach. These services may be requested prior to departure with KOSU Ground Control. Pilots departing VFR along a generally southbound bearing and not requesting Radar Flight Following or Class Charlie services will be restricted to maintain VFR at or below 2,000 feet MSL until well clear of CMH Class C airspace.

## **1.7 Instrument Procedures**

### **1.7.1 Instrument Approaches**

There are four instrument approach procedures (IAP) for KOSU, all of them for primary Runway 9R-27L. Providing users with approach minimums allows for safe landing at KOSU in a variety of weather conditions. These minimums can be seen below in the series of images in **Exhibit 1.7-1**.

# Exhibit 1.7-1: KOSU Instrument Approach Procedures


COLUMBUS, OHIO

AL-5387 (FAA)

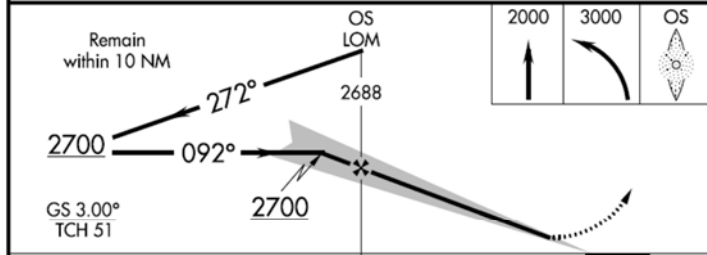
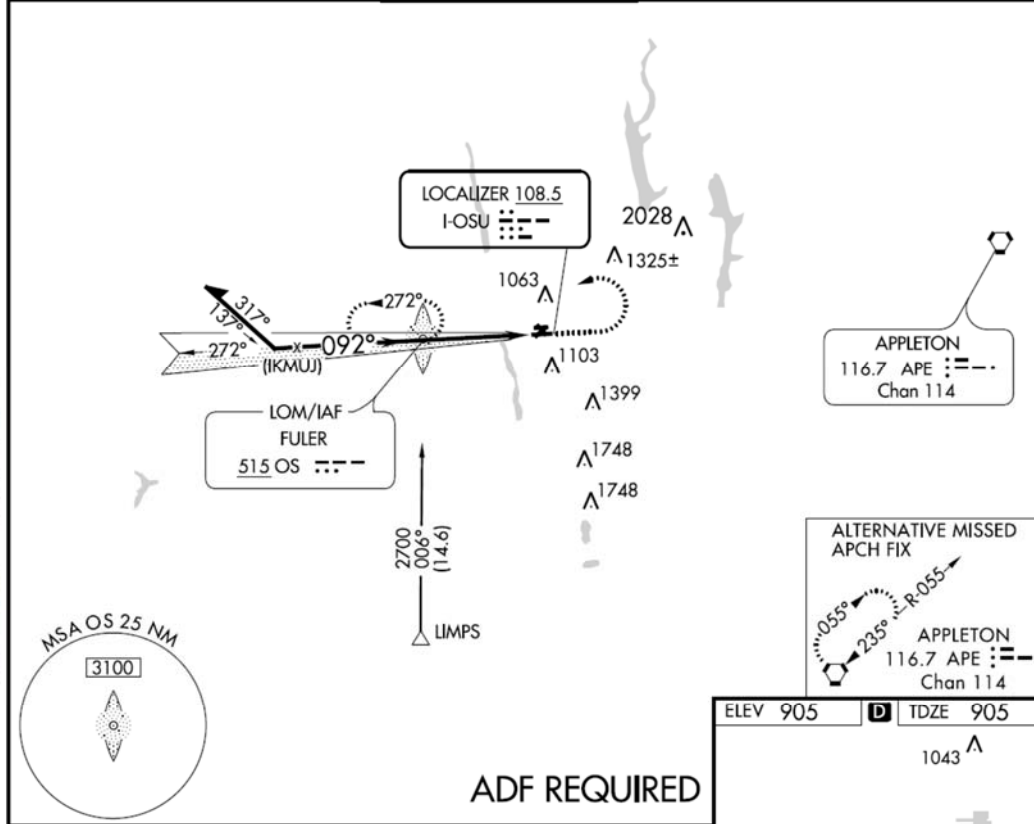
17285

LOC I-OSU <b>108.5</b>	APP CRS <b>092°</b>	Rwy Idg <b>5004</b>
		TDZE <b>905</b>
		Apt Elev <b>905</b>

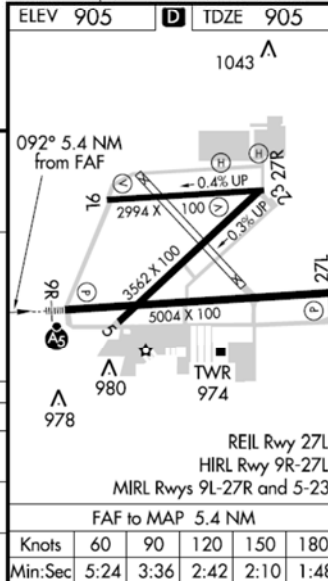
**ILS or LOC RWY 9R**  
OHIO STATE UNIVERSITY (OSU)

<p><b>ADF required.</b> When local altimeter setting not received, use Port Columbus altimeter setting and increase all DA 35 feet and all MDA 40 feet. Increase S-LOC 9R Cat C/D and Circling Cat C visibility <math>\frac{1}{8}</math> mile.</p>	<p><b>MALSR</b></p> 	<p><b>MISSED APPROACH:</b> Climb to 2000 then climbing left turn to 3000 direct FULER LOM and hold.</p>
--	---	---

ATIS <b>121.35</b>	COLUMBUS APP CON <b>125.95 317.775</b>	STATE TOWER * <b>118.8 (CTAF) 254.325</b>	GND CON <b>121.7</b>	CLNC DEL <b>121.7</b>	UNICOM <b>122.95</b>
-----------------------	---	--	-------------------------	--------------------------	-------------------------



CATEGORY	A	B	C	D
S-ILS 9R		1105-1/2	200 (200-1/2)	
S-LOC 9R	1420-1/2	515 (600-1/2)	1420-1	515 (600-1)
CIRCLING	1420-1	515 (600-1)	1420-1 1/2	1460-2
			515 (600-1 1/2)	555 (600-2)



COLUMBUS, OHIO

Amdt 5A 18SEP14

40°05'N - 83°04'W

Source: FAA Digital Terminal Procedures

**OHIO STATE UNIVERSITY (OSU)**  
**ILS or LOC RWY 9R**

EC-2, 04 JAN 2018 to 01 FEB 2018

EC-2, 04 JAN 2018 to 01 FEB 2018



WAAS CH <b>86420</b> <b>W09A</b>	APP CRS <b>092°</b>	Rwy Idg <b>5004</b> TDZE <b>905</b> Apt Elev <b>905</b>	AL-5387 (FAA)	17285	<b>RNAV (GPS) RWY 9R</b> OHIO STATE UNIVERSITY (OSU)
--	------------------------	---	---------------	-------	---

MALSR  
A5

**MISSED APPROACH:**  
Climb to 3200 direct  
KOLNY and hold.

ATIS  
121.35

COLUMBUS APP CON  
125.95 317.775

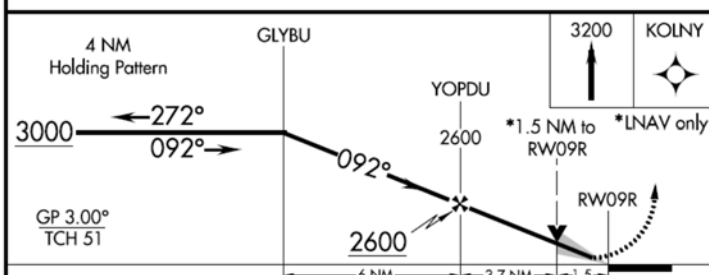
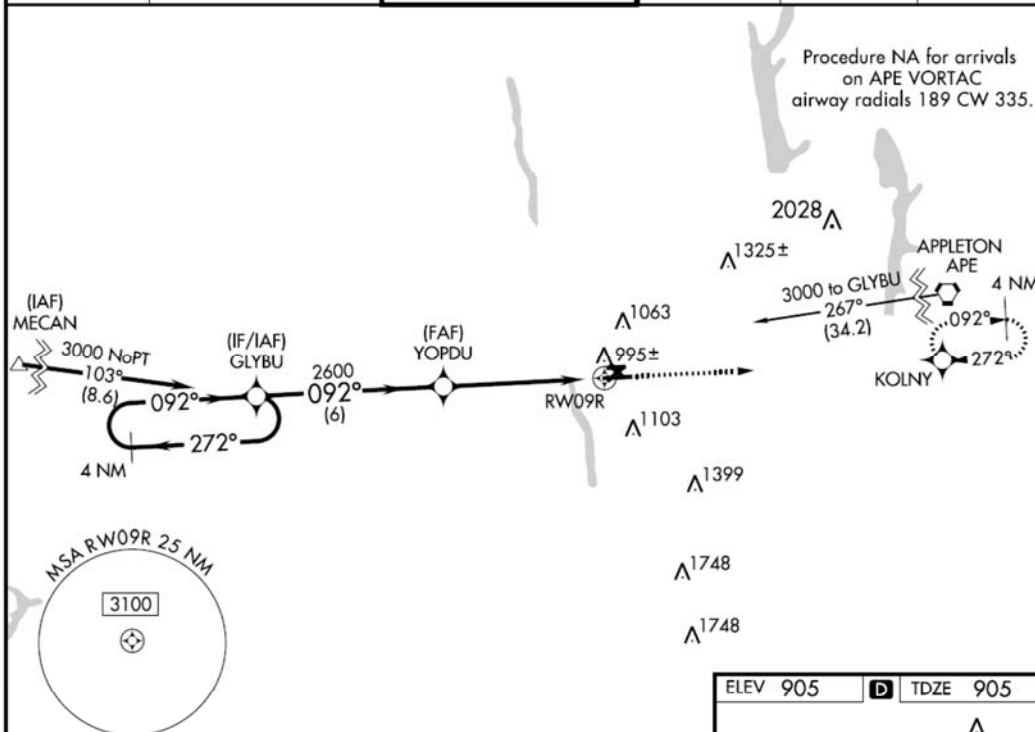
STATE TOWER ★  
118.8 (CTAF) 254.325

