# CHAPTER ONE

# INVENTORY OF EXISTING FACILITIES

Federal Aviation Administration (FAA) advisory circulars were used to develop this Master Plan Update for the Ohio State University Airport. FAA Advisory Circular 150/5070-6A, "Airport Master Plans," outlines the necessary steps in the development of an airport master plan. The initial step, Inventory, is the collection of data pertinent to the Airport and the area it serves. The objectives of the inventory task for this Airport Master Plan Update are to provide background information necessary for subsequent phases of analysis.

An inventory incorporates a broad spectrum of information including data on landside and airside facilities, surrounding land uses, weather conditions, area airspace, historical activity levels, and socioeconomic factors. The data collected as part of the inventory effort sets the groundwork for the remainder of the Master Plan Update.

The information summarized in this chapter was obtained through on-site visits, discussions with Airport staff, and review of various planning documents that have addressed the Ohio State University Airport. The inventory is described in the following sections:

- Airport Role
- Airport Location and Access
- Comparison of Close Proximity Airports
- Airport History
- Previous Planning Studies
- Climate and Meteorological Data
- Area Socioeconomic Data
- Existing Airport Facilities
- Airport Rescue and Firefighting Equipment
- Historical Airport Activity
- Area Airspace
- Area Land Use Patterns and Zoning
- Aviation Education and Research

## 1.1 AIRPORT ROLE

The Ohio State University Airport is one of Ohio's busiest general aviation facilities. The Airport provides educational opportunities to the University's students and aircraft services to many of central Ohio's pilots and local businesses. This public-use airport is owned, operated, and maintained by The Ohio State University's Department of Aerospace Engineering and Aviation. The Airport currently serves as a general aviation reliever airport for Port Columbus International Airport. Reliever airports serve the function of relieving congestion at a commercial service airport by serving general aviation demand. The Airport's FAA Part 139 Certification allows for the use of the facility for commercial operations and assures the aviation

community that the facility will meet the same standards in terms of operations and maintenance as the nation's largest airports.

Primary users of the facility include local businesses and residents, as well as transient users. The Airport is home to the OSU Department of Aerospace Engineering and Aviation Gas Turbine Laboratory, facilities operated by the OSU College of Agriculture, the Ohio Department of Transportation's Office of Aviation, 14 corporate flight departments, and three flying clubs.

## 1.2 AIRPORT LOCATION AND ACCESS

The Airport, 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 campus and 10 miles northwest of Columbus' Central Business District. Franklin County lies in the central part of Ohio. The Airport is a 792-acre area included in the 1,377-acre parcel of University property referred to as the Don Scott Field Area.

Ground access to the area is provided primarily via Interstates 71, 70, and 270. State Routes 23 and 315 lie directly east of the Airport while State Route 33 is located to the west of the Airport. The primary roadway to the Airport is West Case Road, which lies south of the Airport. Sawmill Road borders the Airport to the west, while Dublin-Granville Road (State Route 161) and Godown Road border the Airport to the north and east, respectively. Of these roadways, both I-270 and SR 315 have undergone major improvements, including capacity enhancements and interchange improvements. In fact, the Single-Point Urban Interchange (SPUI) at I-270 and Sawmill Road is designed to handle more heavy-volume traffic than conventional interchanges. Other area roadway improvements over the past 10 years include the widening of both Sawmill and Bethel Roads to four lanes with turn lanes. A traffic light has recently been installed at the intersection of West Case and Godown Roads. State Route 161, adjacent to the Airport, also remains a two-lane facility without turn lanes. The lack of additional capacity and proper traffic controls are major inhibitors to development along the north side of the Airport.

## 1.3 COMPARISON OF CLOSE PROXIMITY AIRPORTS

A comparative analysis of the seven public airports within a 20-mile radius of the Ohio State University Airport provides an understanding of the OSU Airport's competitive environment, and the potential level of service that can be offered at the Airport. The focus airports include one air carrier facility and one reliever airport, as follows:

- Columbus Bolton Field
- Columbus Southwest Airport
- Union County Airport
- Madison County Airport
- Darby Dan
- Port Columbus International Airport
- Rickenbacker Airport
- Delaware Municipal Airport

**Exhibit 1-1** depicts the location of the Ohio State University Airport, as well as airports in close proximity.

Nearby airports used primarily by single-engine and small multi-engine aircraft include Delaware Municipal, Union County, and Columbus Southwest. Corporate use of these airports is limited due to short runway lengths and the absence of the desired NAVAIDs. Bolton Field has similar amenities as the Ohio State University Airport, but its full potential has yet to be recognized. Other airports such as Rickenbacker and Madison County are too far away to serve local users on a regular basis. The primary competition to the OSU Airport is Port Columbus International, with such FBOs as Lane Aviation and Millionaire. As commercial air traffic increases at Port Columbus, OSU will continue to be the primary alternative facility.

