

# MASTER PLAN UPDATE

## Greene County - Lewis A. Jackson Regional Airport

### 2014



Prepared by:



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# Greene County – Lewis A. Jackson Regional Airport Master Plan Update

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Appendix A: Chapter 5: Environmental Overview Supporting Documents

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# Inventory

The Greene County - Lewis A. Jackson Regional Airport (I19) Master Plan Update has been undertaken to evaluate the airport's current and future capabilities and role, to project future aviation demand, and to plan for the timely development of new or expanded facilities that may be required to meet that demand over a 20-year planning period. Land side development, such as vehicle parking and buildings, is of particular importance to the Greene County Regional Airport Authority, owner of the airport. The master plan is intended to be a forward-looking document that identifies and then plans for future facility need well in advance of the actual need for the facilities. The ultimate goal of the master plan is to provide a systematic approach for the airport's overall maintenance, development, and operation. This document has been prepared in collaboration with the Greene County Regional Airport Authority, the Airport Manager, appropriate federal and state agencies, local officials, and interested airport users and stakeholders.

A primary objective of this Airport Master Plan is to produce a comprehensive planning guide for the long term development of a safe, efficient, and environmentally compatible aviation facility that meets the long term needs of Greene County, the airport users and tenants, and the surrounding airport service area. Generally, this is accomplished by identifying the airport's current and future facility and operational needs, followed by evaluating development alternatives that can best meet those needs. The Plan provides recommended improvements in accordance with specific Federal Aviation Administration (FAA) guidelines for the development of Airport Master Plans and facilities, while also considering anticipated changes in aviation activity trends at the local, regional, and national levels.

The study follows a structured planning process that starts with the collection of existing data; then develops aeronautical forecasts for the 20-year planning horizon; which results in identifying potential facility and operational deficiencies over that period. Alternatives are then generated for bridging those deficiencies that ultimately results in a phased plan for recommended development of the airport over the planning period. The phased plan typically looks at planning horizons of one to five years, six to 10 years, and 11 to 20 years, with the first

phase generally addressing existing facility deficiencies or non-compliance to airport design standards. The subsequent phases typically address the facilities and resources needed to accommodate predicted growth based on reasonable assumptions.

This chapter encompasses the first step in the airport master planning process as outlined in FAA Advisory Circular 150/5070-6B, *Airport Master Plans*. It involves collecting information about the airport itself and its environs. A complete inventory of current conditions is essential to the success of a master plan, since that information establishes the foundation, or starting point, for all subsequent evaluations.

The inventory of existing conditions for the Airport Master Plan Update includes the description of the following attributes of the airport:

- Information pertaining to airport ownership, management, and financial structure
- General airport setting, transportation access, the airport's relationship to the National Airspace System (NAS), and airport history
- Population, employment and socioeconomic information for the geographic area
- A review of historic and current airport activity, including the general types of aircraft using the airport
- Descriptions of facilities and services now provided at the airport, including a general description of airside, terminal, landside, and support facilities such as utilities and other infrastructure related amenities
- An overview of the area's airspace, operations management, and meteorological conditions
- An overview of airport's financial structure

The data collected for this portion of the study was gathered through field interviews, research, meetings and telephone conversations from a variety of sources including the Airport Manager, airport tenants and airport users. The information gathered for this portion of the Master Plan is current as of November 2012. Updated information was gathered throughout the development of the Master Plan and can be found in subsequent chapters.

## 1.1 Airport Background and History

### Airport Ownership and Management

Greene County - Lewis A. Jackson Regional Airport is owned by the Greene County Board of Commissioners, who appoint seven representatives to the Greene County Regional Airport Authority in staggered three-year terms. The Airport Authority is responsible for managing, maintaining, improving and operating the airport in a safe condition for the County. They receive no payment for their services.

The Airport Authority employs a full-time Airport Manager to conduct the day to day administrative business required at the airport, and to serve as Secretary on the Airport Authority. The Airport Manager is responsible for such things as review and recommendations on payment of invoices, review of financial reports, snow removal, grass mowing, inspection and routine maintenance of airport facilities, aviation fuel supply, managing leases with tenants, managing NOTAMs, implementing Airport Authority policies, and other similar activities. He arranges for snow removal, mowing, and maintenance contractors to provide services, as necessary. The Manager also attends the monthly Airport Authority meetings, provides advance meeting packages to Authority members, and prepares the minutes.

### Overview of Financial Structure

While some general aviation reliever and large general aviation airports do indeed have substantial revenue sources, most general aviation airports do not and often struggle to obtain matching funds for FAA and state grants to maintain their pavement and other key operational areas. The Greene County Regional Airport Authority has been able to provide the necessary funding to complete major improvement projects (such as relocating the adjacent North Valley Road in a tunnel, constructing a runway extension over the tunnel, and constructing a new full length parallel taxiway), as well as other required projects (like installing a new aircraft fueling system, constructing new T-hangars, resurfacing the vehicle parking area, and clearing trees). Several of the projects completed during the last few years required that all funding initially come from the Airport Authority, with FAA reimbursement obtained in following years because the FAA did not have sufficient funds available to pay for the work when it was required.

In order to be able to operate the airport and complete the required projects, the Airport Authority obtains revenue from a combination of sources, including operations on the airport, an annual operating grant from the County Commissioners, and grants from the FAA and state.

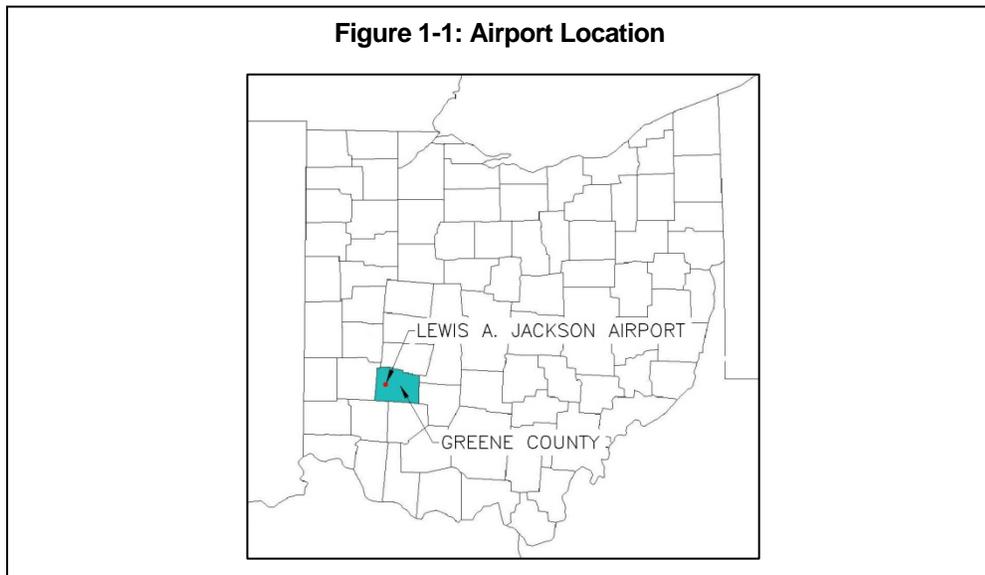
The County operates on a calendar year basis (January 1 through December 31). The Airport Authority submits a grant request each October to the County Commissioners, summarizing their anticipated needs - including matching funds required to obtain federal and state grants. The Commissioners review all of the grant requests and take action on them in January. The requested grants have typically been between \$100,000 and \$225,000. While the Airport Authority has requested \$116,849 for 2013, the Commissioners have not taken action on the request as of the start of this report. Once a grant is approved by the Commissioners, partial payments are made to the Airport Authority twice a year. While the amount of funding from the Commissioners has decreased in recent years because of the poor economy, the major improvement projects depicted on the current Airport Layout Plans have also been completed, so less local matching funds have been required.