GND CON  
121.7

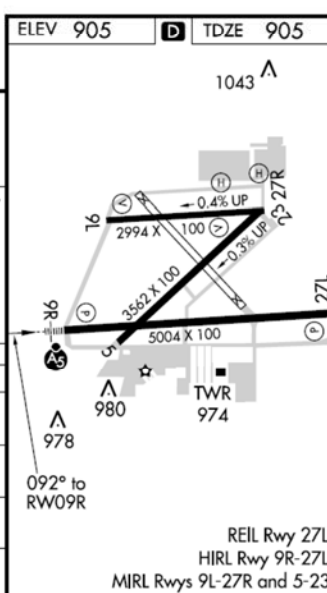
CLNC DEL  
121.7UNICOM  
122.95

EC-2, 04 JAN 2018 to 01 FEB 2018

DEC-2, 04 JAN 2018 to 01 FEB 2018



CATEGORY	A	B	C	D
LPV DA	1105-½ 200 (200-½)			
LNAV/ VNAV DA	1168-½ 263 (300-½)			
LNAV MDA	1420-½ 515 (600-½)		1420-1 515 (600-1)	
CIRCLING	1420-1 515 (600-1)		1420-1½ 515 (600-1½)	1460-2 555 (600-2)



40°05'N - 83°04'W

Source: FAA Digital Terminal Procedures

OHIO STATE UNIVERSITY (OSU)  
RNAV (GPS) RWY 9R

Exhibit 1.7-1: KOSU Instrument Approach Procedures Cont.

COLUMBUS, OHIO

AL-5387 (FAA)

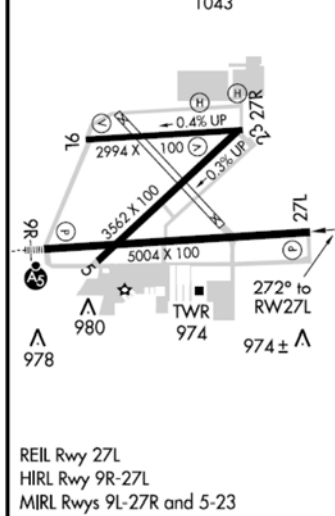
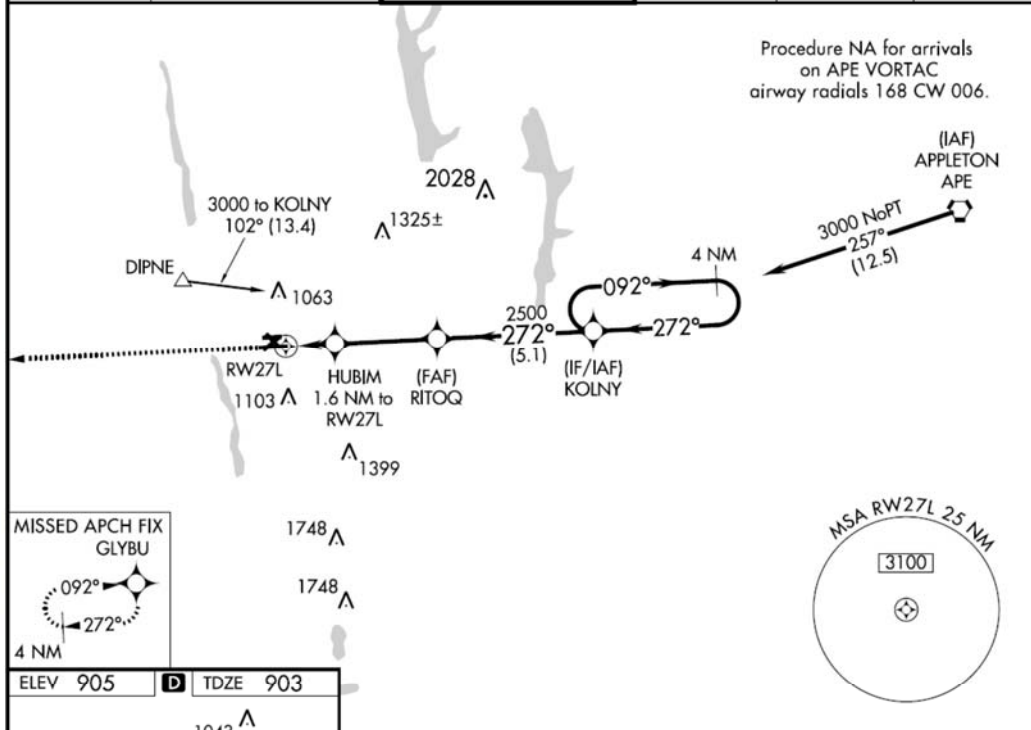
17285

WAAS CH 45720 W27A	APP CRS 272°	Rwy Idg 5004 TDZE 903 Apt Elev 905
--------------------------	-----------------	---

# RNAV (GPS) RWY 27L OHIO STATE UNIVERSITY (OSU)

<p><b>V</b> Baro-VNAV NA when using Port Columbus altimeter setting. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -16°C (4°F) or above 38°C (100°F). DME/DME RNP-0.3 NA. Visibility reduction by helicopters NA. When local altimeter setting not received, use Port Columbus altimeter setting and increase all DA 35 feet and all MDA 40 feet, increase LNAV/VNAV all Cats and LNAV Cats C/D visibility 1/8 mile.</p>	<p><b>MISSED APPROACH:</b> Climb to 3200 direct GLYBU and hold.</p>
--	---

ATIS 121.35	COLUMBUS APP CON 125.95 317.775	STATE TOWER ★ 118.8 (CTAF) 0 254.325	GND CON 121.7	CLNC DEL 121.7	UNICOM 122.95
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COLUMBUS, OHIO

Orig-A 18SEP14

40°05'N - 83°04'W

OHIO STATE UNIVERSITY (OSU)

# RNAV (GPS) RWY 27L

Source: FAA Digital Terminal Procedures

# Exhibit 1.7-1: KOSU Instrument Approach Procedures Cont.

COLUMBUS, OHIO

AL-5387 (FAA)