The OSU Airport is the most suited to serve the general aviation demands of Columbus' rapidly growing northern beltway, based on location, existing facilities, and future potential. The Airport's proximity to I-270 provides a direct link to the numerous corporate/industrial parks within that corridor. Although congestion on the surface streets is a problem during the peak commuting periods, a number of improvement projects are currently underway or planned for the roadways surrounding the Airport, including a pending widening of S.R. 161 on the north side of the Airport.

In addition to the locational benefits discussed above, the OSU Airport also has the facilities to offer any potential users. These attributes include a runway in excess of 5,000 feet, which is the general requirement for regular corporate purposes imposed by the insurance industry; an instrument approach to serve business activities in all types of weather; and surrounding land uses compatible with business uses and future growth potential. Its landside facilities can be expanded to house any new users.

## 1.4 AIRPORT HISTORY

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 the construction of an airport in northwestern Franklin County.

Prior to 1959, the Airport was operated as a privately owned 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.

**Exhibit 1-1**

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 OSU Airport Development Advisory Committee" was issued June 1984. The mission of the Airport was to manage and operate an airport facility and associated aeronautical services serving the University, local community, state, and nation, as well as serve as the site for aviation instructional services provided to citizens of the community.

Since the mid 1980s, numerous major airport projects have been completed, including the following:

- Construction of the Worthington Industries Hangar (Hangar 8)
- Construction of a large corporate hangar (Hangar 9) and two T-hangars (Hangars C and D)
- Construction of the Columbus Division of Fire Station #11 at the Airport entrance
- Purchase of property along Sawmill Road and the removal of the buildings, in the approach to Runway 9R
- Purchase of property along Case Road in the approach to Runway 32
- The extension of Runway 5
- The construction and expansion of the fuel facility
- Installation of the Automated Surface Observing System (ASOS)
- Construction of the Airport Maintenance and Snow Removal facility

The Airport is a unique facility in that it is a University-owned and operated airport. All of the Airport's aeronautical services such as fueling, aircraft storage, and maintenance are provided exclusively through the University's Department of Aviation, which is responsible for managing and operating the Airport.

## 1.5 PREVIOUS PLANNING STUDIES

This study serves as an update to the 1990 Master Plan Update, which was completed by Aviation Planning Associates, Inc. in association with Moody/Nolan Limited and Grindle and Bender in August 1990. According to the 1990 study, general aviation demand at the Airport was expected to grow 2 to 3 percent per year during the planning period of 1987-2007. The Airport would continue to experience an increased demand for based aircraft facilities, steady growth in total operations, and growth in the percentage of instrument approaches. The based aircraft and operational fleet mixes would continue to be dominated by single-engine aircraft, reflecting the Airport's role as the area's main flight instruction facility. The Airport was expected to follow the national trend toward greater use of business-class aircraft, however, with moderate growth projected in the use of business jets and twin-engine aircraft.

Three airfield alternatives were developed. These alternatives documented that the long-range development of a 6,000-foot primary corporate runway and a 5,000-foot back-up parallel runway recommended under Alternative "C" to satisfy demand was technically, economically, and

environmentally feasible. The Capital Improvement Projects were also analyzed and included in the Study. Significant projects in the analysis of project development costs included:

- A 3,000-foot runway extension of Runway 9L/27R to accommodate longer stage lengths for some corporate jets and improve airfield operational and maintenance safety
- A 170-foot extension of Runway 5 for taxiway safety
- A 560-foot extension of Runway 32 for taxiway safety
- Acquisition of the Ohio National Guard Army Aviation Support Facility for a University Flight Education and Research Center

Currently, only the extension to Runway 5 has been completed. The FAA is considering beginning the extension of Runway 9L/27R within the next few years and the Environmental Assessment for the project is currently underway. The property for the runway protection zone (RPZ) for Runway 32 was purchased in 1999, but that runway will close upon the extension of Runway 9L/27R. The Airport has acquired the National Guard Helicopter Ramp and expects to pursue purchase of the National Guard Hangar in the future. Other upcoming projects include the design and construction of two new clear span hangars, two rows of t-hangars, and a new airport maintenance storage facility.