Revenue obtained by the Airport Authority from the airport includes leases with the operators for hangars and building space, aircraft hangar rental and leases from the other airport tenants, tie-down rental, and fuel sales. The Airport Authority currently collects around \$450,027 per year in such revenue. The expenses last year for fuel were \$257,791.

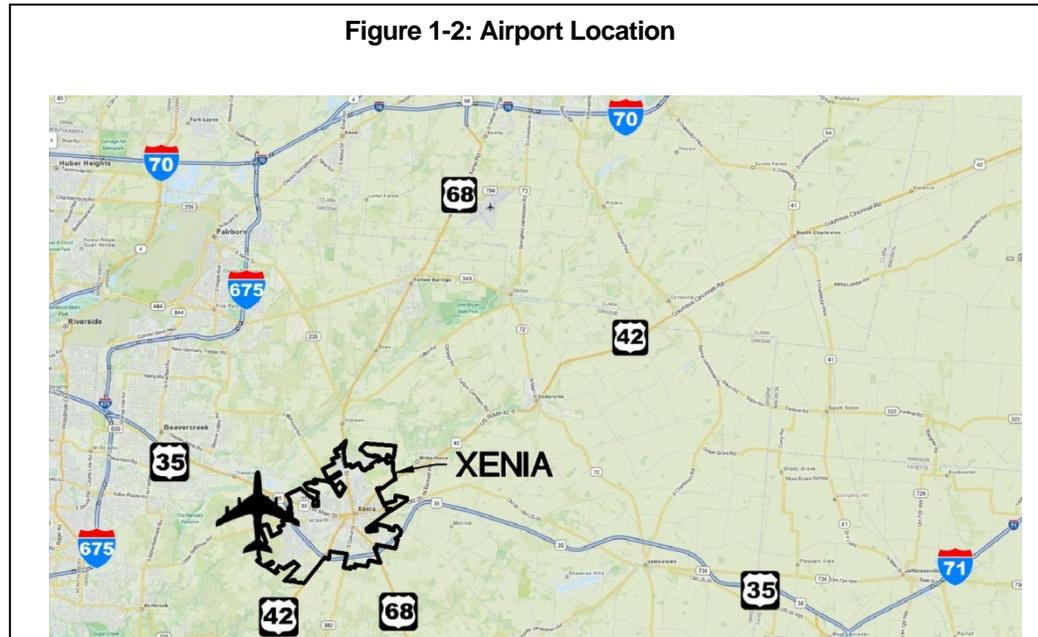
Finally, between 1996 and 2013 the Airport Authority received 14 grants from the FAA totaling \$7,151,325, and four grants from the state totaling \$286,614.

### Airport Location and Access

The Greene County - Lewis A. Jackson Regional Airport encompasses approximately 164 acres of land in the southwestern part of the State of Ohio, in Greene County (see **Figure 1-1**).



The airport is located approximately 15 miles southeast of Dayton and three miles west of the City of Xenia, just south of U.S. Route 35. Access to the Airport from U.S. Route 35 is provided via North Valley Road, located west of the Airport, and the airport access road (Dumford Road). U.S. Route 35 provides access to Interstate 670 approximately eight miles northwest of the intersection with North Valley Road, and to Interstate 71 approximately 28 miles southeast of the intersection with North Valley Road. **Figure 1-2** shows the location of the airport with respect to the existing roadway system.



The 1983 North American Datum geographic coordinates of the airport are Latitude 39° 41' 27.7" N and Longitude 83° 59' 31.16" W. The airport elevation is 949 feet above mean sea level (MSL).

### Airport's Relationship with the Federal and State Airport System

The federal government has played a major role in the development of airports since the inception of aviation. Dating back to the Federal Airport Act of 1946, grants-in-aid programs have assisted many communities in maintaining and improving their airports and making each facility an integral part of the nation's air transportation system. These federal assistance programs have continually been approved by the U.S. Congress and implemented by the FAA. However, prior to 2000, the number of FAA grants for work at general aviation airports was limited. Passage of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR 21) in 2000 provided annual FAA Non-primary Entitlement Funds for general aviation airports for the first time in an amount up to \$150,000. However, the airports receiving funding had to have an approved Airport Layout Plan, or had to prepare one as part of the first non-primary grant, and they had to

be included in the National Plan of Integrated Airport Systems (NPIAS). In addition to the Non-primary Entitlement Fund, the FAA may also provide funds from the State Apportionment Fund and/or the national Discretionary Fund to larger projects that are considered important.

The FAA was delegated the responsibility of preparing the national plan for airports, which they periodically update. The Secretary of Transportation reports the findings of the plan to the U.S. Congress. The NPIAS includes a plan for the development of the nearly 3,700 public-use airports in the country that are considered important to the national air transportation network. Greene County - Lewis A. Jackson Regional Airport is included in the NPIAS, making it eligible to receive federal funding.

Greene County - Lewis A. Jackson Regional Airport is classified in the NPIAS as a general aviation airport. The classification of the airport helps the FAA determine the service level for the airport, represents a funding category for the distribution of federal aid, and provides a general overview of the airport's role in the national airport system. The NPIAS also projects the anticipated classification of an airport based on the level of service it intends to provide the community at the end of a five-year planning period. The anticipated NPIAS classification is expected to remain general aviation for this airport.

In addition to federal funds, Greene County - Lewis A. Jackson Regional Airport is included in the Ohio Airport System Plan and is eligible to receive funding from the Ohio Department of Transportation Office of Aviation. Unfortunately, ODOT has a limited amount of funds for airport grants (normally less than \$1 million each year). This requires that they use the funding primarily to help remove obstructions and keep runway pavements in good condition.

## Airport History

Efforts to establish a regional airport in Greene County date back more than 50 years, to 1961. Around this time, Mr. C. Andrew Dumford, a county employee working in the Auditor's Office, envisioned a new airport for the general public within the Greene County area. He shared this vision with elected officials and other interested parties. In 1964, the Xenia Area Chamber of Commerce appointed a sub-committee of 10 members from Greene and Montgomery counties to perform a one-year study regarding the feasibility of a new airport within Greene County.

On July 31, 1965, the Greene County Commissioners passed a resolution declaring the necessity to establish a County Airport Authority Board. The board was known as the "Greene County Airport Authority Board," and consisted of six members, selected based on their qualifications. As part of this resolution, it was decided that the Board of Greene County Commissioners would make all appointments to the Greene County Airport Authority Board. A month later, a

meeting was held with the Greene County Commissioners, representatives from Xenia, and the Chamber of Commerce. The purpose of the meeting was to discuss possible candidates for the Greene County Airport Authority Board. Individuals were discussed based on their ability and willingness to serve.

As a result of this meeting, Mr. Dumford and Mr. Richard A. Johnson (an executive with Systems Research Laboratories) were selected to nominate members for possible appointment to the Greene County Airport Authority Board. Based on their recommendations, the County Commissioners appointed Mr. Dumford, Dr. Lewis A. Jackson (a long time builder and pilot, as well as an educator), Mr. Richard Anderegg (an engineer and manager of Southwestern Portland Cement Company), Mr. Philip Benson (Vice President of Xenia National Bank finances), Mr. Ervin J. Nutter (an engineer and President of Systems Research Laboratories, Inc.), and Mr. Johnson to the Greene County Airport Authority Board. This Board served for approximately one year, working to try to obtain funding for design and construction of a new airport.

On October 17, 1966, the Commissioners disbanded the Airport Authority Board so that they could pass a new resolution establishing the Greene County Regional Airport Authority to develop, manage, and maintain an airport in Greene County pursuant to Section 308.03 of the Ohio Revised Code. The early Greene County Regional Airport Authority recognized that an airport in their County would not only attract and provide services for existing and future businesses and industries, but would in itself be a viable business. In addition, it would also provide the Greene County area with emergency transportation, and services for those who fly for recreation.