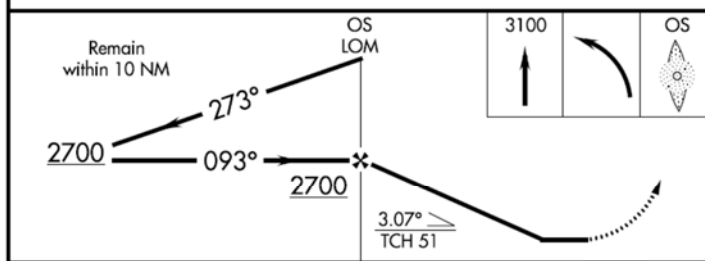
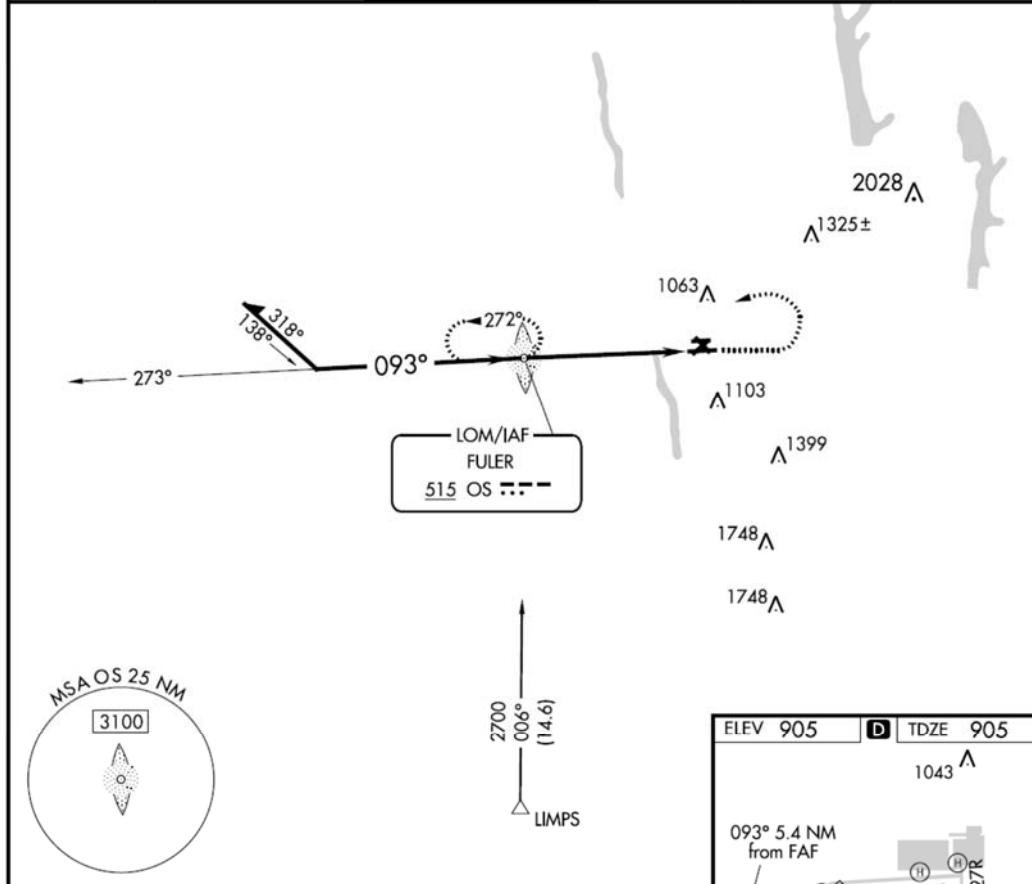
17285

LOM OS <b>515</b>	APP CRS <b>093°</b>	Rwy Idg <b>5004</b>
		TDZE <b>905</b>
		Apt Elev <b>905</b>

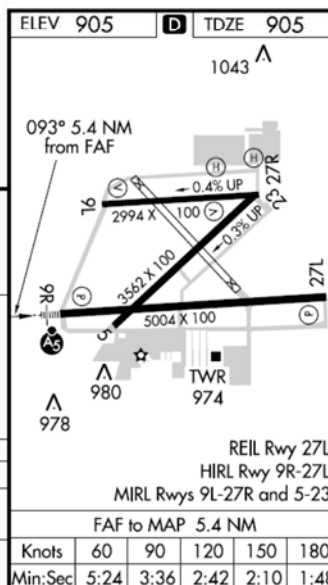
**NDB RWY 9R**  
OHIO STATE UNIVERSITY (OSU)

<p>When local altimeter setting not received, use Port Columbus altimeter setting and increase all MDA 40 feet. Increase S-9R Cat C/D and Circling Cat C visibility <math>\frac{1}{8}</math> mile.</p>		<p>MALSR</p>	<p>MISSED APPROACH: Climb to 3100 then left turn direct OS LOM and hold.</p>	
--	--	--------------	--	--

ATIS <b>121.35</b>	COLUMBUS APP CON <b>125.95 317.775</b>	STATE TOWER* <b>118.8 (CTAF) 0 254.325</b>	GND CON <b>121.7</b>	CLNC DEL <b>121.7</b>	UNICOM <b>122.95</b>
-----------------------	---	---	-------------------------	--------------------------	-------------------------



CATEGORY	A	B	C	D
S-9R	1460- $\frac{3}{4}$ 555 (600- $\frac{3}{4}$ )		1460-1 $\frac{1}{8}$ 555 (600-1 $\frac{1}{8}$ )	
CIRCLING	1460-1 555 (600-1)		1460-1 $\frac{5}{8}$ 555 (600-1 $\frac{5}{8}$ )	1460-2 555 (600-2)



COLUMBUS, OHIO

Amdt 3A 18SEP14

40°05'N - 83°04'W

**NDB RWY 9R**  
OHIO STATE UNIVERSITY (OSU)

Source: FAA Digital Terminal Procedures

EC-2, 04 JAN 2018 to 01 FEB 2018

EC-2, 04 JAN 2018 to 01 FEB 2018

### 1.7.2 Takeoff Minimums, (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors)

Under the FAA published Takeoff Minimums, (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors), KOSU has several takeoff obstacle notes relating to all runway ends except Runway 27L. These notes are shown in Exhibit 1.7.2-1 and refer mostly to trees.

Exhibit 1.7.2-1

L8

**17285**

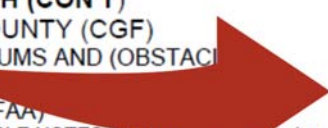
**TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)**

**CLEVELAND, OH (CON'T)**  
CUYAHOGA COUNTY (CGF)  
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES  
AMDT 1 10322 (FAA)  
TAKEOFF OBSTACLE NOTES: **Rwy 8**, trees beginning 2127' from DER, 33' right of centerline, up to 109' AGL/982' MSL. Tree 2595' from DER, 739' left of centerline, 93' AGL/947' MSL. **Rwy 24**, terrain 35' from DER, 447' left of centerline, 874' MSL. Trees beginning 755' from DER, 46' right of centerline, up to 82' AGL/975' MSL. Building 1179' from DER, 676' left of centerline, 34' AGL/917' MSL. Trees beginning 1784' from DER, 35' left of centerline, up to 92' AGL/985' MSL.

**COLUMBUS, IN**  
COLUMBUS MUNI (BAK)  
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES  
ORIG 08269 (FAA)  
TAKEOFF OBSTACLE NOTES: **Rwy 14**, tree 1589' from DER, 306' right of centerline, 40' AGL/696' MSL.

**COLUMBUS, OH**  
BOLTON FIELD (TZR)  
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

**COLUMBUS, OH (CON'T)**  
OHIO STATE UNIVERSITY (OSU)  
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES  
ORIG 11069 (FAA)  
TAKEOFF OBSTACLE NOTES: **Rwy 5**, trees beginning 1461' from DER, 48' left of centerline, up to 76' AGL/955' MSL. Trees beginning 1422' from DER, 157' right of centerline, up to 86' AGL/965' MSL. **Rwy 9L**, trees beginning 1017' from DER, 122' left of centerline, up to 86' AGL/965' MSL. Trees beginning 2001' from DER, 1015' right of centerline, up to 91' AGL/965' MSL. **Rwy 9R**, trees beginning 197' from DER, 325' left of centerline, up to 73' AGL/937' MSL. Trees beginning 973' from DER, 339' right of centerline, up to 103' AGL/957' MSL. **Rwy 14**, wind sock 371' from DER, 273' left of centerline, 10' AGL/909' MSL. Tree 1395' from DER, 872' left of centerline, 46' AGL/935' MSL. Tree 2071' from DER, 295' right of centerline, 95' AGL/974' MSL. **Rwy 23**, stacks beginning 681' from DER, 512' left of centerline, up to 64' AGL/963' MSL. Trees beginning 709' from DER, 321' left of centerline, up to 44' AGL/948' MSL. Elevator 1406' from DER, 469' left of centerline, 83' AGL/978' MSL. Trees beginning 1248' from DER, 68' right of centerline, up to 74' AGL/978' MSL. **Rwy 27R**, silos beginning 2476' from DER, 88' left of centerline, 61' AGL/971' MSL. **Rwy 32**, trees beginning 1616' from DER, 210' left of centerline, up to 99' AGL/1003' MSL.



Source: FAA Digital Terminal Procedures

### 1.7.3 Standard Instrument Arrivals and Departures

KOSU has three IFR Standard Terminal Arrival (STAR) procedures. STARs are ATC-coded IFR arrival routes established for certain airports to simplify clearance delivery procedures. KOSU STARs are showing in the series of images included in Exhibit 1.7.3-1