A Federal Aviation Regulation (FAR) Part 150 Study was conducted concurrent with the 1990 Master Plan Update. The Part 150 Study focused on compatibility between airport (aircraft) noise and land uses in the areas surrounding the Airport. The overall goal of the study was to develop a balanced and cost-effective program to minimize and/or mitigate the Airport's noise impact on the local communities. Findings and recommendations of the Noise Compatibility Study were prepared as two separate documents:

- Volume I: Noise Exposure Maps
- Volume II: Noise Compatibility Program

In Volume I, existing (1987) and future (1992) baseline aircraft noise contours were presented. Volume II included the recommended noise exposure map and specific recommendations for reducing aircraft noise levels and improving the land use compatibility around the Airport. This report recommended the modification of arrival and departure flight tracks, the installation of sound insulation and/or easement purchase for residential homes to mitigate noise impacts, as warranted.

An update to the Airport's noise study is currently underway as part of the on-going Environmental Analysis for the Runway 9L/27R extension, and is incorporated by reference herein.

## 1.6 CLIMATE AND METEOROLOGICAL DATA

Weather conditions are an important consideration in the planning and development of an airport. For example, temperature is a critical factor in determining runway length. Wind speed

and direction determine runway orientation. Another factor in determining the need for navigational aids and lighting is the percentage of time cloud cover limits area visibility.

The climate at the Ohio State University Airport is typical of the Midwest. The Greater Columbus area has a mild, temperate climate with four distinct seasons. The area is subject to the effects of air masses from central and northern Canada during the winter, and from tropical Gulf air masses during the summer and to a lesser extent in the fall and winter. Also, wind speeds during late evening and early morning hours from June through September are frequently calm and very low. Annual precipitation averages approximately 37 inches per year. Temperatures typically range from 19 to 84 degrees. The mean maximum temperature in July, the hottest month, is 84 degrees Fahrenheit. Winters usually average 27 degrees Fahrenheit, with a recorded average snowfall of 28 inches during the winter months. There is a recorded annual average of 15 days in excess of 90 degrees and an annual average of 122 days below 32 degrees.

Wind and weather conditions influence airport operations by affecting runway use and the percentage of time aircraft operate under certain operational rules.

The preferred runway operating configurations are grouped into two categories: Visual Flight Rule (VFR) and Instrumental Flight Rule (IFR). VFR provisions occur when the weather conditions permit the aircraft to maintain safe operations by visible means. IFR provisions occur when the visibility or cloud ceiling falls below minimum VFR requirements. VFR minimums are 1,000 feet above airport elevation and three nautical miles visibility. When periods of IFR occur at The Ohio State University Airport, aircraft operating patterns become the responsibility of the control tower. According to the National Oceanic and Atmospheric Administration, VFR weather occurs approximately 86.3 percent of the time, while IFR conditions occur 13.7 percent of the time.

Runway wind coverage, the percent of time a runway can be used without exceeding allowable crosswind velocity, is calculated based on the wind direction and type of aircraft using the runway. When wind conditions on a single runway exceed these crosswind and tailwind components, traffic must be directed to a crosswind runway. The primary runway, Runway 9/27R, provides 95.83 percent wind coverage (15-mph crosswind component). The 99.4 percent wind coverage (12-mph crosswind component) for the overall four-runway system indicates that utility aircraft can operate safely regardless of wind direction.

## 1.7 AREA SOCIOECONOMIC DATA

Socioeconomic characteristics of the community are an important consideration in the planning and development of an airport. The availability of the Airport to current and future users is important when one realizes that airports, even general aviation facilities, are a great generator of economic development. In fact, economic impact studies being conducted across the country indicate that major employers rank the proximity to a general aviation airport among the top 10 locational factors when selecting a site. This proximity shows the strong reliance businesses have on aviation today, where upwards of 90 percent use air express services, 85 percent use

commercial passenger service at least once per year, 33 percent ship by air cargo, and 25 percent charter aircraft.