In March of 1967, the original land for the Greene County Regional Airport was acquired by the Airport Authority. Two years later, the Greene County Regional Airport Authority received their first grant from the Ohio Division of Aviation to construct a 3,947 foot long Runway 7-25, three runway exits, a full parallel taxiway, and pavement edge lighting. The Airport Authority also borrowed \$150,000 to construct an airport terminal and hangar. Additional land was also acquired for access, safety, and future development at the airport. The Greene County Regional Airport was dedicated on October 6, 1968 by Governor James Rhodes. However, the Airport Authority did not stop their pursuit to continue to improve the airport.

In 1973, general obligation bonds worth \$90,000 were sold to provide money to construct 20 new T-hangars. In 1981, a long-term lease was signed by a company (Commander-Aero, Inc.) to provide fixed base operator (FBO) services. By September 1982, the field storage capacity for aircraft increased to 105 spaces, and the actual number of based aircraft increased to 89.

In 1983, the first FAA grant was received for acquisition of land interests in the primary surface and the Runway Protection Zone (RPZ) for Runway 7, obstruction removal, and lighting.

The Airport Authority has continued to improve the airport on a regular basis. The following is a list of some of the key improvements:

- In 1994, the main terminal building was expanded to provide more space for the FBO, additional rows of T-hangars were constructed, and the Airport Authority received a grant for the development of the current Airport Master Plan.
- In 1997, a new above ground aircraft fueling system was installed, which included 10,000 gallon storage for both jet fuel and avgas, dispensers, and a leak detection/monitoring system.
- In 1997, an Automated Weather Observation System (AWOS) was installed at the airport to provide pilots, and other citizens, current weather conditions at the airport. This equipment includes a certified altimeter that permits lower minima for pilots making approaches to the airport.
- In 2002, North Valley and Dumford Roads were relocated to provide room for an extension of Runway 7. As part of this project, a reinforced concrete tunnel was constructed to contain a portion of the North Valley Road relocation.
- In 2003, Runway 7 was extended by 831 feet and Runway 25 was shortened by 278 feet to provide a standard runway safety area at that end. The total usable runway length became 4,500 feet.
- In 2006 and 2007, the parallel taxiway was extended to the new end of Runway 7 and lighted.
- Between 2010 and 2012, the existing parallel taxiway, which was located too close to the runway centerline, was relocated to provide a full parallel taxiway that complies with FAA design standards.

In 1994, a "wall of fame" was dedicated in the Airport Administration building to honor and recognize those early Authority members who were responsible for the realization of the airport.

In honor of the contributions of Dr. Lewis Jackson, the Airport was renamed Greene County - Lewis A. Jackson Regional Airport. Dr. Jackson was not honored simply because he was an original member of the Greene County Regional Airport Authority (he continued to attend meetings until shortly before his

death on January 8, 1994), but rather because of his unique contributions to aviation and his service to all Americans during his time of military service. Dr. Lewis A. Jackson was one of America's early Afro-American pilots, starting his formal training in 1930. He was the first Director of Training for the United States Army 66th Flight Training Detachment at Tuskegee Institute in Alabama, training America's first Afro-American pilots. After the war, he continued to support new pilots as an FAA flight examiner, certifying over 400 pilots. Dr. Jackson was also an avid designer and developer of experimental aircraft; his goal was to make a "roadable automobile/airplane" that would be available to the common man.

In honor of the services of Mr. C. Andrew Dumford, the airport access road was renamed "Dumford Road". As mentioned earlier, the idea of developing a new airport in Greene County is often attributed to Mr. Dumford. He was involved in every aspect of dreaming, constructing, and developing the airport from the very earliest meetings in 1961. He contributed a tremendous amount of volunteer effort to the venture. Mr. Dumford served as the Greene County Regional Airport Authority Vice President, and later President between 1965 and 1993, giving tirelessly to the advancement of aviation in Greene County.

In honor of the services of Mr. R. A. Johnson, the airport administration building was named R. A. Johnson Hall. Mr. Johnson joined Mr. C. Andrew Dumford in his vision from the start. He was introduced to Mr. Dumford by Fritz Russ, the founder of Systems Research Laboratories, and together they formed the nucleus that grew into a much bigger number of supporters, workers, and participants. Mr. Johnson was the first president of the Greene County Regional Airport Authority.

Another important contributor to the Greene County-Lewis A. Jackson Regional Airport was Mr. Ervin J. Nutter, founder of the Elano Corporation. Mr. Nutter attended some of the early airport meetings and was a member of the first Authority. Many projects at the airport were completed thanks to Mr. Nutter and his company. Mr. Nutter was involved in many surveys, grading for drainage, providing earth moving equipment and operators for creating retention basins, constructing the base of the flag pole, the curbing in front of the terminal building, and many other services throughout the years. Mr. Ervin J. Nutter was honored as a founder and supporter of Greene County-Lewis A. Jackson Regional Airport.

## Population and Socioeconomic Data

In describing the Greene County-Lewis A. Jackson Regional Airport, it is useful to understand the surrounding region's population and employment trends.

The airport study area includes Greene County. Overall, Greene County has experienced modest growth over the past decade. This analysis examined the historical trends and future projections of the region's population, employment and earnings. Several reliable data sources were utilized. Historic and projected

future population data was obtained from the U.S. Census as well as the Ohio Development Services Agency. Employment and earnings data were compiled from Woods & Poole Economics, Inc. as well as the U.S. Bureaus of Labor Statistics and Economic Analysis.

**Table 1-1** summarizes population growth trends experienced between 1990 and 2012 for Greene County. Trends impacting cities and towns within the county may impact Greene County - Lewis A. Jackson Regional Airport. These trends are compared to population trends in Ohio and the United States.

Area	1990	2000	2012	22 Year CAGR	12 Year CAGR
Greene County	136,731	148,401	161,819	0.8%	0.7%
State of Ohio	10,847,115	11,363,543	11,624,589	0.3%	0.2%
United States	248,709,873	282,162,411	315,548,617	1.1%	0.9%

Source: 1990, 2000, and 2012 data from U.S. Census (2012 interpolated from 2011)  
CAGR = Compound Annual Growth Rate

Historical population growth shows that Greene County outpaced the growth rates of the state of Ohio, but was slightly outpaced by that of the United States, averaging 0.8 percent compound annual growth rate (CAGR) from 1990 to 2012. Growth within Ohio has been outpaced by that of the national average, with a CAGR of 0.3 percent from 1990 to 2012. The fact that the national growth rate has exceeded that of Ohio's is largely due to the economic strain found within the major cities of the state. Some of the hardest hit areas by the 2009 recession are located within Ohio. The disparity between these areas and the state's least affected cities is not as great as that found nationwide.

There are a number of demographic factors that impact, to varying degrees, the demand for general aviation in any particular region. In addition to population trends, regional economic trends also can significantly impact aviation demand. Regional economic trends are summarized in this analysis through an examination of employment and earnings data. **Table 1-2** presents historic employment and earnings data for the airport study area.

Data presented in Table 1-2 indicates that in Greene County, compound growth in employment averaged 1.0 percent annually from 2000 to 2012. This is greater than the state and national averages of -0.3 percent and 0.6 percent annually. When observing the 2010 to 2012 timeframe, Greene County experienced similar employment growth, while the state saw improved growth. National averages experienced employment growth of 0.6 percent and 0.2 percent in the respective time frames.