Source: FAA Digital Terminal Procedures

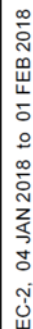
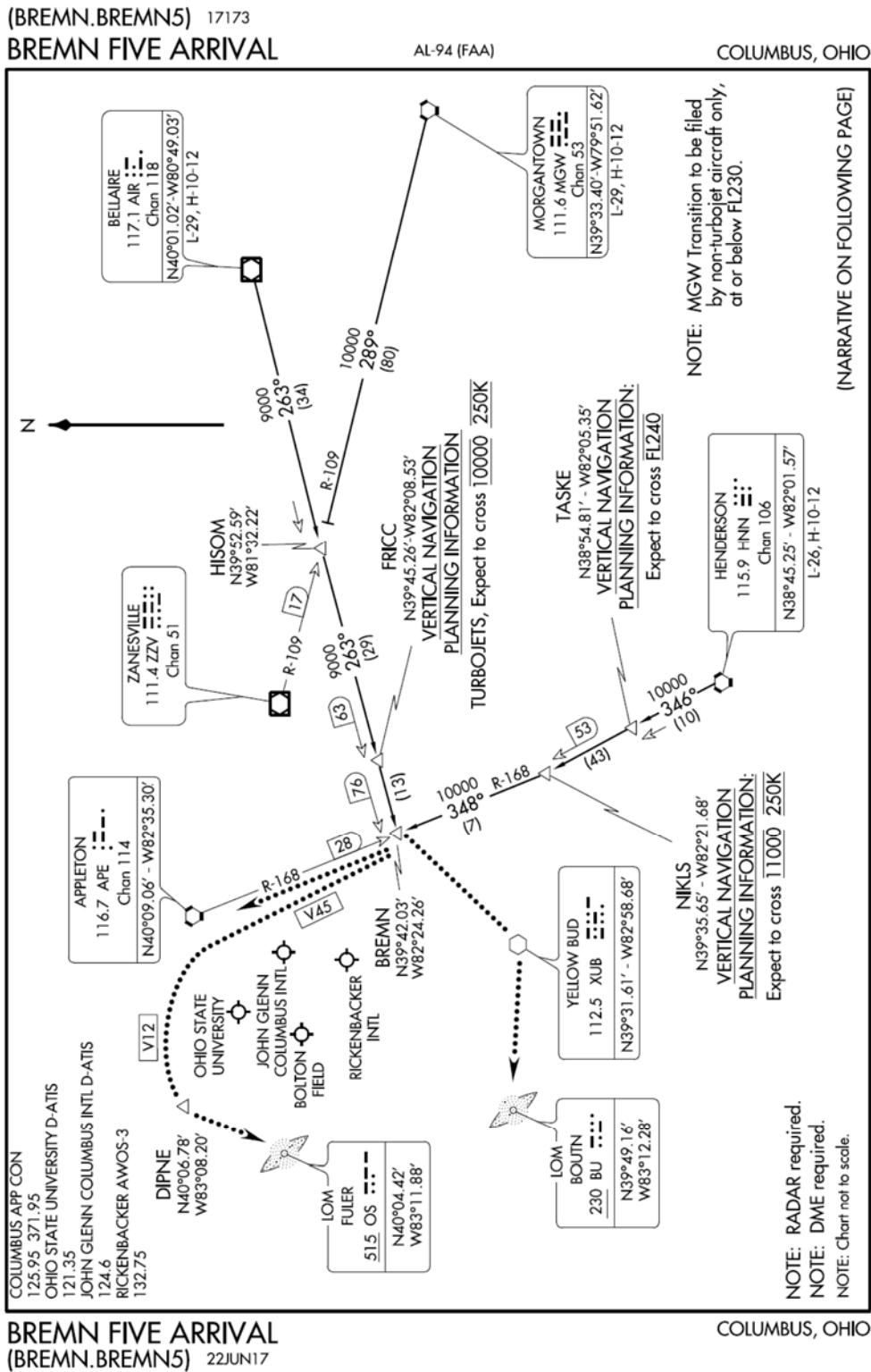




Exhibit 1.7.3-1: KOSU STARS Cont.



Source: FAA Digital Terminal Procedures

Exhibit 1.7.3-1: KOSU STARs Cont.

(BREMN.BREMN5) 17173

**BREMN FIVE ARRIVAL**

AL-94 (FAA)

COLUMBUS, OHIO

**ARRIVAL ROUTE DESCRIPTION**

BELLAIRE TRANSITION (AIR.BREMN5): From over AIR VOR/DME on AIR R-263 to BREMN. Thence. . .

HENDERSON TRANSITION (HNN.BREMN5): From over HNN VORTAC on HNN R-346 to NIKLS, then on APE R-168 to BREMN. Thence. . .

MORGANTOWN TRANSITION (MGW.BREMN5): From over MGW VORTAC on MGW R-289 and ZZV R-109 to HISOM, then on AIR R-263 to BREMN. Thence. . .

. . . from over BREMN, expect radar vectors to final approach course.

LOST COMMUNICATION PROCEDURE:

LANDING PORT COLUMBUS INTL: In the event of lost communications from BREMN direct APE VORTAC, maintain 3000 until APE VORTAC.

LANDING OHIO STATE UNIVERSITY: In the event of lost communications from BREMN on V45 to APE VORTAC then on V12 to DIPNE then direct FULER (OS) LOM, maintain 3000 until FULER (OS) LOM (ADF Required).

LANDING BOLTON FIELD: In the event of lost communications from BREMN to XUB VOR direct BOUTN (BU) LOM, maintain 3000 until BOUTN (BU) LOM (ADF Required).

EC-2, 04 JAN 2018 to 01 FEB 2018

EC-2, 04 JAN 2018 to 01 FEB 2018

**BREMN FIVE ARRIVAL**

(BREMN.BREMN5) 22JUN17

COLUMBUS, OHIO

Source: FAA Digital Terminal Procedures

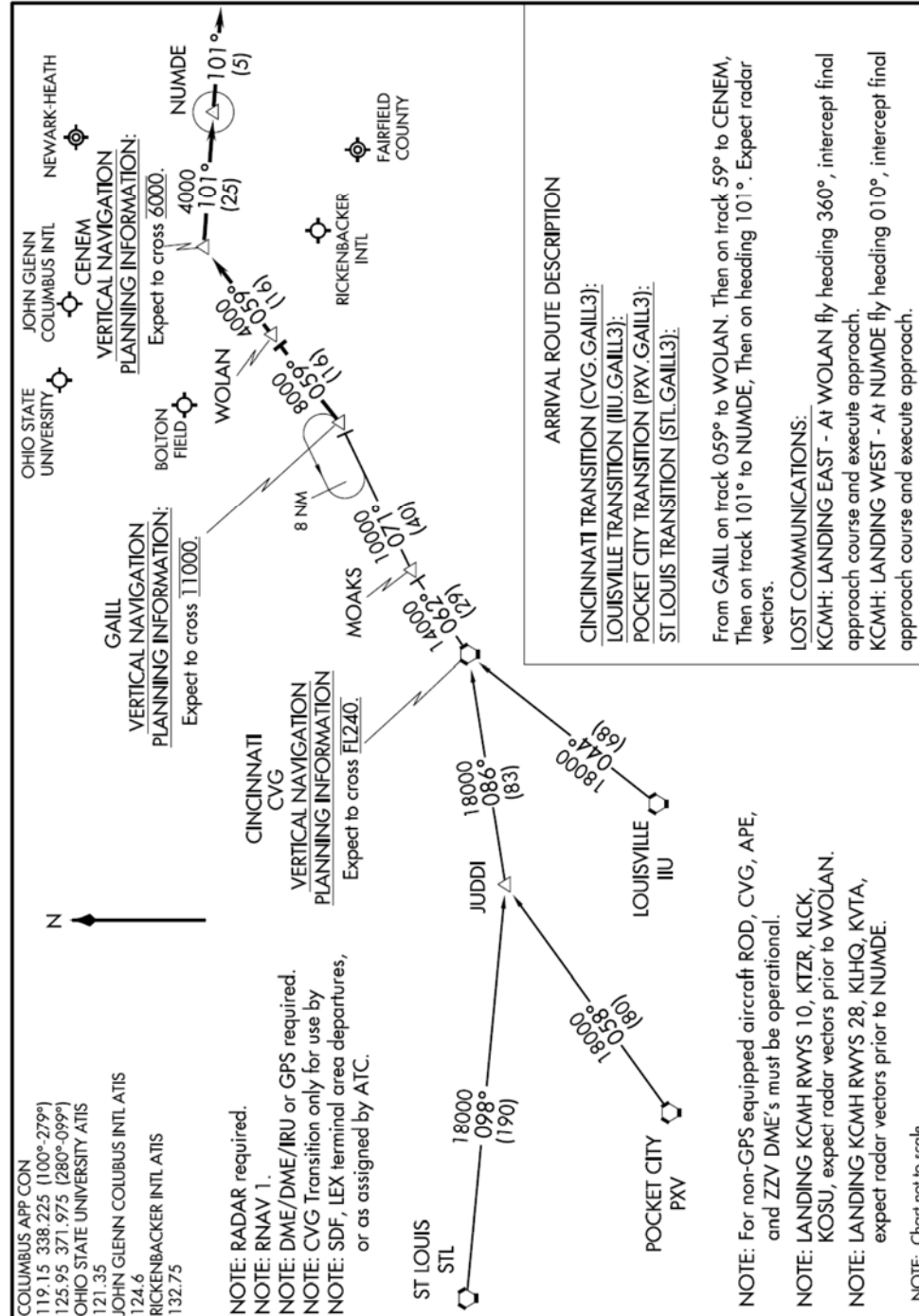
(GAILL.GAILL3) 17173

AL-94 (FAA)