The Ohio State University Airport is located in one of Ohio's fastest-growing regions – the Columbus Metropolitan Area. The Franklin County area has experienced a steady increase in population, households, and employment. According to the U.S. Bureau of the Census, the County's population in 1999 was 1,027,821, an increase of approximately 66,384 people since 1990. Employment in the County has also risen with the growth of large companies including the Ohio State University; Banc One Corporation; The Limited, Inc.; and Nationwide Insurance Enterprise. County employment has increased by more than 16 percent from 498,255 in 1990 to 578,439 in 1999. In 1998, the County had an all-time low unemployment rate of approximately 2 percent. **Table 1-1** depicts the historical growth in population and employment for Franklin County.

**TABLE 1-1**

**FRANKLIN COUNTY POPULATION AND EMPLOYMENT**

| Year | Population | Employment |
|---|---|---|
| 1970 | 833,249 | n/a |
| 1980 | 869,132 | n/a |
| 1990 | 961,437 | 498,255 |
| 1999 | 1,027,821 | 578,439 |

Source: U.S. Bureau of the Census

The Columbus Metropolitan Statistical Area (MSA) encompasses six counties including Franklin, Delaware, Madison, Licking, Fairfield, and Pickaway. Population in the MSA experienced an 11 percent increase from 1,345,400 in 1990 to 1,489,487 in 1999. Employment has experienced a 15 percent growth rate from 700,500 in 1990 to 808,000 in 1999. **Table 1-2** depicts the historical growth in population and employment for the Columbus MSA.

**TABLE 1-2**

**COLUMBUS METROPOLITAN STATISTICAL AREA (MSA)**
**POPULATION AND EMPLOYMENT**

| Year | Population | Employment |
|---|---|---|
| 1970 | 916,228 | 415,200 |
| 1980 | 1,093,316 | 523,400 |
| 1990 | 1,345,400 | 700,500 |
| 1999 | 1,489,487 | 808,000 |

Source: U.S. Bureau of the Census

In terms of land use, the northwest portion of Columbus is predominately urban in nature, surrounded by rural uses in neighboring counties. The local market consists primarily of the

rapidly growing northern beltway of Columbus, and the numerous corporate/industrial parks within that corridor. As development continues north toward Delaware and west toward Marysville, the Airport's market area will undoubtedly expand with this growth.

Nationally, the Ohio State University Airport serves as a vital link between the central Ohio business community and principal destinations, including Atlanta, Chicago, Cleveland, Detroit, Indianapolis, Minneapolis, and Pittsburgh. A short two-hour business jet flight provides access to 60 percent of the U.S. population, 60 percent of the nation's purchasing power, and nearly 60 percent of the nation's manufacturing establishments. One local corporation recently described the facility as "a tremendous asset to the north side."

The Airport currently serves, or is home to, numerous Fortune 500 companies, as well as local businesses and/or associated firms. These include Cardinal Health, Dow Chemical, Tyson Foods, Ashland Oil, Wendy's International/Tim Hortons, LabCorp, Scott's Lawn Care, Quick Crete Concrete, and Worthington Industries.

The surrounding communities have also recognized the Airport as an important factor in ensuring their own economic vitality. In a report titled *Vision 2010*, based on a Worthington Council Retreat held May 18-19, 2001, the city leaders identified the opportunity to "Capitalize on OSU Airport as a resource" as one of eight critical elements for the city to achieve a viable business and tax base. The Economic Development Director for the City of Dublin recently described the Airport an amenity for the city's corporate residents.

Based on a 2002 study, the Ohio State University Airport is estimated to contribute over $66.8 million annually to the community's economy through direct and indirect means. Direct impacts include the payroll of airport personnel, revenues and taxes received through the sale of aviation fuel and pilot supplies, and revenues generated by the leasing of airport property. Indirect impacts are generated when airport users visit local restaurants, stay at local hotels, and rent cars for off-airport travel (*Economic Impact of The Ohio State University Airport*, M. Tahara, Summer 2002).

## 1.8 EXISTING AIRPORT FACILITIES

Inventory of existing airport facilities was accomplished through airport visits, discussions with airport staff, and a review of airport plans and related studies. The Ohio State University Airport covers approximately 800 acres. The Airport's boundaries are depicted in **Exhibit 1-2**. For planning purposes, existing Airport facilities are divided into two categories: airside and landside facilities. Airside facilities, including runways, taxiways, and ramp areas, are facilities related to aircraft operations. Landside facilities consist of all facilities pertaining to aircraft storage,

FBOs, vehicular traffic flow, and auto parking. The Airport's existing airside and landside facilities are discussed below:

# Exhibit 1-2
# To be provided

### 1.8.1 Airside Facilities

Airside facilities include runways, taxiways, aircraft parking apron, airfield lighting, and navigational aids (NAVAIDs).