**Table 1-2: Regional Economic Trends**

Year	Greene County Employment	Greene County Personal Income (\$ thousands)
2000	87,914	4,345,735
2001	87,893	4,465,821
2002	89,553	4,631,386
2003	90,548	4,821,081
2004	93,465	4,926,718
2005	95,188	5,062,781
2006	98,235	5,363,960
2007	100,205	5,595,150
2008	98,290	5,768,372
2009	96,816	5,670,344
2010	97,058	5,843,997
2011	98,092	6,001,908
2012*	99,127	6,159,819
<b><u>Study Area CAGR</u></b>		
2000 - 2012	1.0%	2.9%
2010 - 2012	1.1%	2.8%
<b><u>Ohio CAGR</u></b>		
2000 - 2012	-0.3%	2.6%
2010 - 2012	0.9%	3.4%
<b><u>U.S. CAGR</u></b>		
2000 - 2012	0.6%	3.8%
2010 - 2012	0.2%	4.0%

Source: Employment - U.S. Bureau of Labor Statistics. Earnings – U.S. Bureau of Economic Analysis

\*Interpolated; 2012 Census employment and income data not available as of December 2012

Regional personal income can be one of the most important demographic factors influencing aviation demand, illustrating an underlying assumption that as personal income, and consequently discretionary income grows; regional residents have more to spend on all goods and services, including aviation-related goods and services. Personal income in Greene County is estimated to have grown at an average annual compound growth rate of 2.9 percent between 2000 and 2012. This is above the state average of 2.6 percent but below the national average 3.8 percent.

The regional economic growth experienced in Greene County could influence future aviation activity at the airport. Growth in personal income has slowed in recent years to 2.8 percent between 2010 and 2012, indicating reduced but still significant regional potential. Similar to population, Greene County's personal income growth was outpaced by the national average but outpaced the state

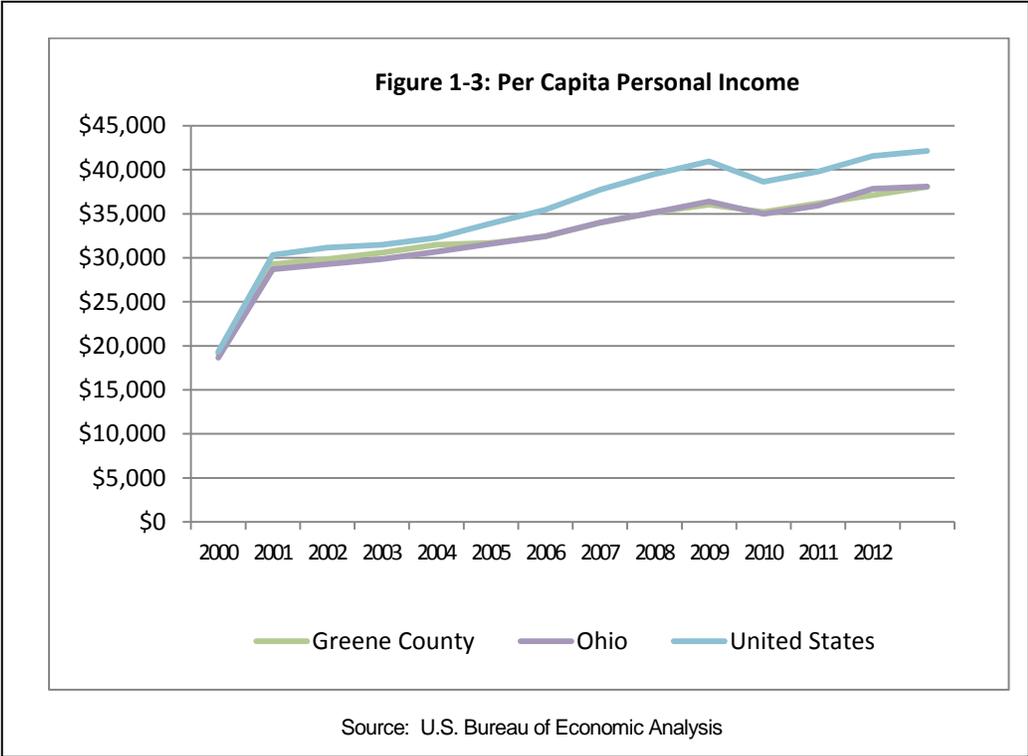
average between 2010 and 2012, with the nation at 3.8 percent and state 2.6 percent.

For the most part, personal income growth for Greene County, the state of Ohio, and the U.S. experienced similar growth trends. The U.S. growth rate was greater than those of Green County and Ohio; however each followed similar patterns. The 2008/2009 recession had a greater impact on the larger cities in Ohio, especially Cincinnati, Cleveland, and Columbus. This is due, in part, to large businesses in high growth industries within these cities observing reduced sales and reductions in workforce. Unfortunately, economic stability does not guarantee economic growth. Rather, economic growth occurs because of relatively high levels of concentration in fast growing industries. Localized economies in high growth industries typically fuel faster rates of new business formations and expansion that become the basis for more specialized and higher paying occupations. Based on the data provided above, Greene County's average per capita income is estimated to be about \$38,062 which is lower than the state and national averages (\$38,108 and \$42,145).

**Figure 1-3** shows that income per capita in Greene County was outpaced by both the state and national averages. However, the gap narrowed slightly during the 2008 - 2009 timeframe due to stronger recessionary forces apparent in the state and national averages. Greene County shows signs of building on recent growth momentum based on its economic stability and resiliency. However, Greene County continues to face the challenge of competition from other areas of the country and state as they seek to achieve some of the economies that are driving metro areas toward higher rates of growth in per capita income.

Projections of population, employment, and personal income developed for Greene County illustrate continued growth in these demographic indicators, albeit at levels slightly different than experienced between 2000 and 2012. **Table 1-3** summarizes the projections of population, employment and personal income for the region.

The projected growth rates of the population are lower than historical trends, reflecting a loss in regional demographic growth over the projection period. Employment levels are projected to increase by twice the historical growth rate of 1.0 percent annually. However, growth in personal income is projected to decrease by 0.2 percent annually from the historical rate of 2.9 percent. All three categories show positive compound annual growth rates, indicating the potential for growth in aviation activity.



**Table 1-3: Greene County Demographic Projections**

Year	Population	Employment	Personal Income (\$ thousands)
<b>Current</b>			
2012	161,819	99,127	6,159,819
<b>Projected</b>			
2017	162,512	106,586	6,989,549
2022	163,490	118,044	7,960,877
2032	165,516	146,010	10,570,933
CAGR (2012 – 2032)	0.1%	2.0%	2.7%

Source: Bureau of Labor & Statistics and Woods & Poole Economics, Inc. 2011

## 1.2 Historic and Current Aviation Activity

It is not difficult to count the number and types of aircraft that are stored (based) at the airport at any given time, though this can change from month to month. However, it is extremely difficult to determine the number of annual aircraft operations at an airport that does not have an air traffic control tower staffed 24/7 to keep records. Each aircraft owner at the airport can estimate the number of operations they make with their own aircraft, but there is not a good way to determine the number of operations by transient aircraft, especially those that occur at night, after normal working hours. Many airports keep a pilot log inside the administration building with the hope that transient pilots will sign the log book. Unfortunately, this does not always happen, and it cannot happen when the administration building is closed for the evening. As a result, annual aircraft operations are normally estimated by the Airport Manager based on information received from the operators and from his own observations.

The Ohio Department of Transportation (ODOT) Office of Aviation is currently responsible for conducting inspections of airports in Ohio for the FAA. They complete the FAA Form 5010 Airport Master Record and submit it to the FAA. This form includes the number and type of based aircraft on the airport and an approximate number of annual aircraft operations. However, there are no surveys of activity, only information provided by the Airport Manager.

### Historic Based Aircraft

The Airport Manager advised us that the Greene County - Lewis A. Jackson Regional Airport currently has 87 based general aviation aircraft, including 78 single-engine, seven multi-engine piston aircraft, and two helicopters. The majority of the single-engine aircraft are owned by individuals, and the rest are owned by businesses. The aircraft are primarily stored in existing hangars, although some are parked on the ramps and tied to anchors in the pavement to keep them from moving in high wind. **Table 1-4** shows the historic number of based aircraft at the airport.