# GAILL THREE ARRIVAL(RNAV)

COLUMBUS, OHIO

EC-2, 04 JAN 2018 to 01 FEB 2018



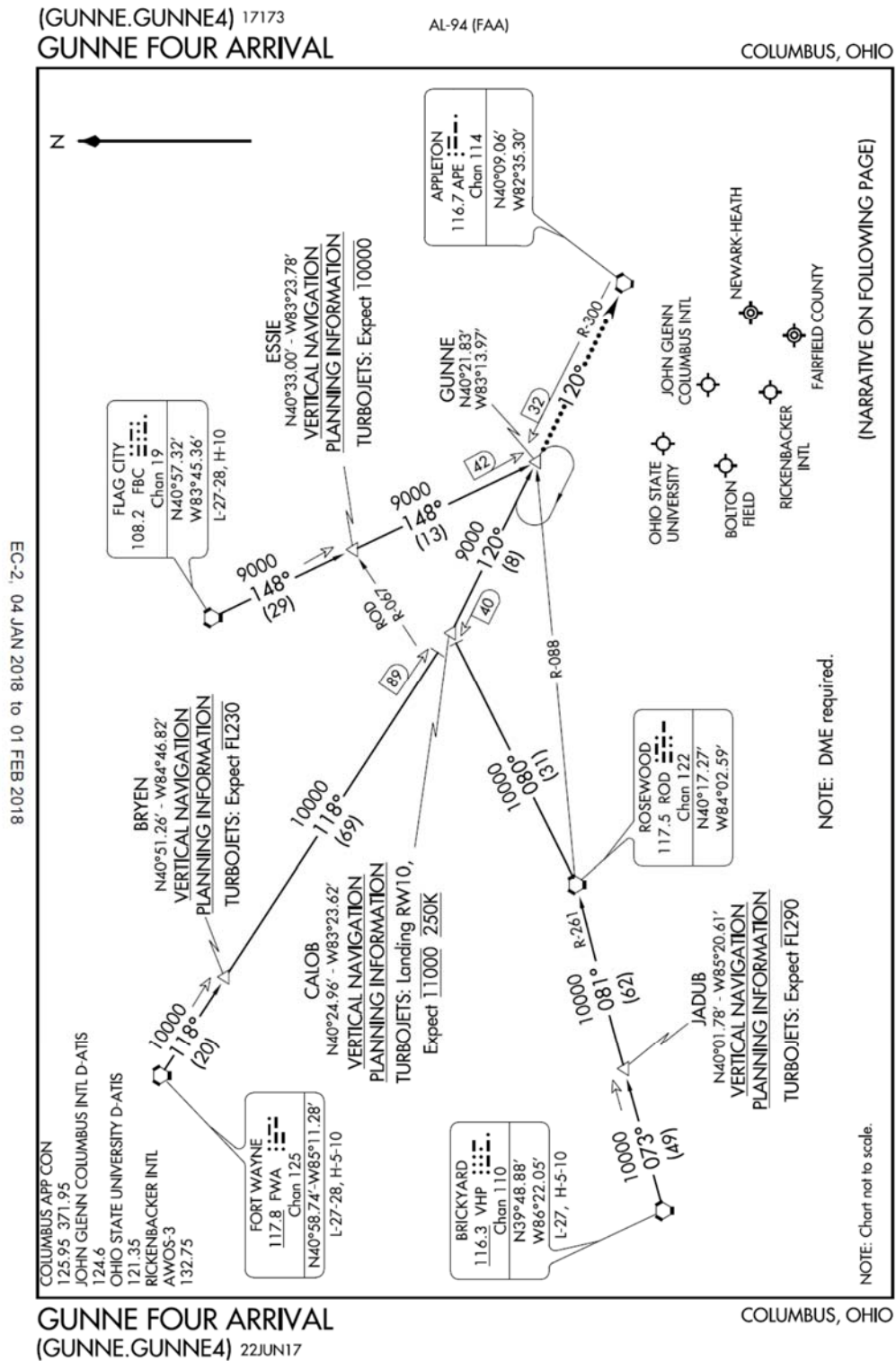
# GAILL THREE ARRIVAL(RNAV)

COLUMBUS, OHIO

(GAILL.GAILL3) 22JUN17

EC-2, 04 JAN 2018 to 01 FEB 2018

Exhibit 1.7.3-1: KOSU STARs Cont.



Source: FAA Digital Terminal Procedures

Exhibit 1.7.3-1: KOSU STARs Cont.

(GUNNE.GUNNE4) 17173  
GUNNE FOUR ARRIVAL

AL-94 (FAA)

COLUMBUS, OHIO

ARRIVAL ROUTE DESCRIPTION

BRICKYARD TRANSITION (VHP.GUNNE4): From over VHP VORTAC on VHP R-073 to JADUB, then on ROD R-261 to ROD VORTAC, then on ROD R-080 to CALOB, then on APE R-300 to GUNNE. Thence. . . .

FLAG CITY TRANSITION (FBC.GUNNE4): From over FBC VORTAC on FBC R-148 to GUNNE. Thence. . . .

FORT WAYNE TRANSITION (FWA.GUNNE4): From over FWA VORTAC on FWA R-118 to CALOB, then on APE R-300 to GUNNE. Thence. . . .

. . . .from over GUNNE, expect radar vectors to final approach course.

LOST COMMUNICATION PROCEDURE:

In the event of lost communications: For all airports - From GUNNE direct APE VORTAC, maintain 4000 until APE VORTAC.

EC-2, 04 JAN 2018 to 01 FEB 2018

EC-2, 04 JAN 2018 to 01 FEB 2018

GUNNE FOUR ARRIVAL  
(GUNNE.GUNNE4) 22JUN17

COLUMBUS, OHIO

Source: FAA Digital Terminal Procedures



## 1.8 Support Facilities

### 1.8.1 Aircraft Parking Aprons

Two asphalt aprons exist at the Airport to accommodate the long- and short-term parking needs of both based and itinerant aircraft. The apron, comprised of approximately 88,500 square feet, is available for both based and itinerant aircraft. There are approximately 131 paved tie-downs available on the existing apron areas.

### 1.8.2 Terminal Building

A new terminal was constructed at KOSU because of a generous donation from the Austin E. Knowlton Foundation. This donation supported a new aviation education and research facility with state-of-the-art flight simulators, research labs and classrooms, and a modern flight terminal. The new facilities integrate education with airport operations, benefiting Ohio students as well as Columbus-area residents and visitors. This modern facility is approximately 29,000 square feet and replaces the old general aviation terminal (1,929 square feet, administration building (4,687 square feet); and maintenance building (6,186 square feet). (See **Exhibit 1.8.2-1.**)

**Exhibit 1.8.2-1: Rendition of New KOSU Terminal**



Source: Ohio State Airport webpage, accessed February 2018.

### 1.8.3 Auto Parking

Automobile parking is located directly off West Case Road and adjacent to the general aviation terminal and flight laboratory. Visitor and staff parking combined comprise 180 paved parking spaces, including 7 spaces designated for handicap parking. Enterprise Car Rental, the sole rental car operation at the Airport, does not occupy any exclusive-use parking spaces. Overflow parking for over 50 cars is also available during special events. Two automobile electric charging stations are located on the airport and are available to airport users.

### 1.8.4 Utilities

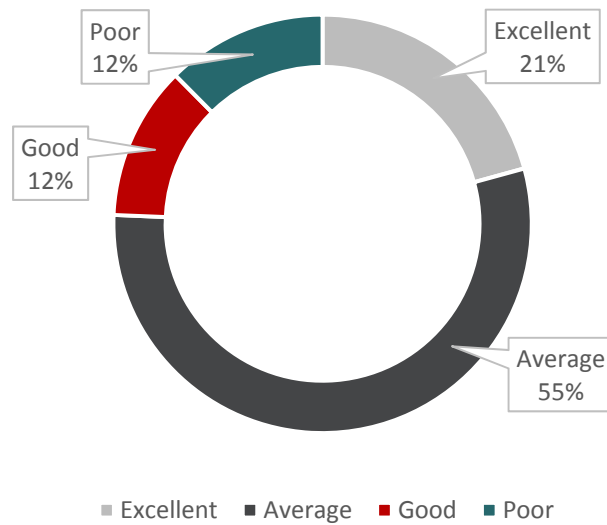
Water, gas, and electric are all available at the Airport. Sanitary water disposal is handled by the City of Columbus, Division of Water. American Electric Power supplies electricity, and gas is supplied by Columbia Gas.

### 1.8.5 Airport Buildings

Facility condition assessments were conducted in November of 2017. These assessments examined multiple building components including architectural, structural, mechanical, electrical, plumbing, and safety components of each of

the structures. Conditions were reported through physical descriptions. Each facility was then given a condition assessment score. Most airport buildings are in excellent, good, or average conditions with only a few being in poor condition, as shown in **Exhibit 1.8.5-1**.

**Exhibit 1.8.5-1: Building Assessments - Summary**



Source: BCI, 2018

More specifically, the T-hangars and conventional hangars are in mostly good or average condition; the airport storage buildings are also mostly good or average condition; and the airport maintenance facilities are in mostly poor condition. The individual assessments are contained in **Appendix C**, while individual assessments for buildings not owned by the airport are contained in **Appendix D**. A summary of those assessments follows with facility location maps shown in **Exhibits 1.8.5-1** and **1.8.5.2**.

**0143 The Paint House**

The GSF of this building is 1,100 sf.  
The building was constructed in 1948.  
This building is in **poor condition**.