The location and orientation of runways are fundamental to the safety, efficiency, and economics of an airport. Factors such as critical aircraft, meteorological conditions, the surrounding environment and land use, topography, and the expected volume of aircraft activity can all affect the location, orientation, length, and strength of runways.

The Airport's airside facilities include four asphalt runways: two parallel 9/27 runways, and two intersecting crosswind runways (5/23 and 14/32). Runway 9R/27L currently serves as the primary runway, measuring 5,002 feet in length and 100 feet in width. Runway end 27L is equipped with runway end identifier lights (REILs). Four box visual approach slope indicators (VASIs) are located at both ends of the runway. VASIs consist of a combination of light units, which are usually located on the left runway edge, as viewed by the pilot on approach. These units project red and white light beams, which enable a pilot to determine whether their approach to the runway is being made above, on, or below the designated glide slope. The runway is lighted with high intensity runway lighting (HIRL). Runway end 9R is equipped with an instrument landing system (ILS), medium intensity approach lighting system with runway alignment indicator lights (MALSR), distance measuring equipment (DME), and a localizer. The gross strength of the runway pavement is 45,000 pounds for aircraft with single wheel main gear configurations and 60,000 pounds for aircraft with dual wheel main gear configurations.

Runway 9L/27R is 2,994 feet long and 100 feet wide. This runway is lighted with medium intensity runway lighting (MIRL). Both runway ends are equipped with two box VASIs. The strength of the Runway 9L/27R pavement is 25,200 pounds for aircraft with single wheel main gear configurations.

The two crosswind runways, Runway 5/23 and Runway 14/32, are 3,555 feet long and 100 feet wide and 3,438 feet long and 100 feet wide, respectively. Both runways are equipped with MIRLs. **Table 1-3** summarizes the relevant characteristics of each runway.

Taxiways provide a link between the independent airport elements, such as runways and aircraft parking areas, and require careful planning for optimum airport safety and efficiency. A taxiway system should provide free movement to and from the runways, parking areas, and aircraft service areas. The Airport's taxiway system consists of parallel taxiways for each runway. All of the taxiways have a width of 50 feet.

The Airport also contains an air traffic control tower (ATCT), which supports arriving and departing aircraft as well as those aircraft operating in proximity to the Ohio State University Airport. The tower is in operation from 7 a.m. until 11 p.m. daily.

The Airport rotating beacon is used to help the pilots locate the Airport at night. The 18-inch diameter beacon emits two rotating beams of light (one white and one green).

**TABLE 1-3**

**RUNWAY DATA**

| | Runways | | | |
|---|---|---|---|---|
| | **9R/27L** | **9L/27R** | **5/23** | **14/32** |
| Length (ft.) | 5,002 | 2,994 | 3,555 | 3,438 |
| Width (ft.) | 100 | 100 | 100 | 100 |
| Surface Material | Asphalt | Asphalt | Asphalt | Asphalt |
| Surface Treatment | Grooved | None | None | None |
| Load Bearing Capacity by Gear Type | | | | |
| SWL (lbs.) | 45,000 | 25,200 | 21,000 | 32,500 |
| DWL (lbs.) | 60,000 | None | 32,000 | 42,000 |
| DTW (lbs.) | None | None | None | 61,000 |
| Approach Aids | | | | |
| ILS | 9R | No | No | No |
| LOC | 9R | No | No | No |
| NDB | Both | No | No | No |
| MALSR | 9R | No | No | No |
| VASI-4 | Both | No | No | No |
| VASI-2 | No | Both | No | No |
| Lighting | HIRL | MIRL | MIRL | MIRL |
| Marking | Precision | Basic | Basic | Basic |

Source: Airport Facility Directory (October-November 2000)

Surface wind direction indicators are available to pilots at the Airport, including four lighted wind cones. An Automated Surface Observing System (ASOS) is available to report altimeter setting, wind data and temperature, dewpoint and density altitude, visibility and cloud/ceiling data, and precipitation type and intensity. It may be enhanced in the future to also show the occurrence of freezing rain.