It should be noted that based aircraft data from this source may not be entirely accurate since it is not collected at the same time each year, and because some inspections missed one or more years.

**Table 1-4: Historic Based Aircraft**

Year	Single Engine	Multi-Engine	Helicopter	Jet	Other	Total
1993	55	15	0	2	0	72
1995	55	11	0	3	0	69
1996	50	11	0	2	0	63
1998	50	3	0	2	0	55
1999	60	6	0	2	0	68
2006	60	10	0	0	0	70
2009	60	10	2	0	0	72
2012	60	10	2	0	0	72
2013	78	7	2	0	0	87
<b>Avg. Growth</b> 1993-2013	41.8%	-53.3%	NA%	-100.0%	0%	20.8%

Source: FAA 5010 Airport Master Records 1979-2012 and Airport Manager

### Historic Aircraft Operations

Historical accounting of annual aircraft operations (takeoffs and landings) provides a basis for forecasting future activity trends. Aircraft operations data can be broken down into four general categories: air carrier, air taxi/commuter, general aviation and military. Historic and existing operations in these categories are presented in **Table 1-5**. As there are no commercial service operations, the airport is a general aviation airport.

**Table 1-5: Historic and Existing Operations**

Year	GA-Itinerant	GA-Local	Air Carrier/ Air Taxi <sup>1</sup>	Military	Total Operations
1993	2,400	9,600	0	0	12,000
1995	2,400	9,600	0	0	12,000
1996	2,400	9,600	0	0	12,000
1998	2,400	9,600	0	0	12,000
1999	3,400	11,100	0	0	14,500
2006	2,400	35,000	0	0	37,400
2009	2,400	35,000	0	0	37,400
2012	2,400	35,000	0	0	37,400

Source: FAA Airport Records. <sup>1</sup>This category also represents scheduled/non-scheduled charter service

As stated above, aircraft operations activity data reported on the FAA 5010 Airport Master Record is generally estimated at the time of inspection and

sometimes carried forward from year to year, which is most likely the situation at Greene County - Lewis A. Jackson Regional Airport.

### Military and Cargo Activity

While the operations listed above for Greene County - Lewis A. Jackson Regional Airport do not include any military or cargo activity, most airports in Ohio have some operations in these categories. However, since none were reported on the Airport Master Record, we will assume that they are included in the other categories listed.

## 1.3 Airport Facilities

The facilities at Greene County - Lewis A. Jackson Regional Airport can be divided into two distinct classifications. The airside consists of the portions of the airport that accommodate the movement of aircraft, including runways, taxiways and aprons, as well as the navigational and communication equipment to facilitate aircraft operations. Landside facilities encompass all other facilities, including the terminal building, hangars and other structures as well as auto parking, access, and other facilities.

### Airside Facilities

Consisting of facilities that facilitate aircraft movement such as runways, associated taxiways, and airfield lighting, the airfield area comprises the largest percentage of land on the Greene County - Lewis A. Jackson Regional Airport. The following sections provide a brief overview of those facilities on the airport, including the navigational and communication aids that serve the airport and a brief discussion regarding airspace obstructions.

#### Runways

Runways are defined rectangular surfaces on an airport that are prepared or suitable for the landing or takeoff of airplanes. Greene County - Lewis A. Jackson Regional Airport has one runway designated Runway 7-25. Each runway end is identified by a number that corresponds to the magnetic compass bearing for aircraft making an approach to that end. For example, aircraft approaching Runway 7 are heading approximately 70 degrees from magnetic north. Aircraft approaching runway 25 are heading approximately 250 degrees from magnetic north. Every runway at an airport provides two compass positions (one at each end).

Runway 7-25 is 4,500 feet long by 75 feet wide and has a 278 feet long by 75 feet wide paved overrun at the end of Runway 25. The pavement surface is asphalt concrete and is marked as a non-precision instrument runway. The load-bearing capacity of 831 feet of runway at the west end is approximately 30,000 pounds for aircraft with a single wheel main gear configuration, and approximately 37,000

pounds for an aircraft with a dual wheel main gear configuration. The load-bearing capacity of the remainder of the runway has never been tested. However most airfield pavements constructed with state funding were designed for 30,000 pound aircraft with a single wheel gear configuration.

The east end of the usable runway has an elevation of approximately 913.9 feet above mean sea level and the west end of the runway has an elevation of approximately 946.4 feet above mean sea level. The effective gradient is therefore 0.72 percent up from the west end to the east end of the runway. **Table 1-6** provides summary data for the runway.

Runway Data Category	07-25
Elevation (by runway end)	914' / 946'
Length	4,500'
Width	75'
Surface Material	Asphalt
Pavement Strength	30,000 Single; 37,000 Dual
Gradient %	0.72%
Runway Marking	Non-Precision Instrument

Source: Stantec Consulting Services Inc.

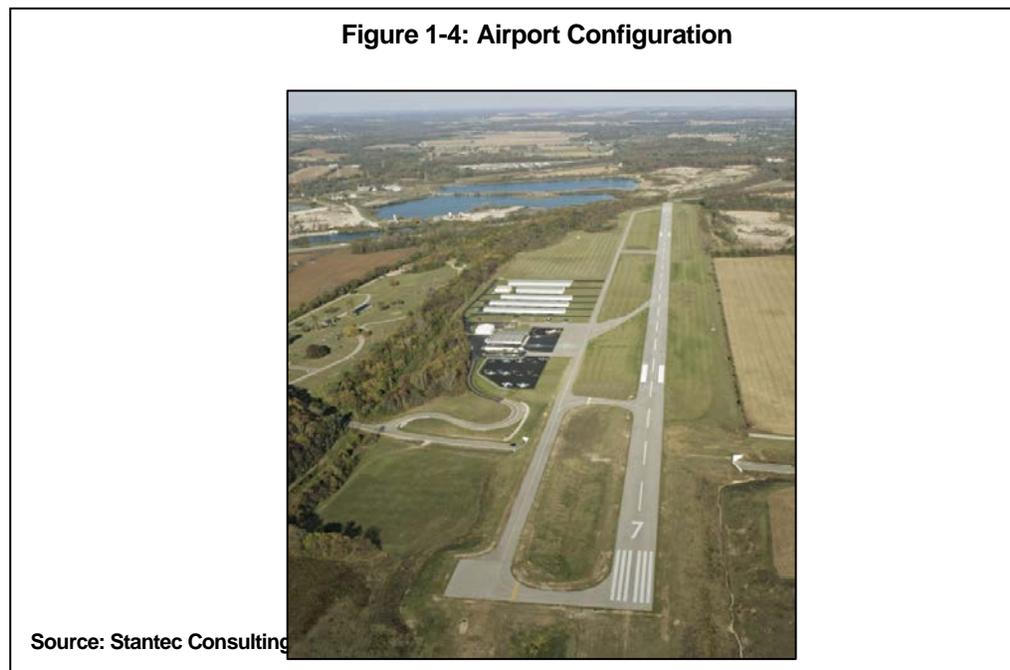
### Taxiways

Taxiways are paved areas over which airplanes move from one part of the airfield to another. One of their more important uses is to provide access for aircraft between the aircraft parking/storage areas and the runway. There are three types of taxiways: parallel, entrance/exit, and access. Taxiways that are parallel to runways generally provide a route for aircraft to reach the runway ends without taxiing on the runway. Since only one aircraft should be on a runway at a given time, it is extremely important to minimize the time aircraft use the runway for taxiing instead of takeoff or landing. Entrance/exit taxiways, which usually connect runways to parallel taxiways, provide paths for aircraft to enter the runway for departure or leave the runway after they have landed. Access taxiways provide a means for aircraft to move among the various airside components of an airport, including hangar areas, general aviation aprons, fueling areas, etc.