**0164 Snow Removal and Equipment Storage Building**

The GSF of this building is 15,700 sf.  
The building was constructed in 1991  
This building is in **average condition**.

**0195 Airport Storage**

The GSF of this building is 12,800 sf.  
The building was constructed in 1960.  
This building is in **poor condition**.

**0196 T-Hangar A West**

The GSF of this building is 10,600 sf.  
The building was constructed in 1960.  
This building is in **average condition**.

**0197 T-Hangar A East**

The GSF of this building is 12,800 sf.  
The building was constructed in 1960.  
This building is in **poor condition**.

**0198 Hangar 4**

The GSF of this building is 29,500 sf.  
The building was constructed in 1963.  
This building is in **average condition**.

**0235 Flight Laboratory (Hangars)**

The GSF of this building is 13,500 sf.  
The building was constructed in 1958.  
This building is in **average condition**.

**0236 Hangars 1, 2, and 3**

The GSF of this building is 29,400 sf.  
The building was constructed in 1943.  
This building is in **average condition**.

**0237 Airport Maintenance**

The GSF of this building is 6,200 sf.  
The building was constructed in 1948.  
This building is in **poor condition**.

**0238 Hangar 6**

The GSF of this building is 5,700 sf.  
The building was constructed in 1948.  
This building is in **poor condition**.

**0239 Hangar 7**

The GSF of this building is 9,900 sf.  
The building was constructed in 1976.  
This building is in **average condition**.

**0256 Hangar 8**

The GSF of this building is 19,000 sf.  
The building was constructed in 1980.  
This building was in **average condition**.

**0900 Hangar 9**

The GSF of this building is 33,100 sf.  
The building was constructed in 1986.  
This building is in **average condition**.

**0901 T-Hangar C**

The GSF of this building is 17,200 sf.  
The building was constructed in 1986.  
This building is in **average condition**.

**0904 T-Hangar D**

The GSF of this building is 17,200 sf.  
The building was constructed in 1986.  
This building is in **average condition**.

**0978 Med Flight Hangar**

The GSF of this building is 42,200 sf.  
The building was constructed in 1972.  
This building is in **good condition**.

**0993 Airport Blue Barn**

The GSF of this building is 900 sf.  
The building was constructed in 1965.  
This building is in **poor condition**.

**1000 Airport North Storage Hangar**

The GSF of this building is 4,000 sf.  
The building was constructed in 1976.  
This building is in **poor condition**.

**1001 Airport North Storage Shed**

The GSF of this building is 600 sf.  
The building was constructed in 1980.  
This building is in **poor condition**.

**1014 T-Hangar B**

The GSF of this building is 17,200 sf.  
The building was constructed in 2017.  
This building is in **excellent condition**.

**1015 T-Hangar E**

The GSF of this building is 19,600 sf.  
The building was constructed in 2017.  
This building is in **excellent condition**.

**1016 T-Hangar F**

The GSF of this building is 19,600 sf.  
The building was constructed in 2017.  
This building is in **excellent condition**.

**1017 T-Hangar G**

The GSF of this building is 17,200 sf.  
The building was constructed in 2017.  
This building is in **excellent condition**.

**# New Airport Terminal Building**

The GSF of this building is 29,000 sf.  
The building was constructed in 2018.  
This building is in **excellent condition**

**0021 Airport Administration Building**

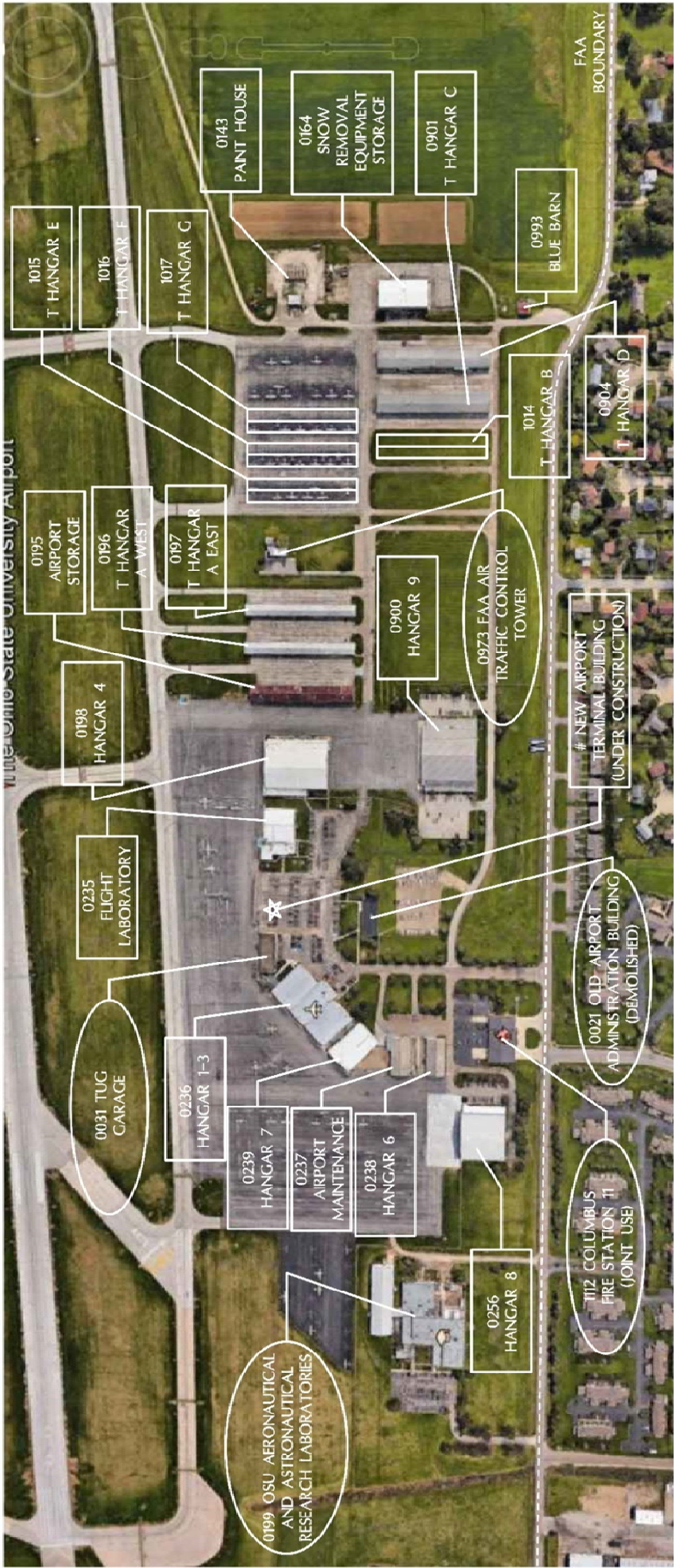
was **not reviewed** - in the process of being replaced and **will be demolished**

**0285 Fire Crash and Rescue Building** has been **demolished**

**0031 Airport** has been **demolished**

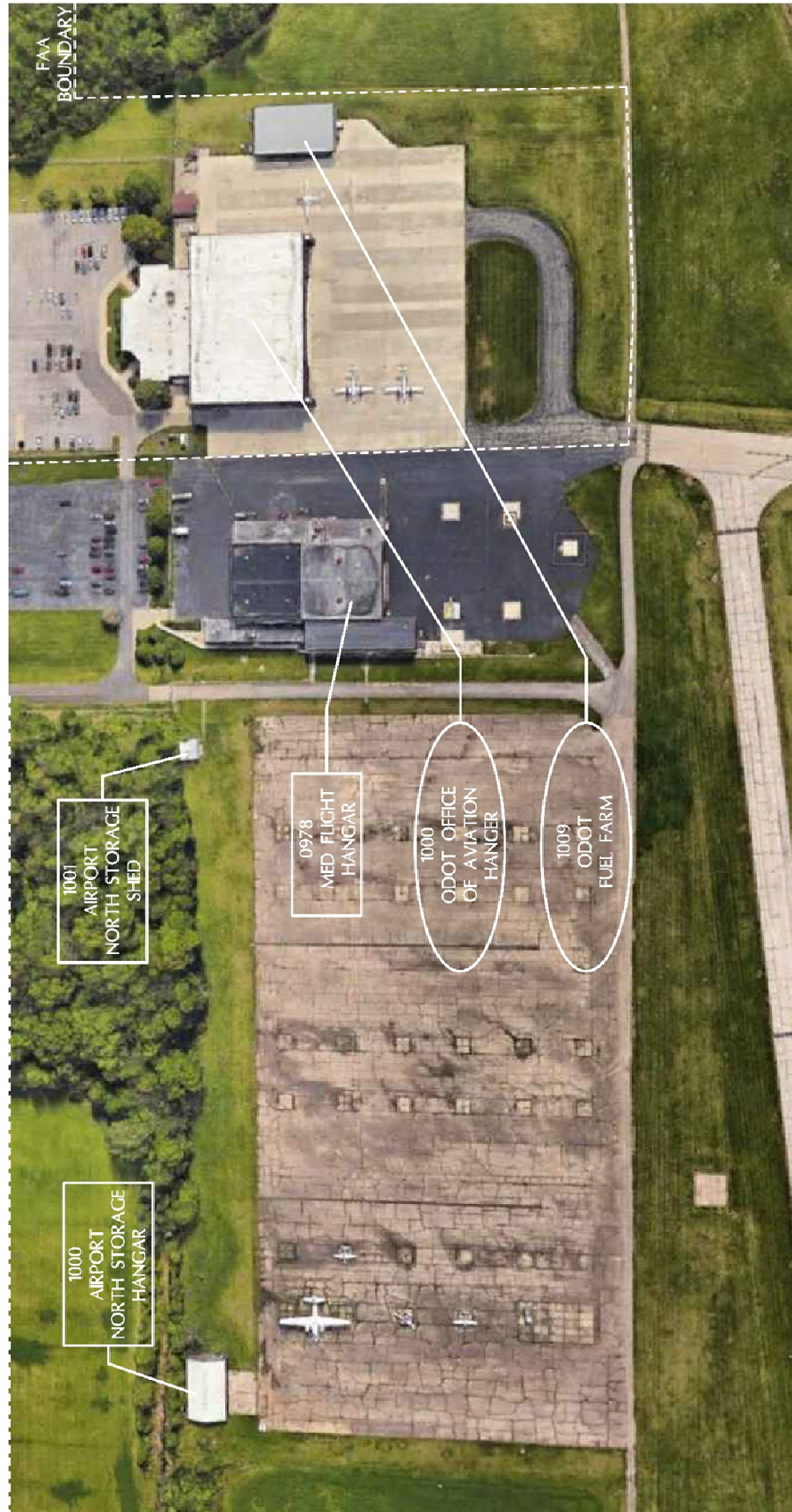
**0031 Airport Operations** has been **demolished**