Navigational Radio Aids at the Airport include an Instrumental Landing System (ILS) and Distance Measuring Equipment (DME) at the end of Runway 9R. This precision approach allows properly equipped aircraft to land when ceilings are as low as 200 feet and the visual range is half a mile. The Ohio State University Airport has two non-precision approaches available to the primary runway, Runway 9R/27L. A non-precision approach provides electronic horizontal information to the pilot regarding the final approach course and the distance to the touchdown point. A non-precision approach differs from a precision approach in that vertical information pertaining to the glideslope data is not transmitted to the cockpit. Non-directional beacons

(NDBs) are located at the runway ends of both 9R and 27L. The NDB approach provides properly equipped aircraft and certified pilots the ability to land when the ceiling is as low as 900 feet and the visual range is one mile. Both main runway ends have Global Positioning Satellite (GPS) approaches, which provide landing assistance for ceilings as low as 600 feet and a visual range of one mile. **Exhibits 1-3** through **1-8** show the approaches available at the Airport in October 2000.

### 1.8.2 Landside Facilities

Landside facilities at the Airport include all areas not considered part of the runway, taxiway, and NAVAIDs system. Existing landside facilities include terminal, administration, and maintenance buildings; Fixed Base Operators (FBOs); aircraft storage facilities; fuel storage; and vehicular access. The Airport is unique in the fact that the Ohio State University's Department of Aviation manages and operates the Airport by providing FBO aeronautical services with its own personnel and resources. This eliminates need for commercial operators who typically provide such services.

The general aviation terminal, administration building, and maintenance building are located on the south side of the Airport. The total area of the general aviation terminal is 1,929 square feet, the administration building is 4,687 square feet; and the maintenance building is 6,186 square feet.

Aircraft storage areas fall into two general categories, space for aircraft stored in hangars and space for aircraft, which are tied down on the apron.

There are four T-hangar buildings, each measuring 17,056 square feet, and seven conventional hangars. Three asphalt aprons exist at the Airport to accommodate the long- and short-term parking needs of both based and itinerant aircraft. The east and west aprons are available for both based and itinerant aircraft. The east apron is approximately 21,583 square feet in size; the west apron is 35,300 square feet in size, and the itinerant apron is 2,000 square feet in size. In addition, tie-down storage is also available. There are approximately 190 paved tie-downs available on the existing apron areas.

The University's Department of Aviation operates the aviation 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 aboveground, with six distributing fuel via a mobile refueler and two tanks distributing fuel directly to vehicles and equipment.

Automobile parking is located directly off of West Case Road and adjacent to the general aviation terminal and administrative building. Visitor parking comprises 196 slots for the general aviation patrons with an additional four slots designated for handicap parking. Thrifty Car Rental, the sole rental car operation at the Airport, occupies 15 slots. Employee parking occupies 49 slots, 20 of which are Faculty A members and 29 of which are Staff B members.

Exhibit 1-3

Exhibit 1-4

Exhibit 1-5

Exhibit 1-6

Exhibit 1-7

Exhibit 1-8

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.

## AIRPORT RESCUE AND FIREFIGHTING EQUIPMENT

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 of West Case Road. The equipment available includes one crash truck, which holds 500 gallons of water, 75 gallons of foam, and 487 pounds of dry chemicals.

## 1.9 HISTORICAL AIRPORT ACTIVITY

**Table 1-4** shows the number of aircraft operations conducted at the Airport between 1990 and 2000. An aircraft operation is defined as either the landing or takeoff of an aircraft. Therefore, each flight includes at least two operations – one takeoff and one landing.

Local operations, as defined by the FAA, are aircraft that operate in the local traffic pattern or within sight of an airport, depart for or arrive from flight in local practice areas located within a 20-mile radius of an airport, or execute simulated instrument approaches in low passes at an airport. The percent of local operations is a good indicator of the level of training activity. These training activities include touch-and-goes, low passes, and practice instrument approaches. Prior to 1996, local general aviation operations occurred more frequently than itinerant general aviation operations, but since then, there has been a decrease in the number of local general aviation operations. For example, there were 65,883 local general aviation operations in 1990 and 59,173 local general aviation operations in 1999. Over the past ten years, a lower level of training activity has occurred at the Airport. Itinerant general aviation operations, which include all operations other than local operations, have increased from 61,599 in 1990 to 66,879 in 1999. The number of itinerant general aviation operations fluctuated greatly over this 10-year period, with a high of 70,322 in 1998 and a low of 56,095 in 1996. Air taxi operations increased significantly, from 275 in 1990 to 2,478 in 1999. Total operations fluctuated throughout the ten-year period, but fell from 140,757 in 1990 to 107,028 in 2000.