The airfield's taxiway system consists of one full length parallel taxiway running parallel to Runway 7-25 (35 feet wide), five entrance/exit taxiways of various widths, and several access taxiways of various widths. All of the entrance/exit taxiways except one are perpendicular to the runway. The angled entrance/exit taxiway connects the main apron directly to the runway. All of the taxiways consist of an asphalt concrete surface course. The parallel taxiway and some of

the entrance/exit taxiways have the same load-bearing strength as the runway pavement. However, most of the access taxiways are only strong enough to support light aircraft of 12,500 pounds (single wheel gear configuration), or less. **Figure 1-4** shows the current runway and taxiway configuration.

At the busiest times of the year, when flight training is in progress for the USAF (see the section on Fixed Base Operators below), there are often as many as 20 aircraft backed up on the parallel taxiway waiting for takeoff.

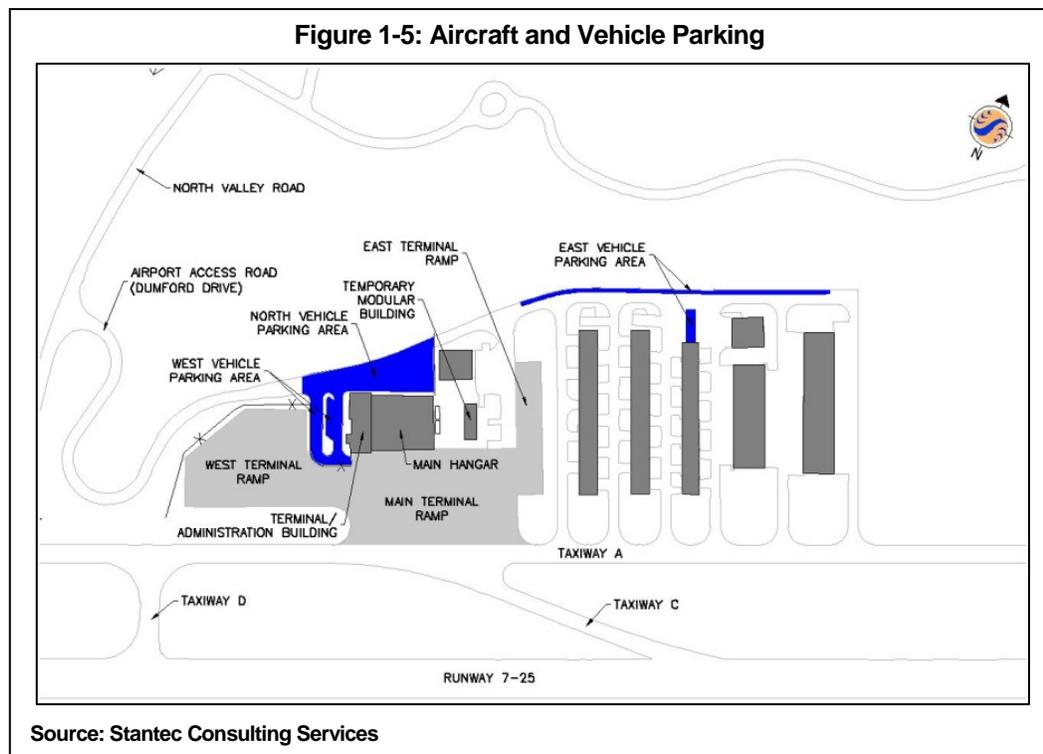


### **Aprons and Outdoor Aircraft Parking**

The Greene County - Lewis A. Jackson Airport has three paved aircraft aprons in the vicinity of the administration building and maintenance hangar. The main aircraft apron is located just south of these buildings and is used for aircraft movement, fueling and temporary parking. The area of this apron is approximately 71,990 square feet. A second aircraft ramp approximately 45,415 square feet in area is located to the west of the main apron and administration building. This apron is used strictly for parking up to 16 single engine and small twin engine aircraft and securing them to the provided tie-down anchors in the pavement. The third paved apron is located just east of the main apron and is approximately 12,755 square feet in size. This smaller apron is also used strictly for parking up to six single engine and small twin engine aircraft at provided tie-down anchors.

There is also a small aircraft holding apron at the end of the west parallel taxiway, near the end of Runway 7. Pilots can use this apron to conduct pre-flight checks on their aircraft without blocking other aircraft on the taxiway. Unfortunately, no such holding apron is available near Runway 25. During the busiest periods of the year, aircraft are often backed up on the east parallel taxiway to Runway 25 end. This is due to the number of flight training operations at that time, as well as other aircraft that may hold on the taxiway to complete their pre-flight checklists.

Finally, the airport provides a single aircraft parking space with tie-down anchors for small aircraft in the grass just north of the first two T-hangar rows east of the administration building (two spaces total). **Figure 1-5** shows the aircraft parking areas.



There are a total of 24 outdoor aircraft parking spaces with tie-down anchors. Approximately eight of these parking spaces are typically leased to the owners of aircraft based at the airport. The rest of the spaces are used for parking transient aircraft.

### Airfield Lighting

A variety of lighting aids are available for use at night or during adverse weather conditions at the airport.

Airport Identification Lighting: An airport rotating beacon containing the universally accepted optical system for lighting airports identifies the location of the airport. This beacon projects alternating green and white beams that are 180 degrees apart between dusk and dawn. The beacon is located at the peak of the maintenance hangar roof at the north end of the building. The elevation of the beacon is approximately 945' above mean sea level.

Runway and Taxiway Lighting: The existing runway and taxiway pavements, except the access taxiways, are lighted by elevated medium intensity light fixtures installed at required intervals around the pavements and located 10 feet off the pavement edges. The location and color of these lights designates where the runway and taxiways are located during darkness and in low visibility. The runway edge lights emit white light, except on the last 2,000 feet of runways with instrument approaches, where the lights emit yellow light on one side to advise pilots during takeoff that they are approaching the end of the runway. The runway end lights emit a split red and green light, with red facing the runway end to warn pilots on the runway where the runway ends, and green facing away from the runway to let pilots approaching the runway for landing know where the runway begins. The taxiway edge lights are blue. In addition to the edge lights, the taxiways also have internally lighted taxiway guidance signs at locations recommended by the FAA. These signs are color coded to provide mandatory information to pilots (such as the location of holding positions on the taxiways), direction information to pilots (such as arrows pointing in the direction of taxiways, ramps, or runway ends), and location information (such as which taxiway a pilot is currently on). All of these lights operate on series circuits, with isolation transformers at each fixture to maintain the rest of the circuit if any of the lights go out.

Lighting Aids: Lighting aids provide pilots with additional important information. The airport has Runway End Identifier Lights (REILS) near both ends of the runway which help identify the location of the runway ends by emitting high intensity white flashing light. The airport also has four-box Precision Approach Path Indicators at the recommended touchdown point near each runway end. These light fixtures provide visual approach guidance to pilots to assist them in following the correct glide path to the runway.

Finally, there is a lighted wind sock located near the mid-point of the runway on the south side to permit pilots to see from which direction the wind is blowing.

The airfield lighting equipment is located in a small metal electrical vault just north of the maintenance hangar, at the south end of the vehicle parking lot.

### **Navigational and Other Aids**

Navigational aids are electronic devices that provide electronic guidance information or position data to aircraft in flight for use in cross-country navigation

and for landing, using established instrument approach procedures. The airport currently has no ground based navigational aids.