Exhibits 1.8.5-1





Exhibits 1.8.5.2





### 1.8.6 Fueling

The university operates the fuel facilities at the Airport. In total, the university has the storage capacity for 24,000 gallons of AvGas, 48,000 gallons of Jet A fuel, and 4,000 gallons of MoGas (both unleaded and diesel). The eight fuel tanks are above ground, with six distributing fuel to aircraft via a mobile refueler and two tanks distributing fuel directly to vehicles and equipment. MoGas is not available for resale.

### 1.8.7 Airport Snow Removal and Aircraft De-icing

To support its three million square feet of pavement, the airport has ten pieces of heavy equipment for snow removal operations, which are outlined in **Exhibit 1.8.7-1**.

**Exhibit 1.8.7-1: Snow Removal Equipment**

Qty	Year	Equipment
1	2011	Pick-Up Spreader Western Products
1	2001	Runway Sweeper Oshkosh HB-2723
1	1987	Runway Sweeper Idaho Norland 16 ft.
1	1987	Snow Blower Oshkosh H-2318
2	1986	Plow Trucks Oshkosh P-2526-SP
1	1986	Loader Case W30
1	1985	Tractor Case 1594
1	1985	Spreader Wilmar 600 Series
1	2017	Backhoe John Deere 310SL



Source: Ohio State Assistant Airport Director; KOSU Facebook Page, accessed February 2018

The university provides both Type I and Type IV aircraft de-icing services at the airport via a mobile de-icing truck (see **Exhibit 1.8.7-1**). Type I fluid is available to *remove* snow, frost, and ice on aircraft, while Type IV is available to *prevent* snow, frost, or ice build-up.

**Exhibit 1.8.7-1**



KOSU Facebook Page, accessed February 2018

### 1.8.8 Aircraft Rescue and Firefighting

The Airport's firefighting facility is centrally located on the airfield for easy access to all facilities. The Airport receives fire protection from the Columbus Fire Department. The fire station designated for Airport protection is Station #11, located at the main entrance to the Airport, off West Case Road. (See **Exhibit 1.8.8-1.**) The equipment available includes one crash truck, which holds 500 gallons of water, 60 gallons of foam, and 500 pounds of dry chemicals. Station 11 also has several other pieces of equipment in the unlikely event there is an emergency on the airport.

**Exhibit 1.8.8-1**



Source: Google Earth, Street View, accessed February 2018

### 1.8.9 Airport Security

As a general aviation facility, there are few security requirements for airports such as KOSU. Instead of strict requirements, the Transportation Security Administration released Information Publication A-001: "Security Guidelines for General Aviation Airports" in May 2004. This document provides owners, operators, sponsors, and other entities charged with oversight of general aviation airports a set of federally endorsed security enhancements and a method for determining when and where these enhancements may be appropriate. Although not required, the university has implemented security measures at the airport in excess of those considered reasonable for the facility.

In addition to the Federal guidelines, the State of Ohio through Ohio Revised Code, Chapter 4563 does require that each airport develop and maintain a comprehensive security plan. The security plan for The Ohio State University Airport is on file in the Airport Administrative Office. This document is considered safety-sensitive and is not available for public viewing.

## 1.9 Adjacent Development and Zoning

The Airport is located in northwestern Franklin County and lies within the City of Columbus limits. Land to the north of the Airport is mixed commercial and residential, and land to the east, south, and west is predominantly residential. Currently, university owned property is used for aviation and agricultural purposes. The City of Columbus has an Airport Environs Overlay District for the airport area, which prohibits new housing development in the >70 DNL noise contour<sup>12</sup>. (See **Exhibit 1.9-1.**)

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<sup>12</sup> Columbus, Ohio Code of Ordinances, Title 33 Zoning Code, Chapter 3348 – Airport Environs Overlay

### **1.9.1 Zoning Requirements**

Most of the airport property is zoned as an M-2 Manufacturing district with H-35 height regulation by the City of Columbus. M-2 special provisions are as follows:

- Any building or structure of any type, shall be located not less than 50 feet from the street line, nor shall it be closer to W. Case Road than the existing Hangar 9 located immediately to the west of this area.
- Any building or structure of any type shall not exceed the building height established at the time the property is zoned M-2.
- That portion of the lot or parcel abutting the street line and to a depth of 50 feet and extending from one side property line to the other, except for the areas used for driveways and sidewalks, shall be planted with suitable ground cover and shrubbery and maintained in a neat and orderly fashion.
- Off-street parking and loading facilities, together with suitable accesses and maneuvering areas, shall be provided in accordance with the provisions of Chapter 3312, provided, however, that no portion of the required 50-foot buffer shall be used for either off-street parking or loading spaces.
- Open or unenclosed storage of materials and equipment, except for automobiles or trucks used in the business or industry or by the employees thereof, shall be permitted only in the rear yard.

Additionally, performance standards apply to the generation of odor, dust, smoke, gas, and noise in order to mitigate the impact to neighboring properties.

Other jurisdictions in proximity to the Airport include Perry Township, with land immediately adjacent to and southeast of the Airport, as well as north of the Airport across State Route 161; the City of Worthington within one mile to the east and northeast of the Airport; and the City of Dublin within two miles to the west and northwest of the Airport. These two cities lie beneath the outer approach/departure surfaces of the primary and/or parallel runway(s).

Currently, there are no local laws, ordinances, or policies that could affect airport operations and/or growth at The Ohio State University Airport.



### Exhibit 1.9-1: Zoning Map



## 1.10 Airport Financials

Ohio State Airport functions as part of an overall aviation program (University Airport Org.) for The Ohio State University that includes the Airport Management Fund, Fixed Based Operations Fund, and Flight Education Division. The day-to-day activities of the airport are financed through cash flows generated by airport operations. Line Services, particularly fuel sales, is the key revenue source for the Airport. Aircraft storage is also a large revenue source. A detailed financial report for the University Airport Org. is shown in **Exhibit 1.10-1**.