The number of based aircraft at an airport is used to determine the need for hangars, apron area, and other related facilities. Based aircraft generally include those owned by individuals, businesses, or organizations and that are stored at the Airport on a regular basis. Currently, there are 206 based aircraft at the airport, as listed below:

- Single-Engine: 159
- Multi-Engine: 24
- Jet Aircraft: 18
- Helicopters: 5

**TABLE 1-4**

**HISTORICAL OPERATIONS AND BASED AIRCRAFT**

| | Aircraft Operations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Itinerant Operations | | | | Local Operations | | | | |
| Year | Air Taxi | General Aviation | Military | Total Itinerant | General Aviation | Military | Total Local | Total Operations | Based Aircraft |
| 1990 | 275 | 61,599 | 7,339 | 69,213 | 65,883 | 5,661 | 71,544 | 140,757 | 282 |
| 1991 | 612 | 64,430 | 1,153 | 66,195 | 73,661 | 449 | 74,110 | 140,305 | 209 |
| 1992 | 1,283 | 60,859 | 851 | 62,993 | 61,529 | 301 | 61,830 | 124,823 | 206 |
| 1993 | 1,194 | 62,934 | 1,067 | 65,195 | 70,039 | 628 | 70,667 | 135,862 | 206 |
| 1994 | 980 | 60,945 | 747 | 62,672 | 69,097 | 230 | 69,327 | 131,999 | 209 |
| 1995 | 1,271 | 65,913 | 500 | 67,684 | 66,479 | 174 | 66,653 | 134,337 | 221 |
| 1996 | 1,767 | 56,095 | 256 | 58,118 | 50,294 | 92 | 50,386 | 108,504 | 213 |
| 1997 | 2,159 | 57,664 | 372 | 60,195 | 49,002 | 88 | 49,090 | 109,285 | 213 |
| 1998 | 1,872 | 70,322 | 423 | 72,617 | 53,752 | 22 | 53,774 | 126,391 | 213 |
| 1999 | 2,478 | 66,879 | 356 | 69,713 | 59,173 | 0 | 59,173 | 128,886 | 206 |
| 2000 | 3,071 | 57,650 | 276 | 60,997 | 46,031 | 0 | 46,031 | 107,028 | 206 |

Source: APO Terminal Area Forecast Report

Table 1-4 also presents the historic based aircraft at the Airport from 1990 through 2000. The level of based aircraft has fluctuated over the past 10 years. This fluctuation can be attributed to changes in the regional and national economy, a decrease in on-airport military activity, and the season when the counts were conducted. The current number of based aircraft (206) also equals the estimate for 1992, 1993, and 1999. In 1990, based aircraft reached a high of 282.

## 1.10 AREA AIRSPACE

Approaching or departing aircraft at an airport are subject to a system of controls designed to safely separate one aircraft from another while in flight. Aircraft that fly in the United States are subject to varying degrees of control, depending on the specific airspace and meteorological conditions in which they operate. This system of Air Traffic Control (ATC) is the responsibility of the Federal Aviation Administration (FAA), which has the statutory duty to establish, operate, and maintain air traffic control facilities and procedures.

There are two basic types of aircraft flight regimes recognized by the air traffic control system: those operating under visual flight rules (VFR) which depend primarily on the "see and be seen" principle for separation, and those operating under instrument flight rules (IFR) which depend on radar detection for separation by ground controllers. IFR flights are controlled from takeoff to touchdown, while VFR flights are controlled only in the vicinity of towered airports.

United States airspace is structured into controlled and uncontrolled areas. These areas are organized in a classification system that follows the international standards. The controlled areas

have designations from Class A to Class E, indicating various levels and areas of coverage and control exercised by the FAA. Class G is the uncontrolled airspace. This airspace classification affects the requirements for radio communication, minimum pilot ratings, and VFR/IFR operations. Class F airspace is not used in the United States.

In the airspace hierarchy, Class D is used to designate airports with moderate amounts of traffic such as the Ohio State University Airport. The dimension for this airspace is a five-mile radius extending from ground level to 2,500 feet above ground level. Unlike the Class B and Class C airspace, Class D airspace has a cylindrical shape. When the ATCT closes, it reverts to Class G airspace. Class G is the uncontrolled airspace with no radar coverage.