#### VHF Omnidirectional Radio Range (VOR) Equipment

VORs are a type of short-range radio navigation system for aircraft. The network of fixed ground radio beacons broadcasts a radio frequency that is received by equipment inside an aircraft, which enables pilots to determine their position and stay on course. The system uses radio frequencies in the very high frequency (VHF) band from 108 to 117.95 MHz. Developed in the U.S. beginning in 1937 and deployed by 1946, VOR has been the standard air navigational system in the world used by both commercial and general aviation. There are about 3,000 VOR stations around the world. However, GPS equipment has been replacing the need for VORs.

As mentioned above, the Greene County - Lewis A. Jackson Regional Airport does not have navigational equipment on the airport. However, there is a VOR on the airfield at the neighboring Springfield-Beckley Municipal Airport which is used for straight-in VOR approaches to the Greene County - Lewis A. Jackson Regional Airport.

#### Satellites

Global Positioning Satellites (GPS) provide radio navigational, positioning, and time transfer information. This equipment is operated by the Department of Defense. Data can be received by equipment in an aircraft to advise pilots where they are located horizontally. When this is augmented by stationary equipment located on the ground, the data becomes more accurate and can provide vertical information as well as locational. An LPV (Localizer Performance with Vertical guidance) approach is an approach that uses the satellite information and the ground based equipment to tell pilots where they are horizontally and vertically with respect to the existing runway.

The Greene County - Lewis A. Jackson Regional Airport has published LPV approaches which use the available equipment, even though it is nowhere near the airport.

#### Automated Weather Observation System (AWOS)

An Automated Weather Observation System (AWOS) is located on the airport north of the runway, approximately 500 feet from the runway centerline and 1,000 feet west of Runway 25 end. This equipment provides valuable weather information for pilots, including wind speed and direction, cloud height, visibility, barometric pressure, and precipitation amount and type. This information is continually broadcasted so that pilots can obtain the information by tuning their aircraft radios to the proper frequency. It can also be obtained by calling the

proper telephone number. Warnings or advisories can also be recorded by the Airport Manager for broadcast with the weather information.

**Instrument Approaches**

Currently, there are four published instrument approach procedures at the airport, listed in the **Table 1-7** below. The RNAV approaches are approaches with vertical guidance, while the VOR approaches are non-precision approaches.

**Table 1-7: Instrument Approach Procedures**

Instrument Approach	Runway Designation	Ceiling Minimum	Visibility Minimums
RNAV (GPS LPV)	7	300' above airport	1-1/4 miles
RNAV (GPS LPV)	25	494' above airport	1 mile
VOR (Straight-in)	7	626' above airport	1 mile (1-3/4 Class C)
VOR (Straight-in)	25	674' above airport	1 mile (1-7/8 Class C)

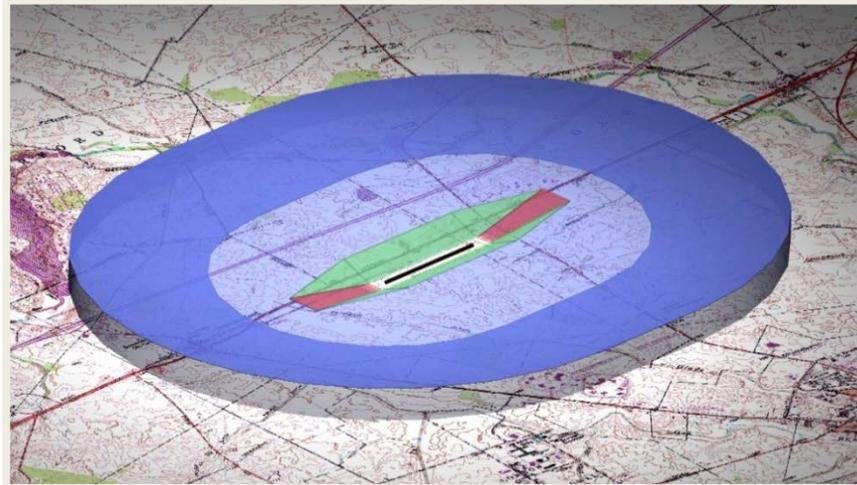
Source: US Terminal Procedures

**Airspace Obstructions**

The FAA has established standards for determining obstructions to safe flight on and in the vicinity of civil airports, as well as requirements for notifying the FAA of certain proposed construction or alteration activities that will take place in the vicinity of civil airports. The analysis of obstructions is based on criteria defined in Part 77 of the Federal Aviation Regulations, *Objects Affecting Navigable Airspace*. This section establishes standard imaginary surfaces around all civil airports.

**Figure 1-6** shows an example of typical Part 77 imaginary surfaces that exist around a general aviation airport with a single runway. The actual Part 77 surfaces for Greene County - Lewis A. Jackson Airport will be presented in the Airport Layout Plan.

Objects that penetrate any of these surfaces are considered obstructions. However, obstructions may not be considered hazards to the safe and efficient use of airspace. The FAA must conduct airspace reviews for each obstruction to determine what, if anything, must be done. The possibilities include removal of the obstruction, marking and lighting the obstruction, increasing instrument procedure minimums, and moving the runway threshold so that a clear approach may be made to that end of the runway. The FAA cannot require that an obstruction on private property be removed - they can only require advance notification by the proponent of the object so that they can determine if the object is an obstruction and hazard to safe aviation. They can then require that it be properly marked and lighted by the proponent. Fines can be assessed for failure to follow the advance notification process.

**Figure 1-6: Typical Part 77 Surfaces**

Source: Stantec Consulting Services

To determine whether an object is an obstruction to air navigation, Part 77 establishes several imaginary airspace surfaces in relation to an airport and to each runway end. The size of the imaginary surfaces depends upon the type of approach to the runway in question. The principal imaginary surfaces include:

- **Primary Surface:** Longitudinally centered on the runway at the same elevation as the nearest point on the runway centerline. This is shown as the black rectangle (runway) and the surrounding yellow rectangular area in Figure 1-6.
- **Horizontal Surface:** Located 150 feet above the established airport elevation, the perimeter of which is established by swinging arcs of specified radii from the center of each the primary surface end, connected via tangent lines. This is shown as the light blue semi-transparent area in Figure 1-6.
- **Conical Surface:** Extends outward and upward from the periphery of the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet. This is shown as the dark blue semi-transparent area in Figure 1-6.
- **Approach Surface:** Longitudinally centered on the extended centerline, and extending outward and upward from each runway end at a designated slope based on the runway approach. This is shown as the red semi-transparent areas in Figure 1-6.

- **Transitional Surface:** Extends outward and upward at a right angle to the runway centerline at a slope of 7:1 up to the horizontal surface. This is shown as the green semi-transparent area in Figure 1-6.

In Ohio, the ODOT Office of Aviation enforces the height of objects around public airports through Section 4561 of the Ohio Revised Code. ODOT also requires advance notification of construction of objects, and accepts the same notification form that the FAA requires. However, ODOT is empowered to deny construction that poses a hazard to safe aviation. As mentioned previously, ODOT prepares the FAA 5010 Airport Master Record based on their regular inspections of the airport. Information on the form includes the presence of the critical objects in the approach surface at each end of the runway.

The most recent 5010 Airport Master Record lists trees as obstructions within the approach surfaces at Runway 7 end. These trees were removed by the Airport Authority last year. However, there are trees that penetrate the transitional surfaces at both ends of the runway. These will be removed under a future project.

## Landside Facilities

There are various buildings and other aviation-related facilities located within the terminal area of the airport, north of the runway. Some of these buildings are owned by the Airport Authority and house either airport-related functions, or are leased to tenants. Other buildings are privately owned and the land on which they sit is leased from the Airport.

### **Administration Building**

The administration building is a 5,175 square foot single story concrete block building which is attached to the west side of the maintenance hangar. It is located on the north side of the runway, approximately at the mid-point of the runway, and it includes the following: a lobby; restrooms; the Airport Manager's office; a meeting room; FBO offices, flight training rooms, and counter space; vending machines; and storage space. In addition, the full service FBO has provided a temporary 1,632 square foot modular building east of the Administration Building to provide additional space for their operations.