**Exhibit 1.10-1: University Airport Fiscal Year 2017 Profit and Loss Statement**

### Department P & L Statement - FED June 2017

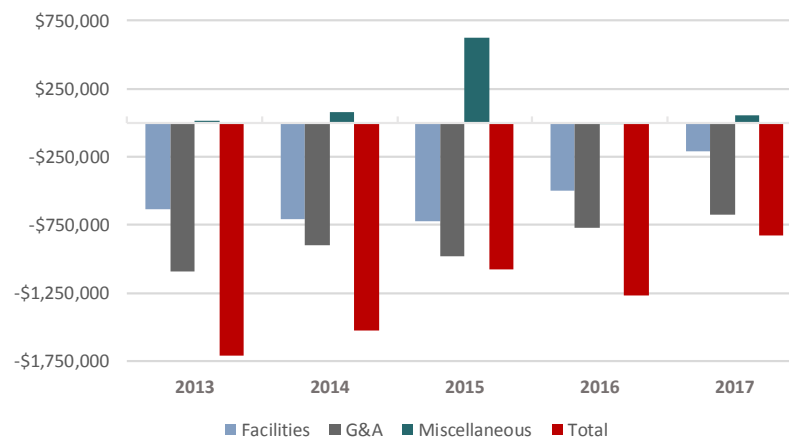
Airport - June 2017													
	July	August	September	October	November	December	January	February	March	April	May	June	FYTD
Business Revenue	\$553,285	\$617,791	\$617,360	\$579,251	\$650,130	\$562,415	\$464,855	\$534,792	\$493,867	\$640,148	\$682,917	\$856,188	\$7,252,999.75
Internal Revenue	\$54,133	\$48,162	\$155,267	\$260,374	\$51,764	\$83,968	\$185,253	\$45,381	\$41,698	\$202,024	\$63,800	\$78,397	\$1,270,221.80
Total Revenue	\$607,418	\$665,953	\$772,627	\$839,625	\$701,894	\$646,383	\$650,109	\$577,329	\$535,566	\$842,172	\$746,718	\$934,585	\$8,520,378.55
Payroll	\$111,703	\$179,601	\$247,240	\$196,943	\$192,462	\$188,395	\$188,339	\$185,058	\$249,906	\$198,728	\$137,757	\$303,872	\$2,380,004.09
- Overtime/Comp Earned	\$5,861	\$3,031	\$8,360	\$3,224	\$4,865	\$6,083	\$9,652	\$3,929	\$5,122	\$4,568	\$8,334	\$7,475	\$70,505.40
Base Payroll	\$105,842	\$176,571	\$238,880	\$193,718	\$187,597	\$182,312	\$178,688	\$181,128	\$244,784	\$194,159	\$129,423	\$296,397	\$2,309,498.69
Benefits	\$41,305	\$67,136	\$86,226	\$74,363	\$66,848	\$65,428	\$63,797	\$63,550	\$85,756	\$68,081	\$45,864	\$109,521	\$837,875.47
Supplies/Service	\$288,272	\$356,483	\$318,290	\$346,713	\$351,659	\$452,081	\$293,271	\$352,063	\$344,260	\$417,630	\$422,873	\$461,638	\$4,405,234.38
- Cost of Sales	\$194,609	\$238,704	\$210,530	\$212,782	\$236,185	\$282,847	\$166,650	\$186,179	\$180,631	\$260,674	\$285,102	\$282,858	\$2,737,751.45
Base Supplies/Service	\$93,663	\$117,779	\$107,760	\$133,931	\$115,474	\$169,234	\$126,621	\$165,885	\$163,630	\$156,956	\$137,771	\$178,780	\$1,667,482.93
Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,350	\$220	\$21,569.98
University Overhead	\$26,975	\$29,573	\$27,621	\$26,031	\$30,971	\$28,463	\$23,075	-\$208,247	\$12,837	\$14,962	\$16,615	\$24,495	\$53,369.73
Internal Expense	\$58,397	\$57,954	\$59,085	\$261,753	\$58,466	\$50,603	\$218,316	\$48,011	\$43,115	\$211,335	\$232,592	\$125,886	\$1,425,511.47
Total Expense	\$526,653	\$690,747	\$738,462	\$905,803	\$700,406	\$784,971	\$786,798	\$440,435	\$735,873	\$910,735	\$877,052	\$965,624	\$9,063,558.41
Airport Profit/Loss (+/-)	\$80,766	-\$24,794	\$34,165	-\$66,178	\$1,488	-\$138,588	-\$136,689	\$136,895	-\$200,308	-\$68,563	-\$130,335	-\$31,039	-\$543,179.86
Running Total	\$80,766	\$55,971	\$90,137	\$23,959	\$25,447	-\$113,141	-\$249,830	-\$112,935	-\$313,243	-\$381,806	-\$512,140	-\$543,180	-\$543,179.86

Source: Ohio State Airport Director

The Airport Management Fund of the University Airport Org. includes administration, facilities, and miscellaneous. The profit and loss for this segment alone for the last five years are shown in **Exhibit 1.10-2**.

**Exhibit 1.10-2: Airport Management Fund – 5-year Profit and Loss**

Airport Management Fund Profit and Loss	2013	2014	2015	2016	2017
Facilities	-\$632,266	-\$709,785	-\$722,841	-\$494,658	-\$209,019
G&A	-\$1,093,156	-\$897,721	-\$977,060	-\$769,158	-\$672,983
Miscellaneous	\$16,732	\$78,281	\$624,335	-\$6,522	\$51,763
<b>Total</b>	<b>-\$1,706,677</b>	<b>-\$1,527,211</b>	<b>-\$1,073,551</b>	<b>-\$1,268,322</b>	<b>-\$828,221</b>



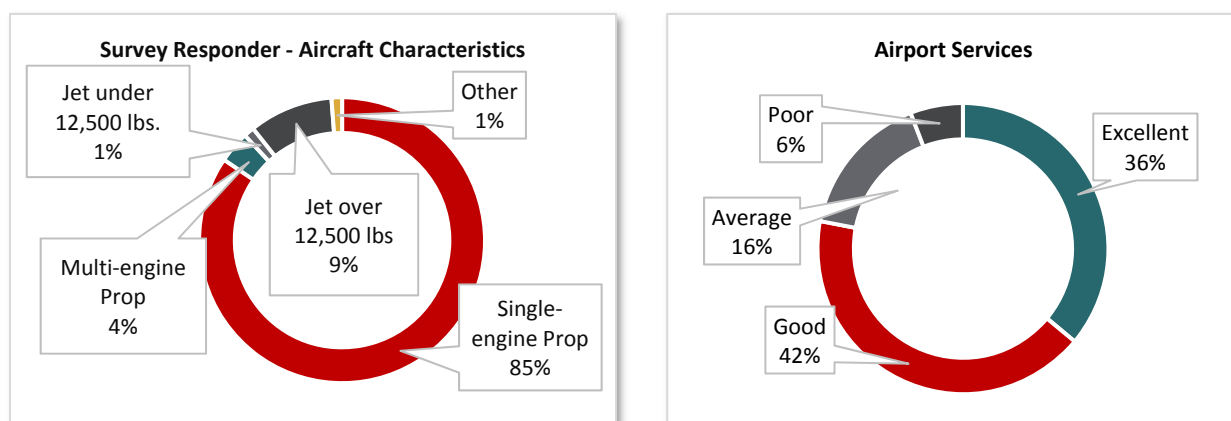
Source: Ohio State Airport Director

Airport capital projects are financed through a variety of funding options. The FAA funds the Airport's safety and capacity enhancement projects, such as runway expansions, pavement rehabilitation, and wildlife fencing, at 90 percent of the total cost. All other capital projects are financed through bond issuance, private investments, and the Airport.

## 1.10 Stakeholder Survey

As a part of inventorying the existing conditions of the airport, a survey was also conducted to determine stakeholder views of the facility. This survey did not represent a statistically accurate assessment of the facility, but was more of a qualitative look by a spectrum of interested parties. There was a total of 219 responders to the survey, and only 10 identified as students. Of those that were aircraft operators, 85% flew single engine aircraft. In general, for airport services (e.g., fueling, flight training, FBO, maintenance, etc.) most services were rated as good or excellent. (See **Exhibit 1.10-1.**)

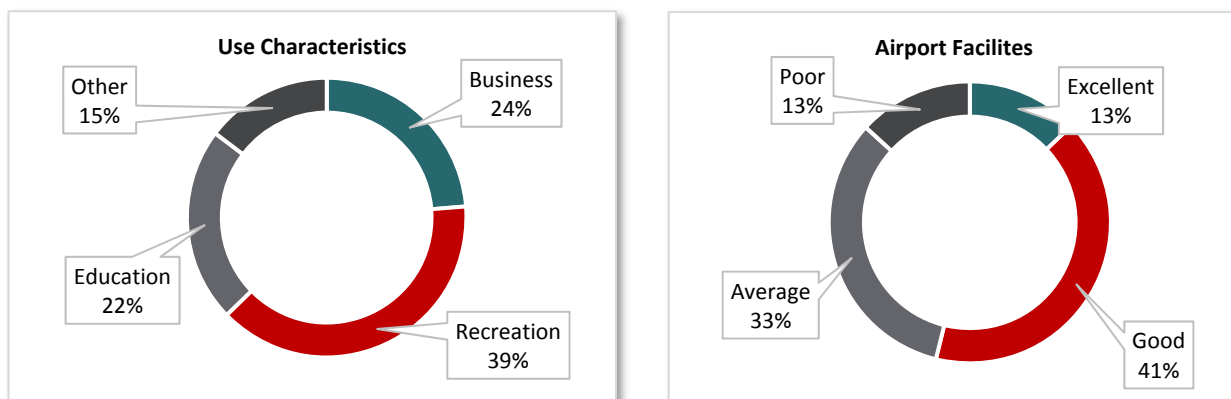
**Exhibit 1.10-1: Characteristics and Services**



Source: Ohio State Airport Staff, Woolpert, Inc., 2018

Together, business and education made up the predominate use of the airport, followed by recreation. Of the airport facilities themselves (e.g., aprons, hangars, parking), just over 50% were rated as good or excellent, with a third being rated at average and 13% as poor. (See **Exhibit 1.10-2.**) Most of the poor ratings involved the terminal, which is currently being updated. The full results of the survey can be found in **Appendix E.**

**Exhibit 1.10-2: Use and Facilities**



Source: Ohio State Airport Staff, Woolpert, Inc., 2018.