The FAA controls the Class A through Class E airspaces through a hierarchy of facilities and coordinated areas of responsibility. An Air Route Traffic Control Center (ARTCC) provides air traffic control services to aircraft operating during the enroute phase of IFR flights within the airspace assigned to that facility. A Terminal Radar Approach Control facility (TRACON) provides separation and sequencing of arriving and departing aircraft during the transition from enroute to local flight phases for airports within its area of responsibility. An ATCT provides separation and sequencing on and in the vicinity of a specific airport. The airspace system for the Ohio State University Airport is depicted in **Exhibit 1-9**.

## 1.11 AREA LAND USE PATTERNS AND ZONING

The existing land use characteristics in the area surrounding the Airport have been inventoried to allow a preliminary assessment of land use/airport compatibility. Existing land use plays a major role in the development of the Airport and the capability to expand the airfield and landside facilities. As a result of the aircraft noise that may be produced at airports, sensitive land uses such as residences, schools, and hospitals are often considered incompatible with airports. The FAA considers land uses such as industrial, commercial, retail, agricultural, and undeveloped land compatible with airports.

As previously mentioned, 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.

In September 1991, the City of Columbus adopted “The Northwest Plan” for managing the future growth and development of Northwest Columbus. Since the adoption of “The Northwest Plan”, the Airport Administration has worked closely with the Northwest Civic Association to develop the lands surrounding the Airport in a manner that minimizes hazards to air navigation and safety impacts on the community. One example is the development immediately to the west of the Airport across Sawmill Road. The roadway pattern for this development matched that of the extended runway centerline, such that the road could be used as a landing site in the event of an emergency.

Exhibit 1-9

Other jurisdictions in close 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).

In July 1998, the University developed a plan to outline the future development of the non-airport lands surrounding the University Airport. Although still in draft form, the Don Scott Area Plan calls for open space/agricultural activities to continue to the west community, community activities such as light commercial and retail, research and development, and public facilities to the north, and open space/recreational to the east of the Airport. Once the Airport and the College of Food, Agriculture, and Environmental Sciences complete current planning programs related to their own use of the Don Scott Field lands, the Don Scott Area Plan is expected to be revisited, leading to final recommendations for the development of the entire area.

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

## 1.12 AVIATION EDUCATION AND RESEARCH

The Ohio State University operates an FAA Part 141 Flight Education facility at the Ohio State University Airport. The University's 18 based aircraft, including Cessna 152's, 172's, three 172RGs, Beechcraft Dutchess, and a Bavarian Grob, are used solely for University flight training. The University also operates a number of flight simulators, including a T-40 jet, an AST Hawk, an AST 300, an AST201, and Personal Computer Based Flight Simulators (PCADTs).

College credit courses in aviation have been offered since 1945. Since then, more than 26,000 students have enrolled in OSU's aviation classroom and flight laboratory courses. There are approximately 400 students currently enrolled in the University's Aviation Program. Aviation at Ohio State consists of three bachelor degree programs including a Bachelors of Science in Aviation; Bachelors of Art in Aviation; and Bachelors of Art in Aviation Management, as well as an option for pursuing a master's degree in Aviation Human Factors. An expected increase in enrollment at upwards of 500 students is expected to create additional demand for office, classroom, simulation, and dispatch facilities.

The Airport's role in fulfilling the academic mission of the University does not end with flight training, but rather, the facility serves as a learning laboratory for the University's faculty and students. A recent survey of the College of Engineering Faculty revealed that at least 20 different research projects, from such disciplines as Electrical Engineering, Mechanical Engineering, Aeronautical Engineering, and Aviation are currently being conducted, involving aviation related issues. Other University Departments are currently or are soon-to-be using the Airport for research initiatives including Electrical Engineering's testing of the latest navigational radar, Industrial Engineering's General Aviation Security and Hangar Scheduling, and Civil Engineering's environmental analyses.

Aviation-related student organizations include the Ohio State University Chapter of Alpha Eta Rho, the coed International Aviation Fraternity and the Ohio State University Flight Team, which is a student organization that competes under, and is sanctioned by, the National Intercollegiate Flying Association.

The Ohio State University also serves the non-University community's aviation education needs through the Flight Training Clinic (FTC). As a public service, FTC provides flight and ground instruction to those not interested in enrolling in the University for college credit. A complete range of pilot certification courses is available.

## 1.13 SUMMARY

The data provided in this chapter forms the basis for the Master Plan Update for the Ohio State University Airport. Subsequent elements will draw upon this information as required.