**Figure 1-7** shows the Administration Building and attached main hangar.



### Roads and Parking Lots

The winding Dumford Road, approximately 964 feet in length, connects the airport parking lot just west of the administration building to North Valley Road approximately 50 feet below. The Airport Authority has advised us that there are often not enough vehicle parking spaces to satisfy demand. The main parking lot is located just west of the administration building and consists of a one-way directional loop with four parallel parking spaces on the west side of the loop, and six head-in angled parking spaces on the east side of the loop. A short drive near the south end of the loop also provides access to the main aircraft ramp. A second parking lot is located just north of the administration building and maintenance hangar. This approximately 13,125 square foot lot provides 13 additional straight-in parking spaces adjacent to the buildings, and nine additional parallel parking spaces along the north edge of the parking lot. On the east side of the north parking lot a service road approximately 875 foot long provides vehicle access to the aircraft storage hangars. Along this road there are approximately 32 additional parking spaces. Figure 1-5, included previously, depicts the locations of the vehicle parking areas available at the airport.

### Hangars

There are three conventional hangars at the Greene County - Lewis A. Jackson Regional Airport. A 12,600 square foot maintenance and storage hangar is attached to the east side of the administration building. Just to the north and east of this hangar is a 3,360 square foot conventional hangar. The maintenance

hangar and the nearby smaller hangar are both leased to MacAir, the full service Fixed Base Operator at the airport.

Further east of these hangars are three 10-unit standard T-hangars (numbered 100, 200 and 300 rows), an eight-unit nested T-hangar (400 row), and a 12-unit nested T-hangar (500 row). There is a 3,600 square foot conventional hangar just north of the eight-unit T-hangar. **Figure 1-8** shows the existing hangars.

**Figure 1-8: Administration Building and Main Hangar**



Source: Stantec Consulting Services

### Fixed Based Operator

The airport is currently served by two Fixed Base Operators (FBO). Both operators began operating at the airport in 2010.

*MacAir Aviation.* MacAir provides full service aircraft operations at the airport, including fuel sales, aircraft rental, aerial surveillance, flight instruction, airframe and engine maintenance, aircraft parking and hangar space rental, catering, ice and rental cars. They also provide complimentary crew cars.

Part of their flight training includes a 5-year contract with the USAF to provide introductory flight training to all of their flight surgeon students as part of the USAF Aeromedical Aviation Laboratory (AAL) program. The purpose of the AAL program is to expose flight surgeon students to the rigors of flying, mission planning, modern cockpit layout, disorientation, instrument procedures, aerobatics, low-level navigation, and formation flight in a setting that closely mirrors the USAF Undergraduate Flight Training program. The basic flight training class provides each student with one flight sortie of one hour duration. The advanced training class provides students with 6 sorties totaling eight flight hours. The AAL flight training takes place at the airport approximately 80 days each year between March and October. The USAF has plans to double the size of this program. However, they wish to accomplish this by increasing the number of students in each class instead of

adding more classes and extending the training over more days. If this occurs, it will be a problem for MacAir because of the limited facilities available at the airport which are already completely utilized for the program. In addition, MacAir would like to bring Navy and Army flight surgeons into the program.

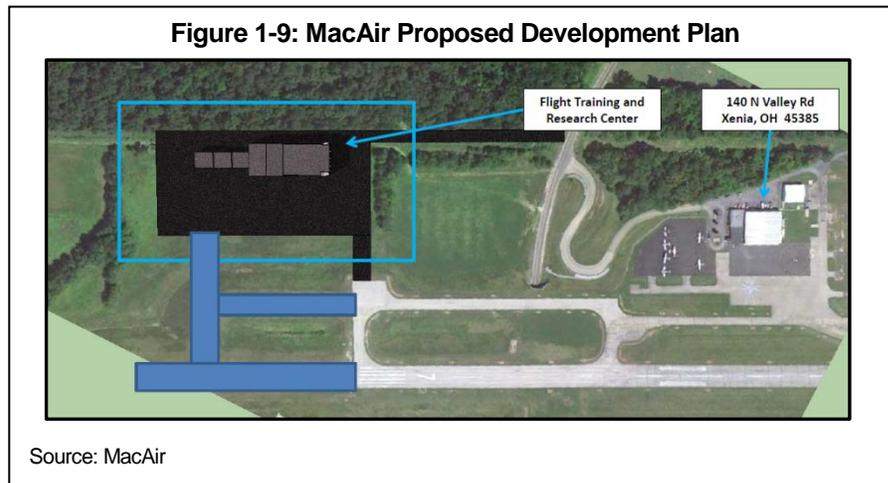
MacAir also has an active aircraft club located at the airport (formerly the Wright-Patterson Flight Club) with over 75 members. This club offers club members numerous flight training options and a well-maintained fleet of rental aircraft. One of the programs that the Aero Club offers is formation flying.

In addition to the flight training for the USAF and Aero Club, MacAir provides flight training for the general public. They have recently been working with local colleges to help them establish flight training programs, where some of the training and all of the actual flying would be held at the airport.

The aircraft fleet that MacAir owns or leases consists of 11 aircraft, including Cessna 172s, a Cessna 182, Piper Warriors, a Piper Arrow, a Grumman Cougar, Cessna 207s, and Cirrus SR22s. They bring in six Cirrus SR22 aircraft for the AAL program and two aerobatic aircraft, as needed. All of the aircraft are used for public rental and training except the 207s (which are used for their surveillance business) and the CSR22s (which are used for USAF training). At the busiest point in the year, they require 15 hangar spaces, four maintenance bays, and 10 outdoor aircraft parking spaces with tie-downs for their aircraft. They also require 60 vehicle parking spaces during this period.

MacAir Aviation employs eight full-time people, including a liaison for the AAF program, two linemen, two managers, two mechanics, and a representative of the Aero Club. They also employ 22 part-time employees, including certified flight instructors and additional linemen. In addition to the direct employees of MacAir, they subcontract AAL work to nine additional people. According to MacAir, they expect that these numbers will grow approximately 20 percent each year if they can have the space they require for facilities. They anticipate receiving their FAA Part 141 flight instruction certificate in the near future.

Almost all of the available space in the Administration Building at the airport, as well as the large conventional maintenance hangar and a smaller conventional hangar, is leased to MacAir. In addition, they have brought in a modular building to provide additional space for training, administration, and socializing. They would like to construct a new hangar with a large attached office and classroom building, a large aircraft ramp, and large auto parking area for their operations. The preferred location for this new development is on the west side of Valley Road, north of Runway 7, on approximately 12 acres of ground privately owned. **Figure 1-9** depicts a copy of the proposed plan.



MacAir has discussed the possibility of acquiring or leasing approximately 12 acres of land from the current owner (Ohio University) at that location. To avoid the possibility of a "through-the-fence" operation that could cause problems with their FAA Grant Assurances should MacAir provide operations on this land, the Airport Authority began conducting negotiations with the property owner about purchasing the desired property. The intent of the Airport Authority would be to lease the land to MacAir so that the operation remains on airport property. Alternatively, the Airport Authority could relocate their airport administration and other public operations from the existing terminal area to the new area and lease MacAir all of the facilities at the current location. The Airport Authority has reached a tentative agreement to purchase the desired 12 acres, as well as to lease the remaining land (approximately 100 acres) from the property owner west of this land. This agreement may be finalized before the end of 2014.

MacAir wishes to expand their facilities within the next year or two because they want to do everything they can to keep the AAL program at the airport. The USAF has advised them additional facilities will be required to do so. MacAir has asked the Airport Authority to help fund the desired new facilities using FAA grant funds. Unfortunately, the cost to design, bid, and construct the desired facilities would be high and would need to be spread over several years. In addition, environmental investigations and coordination would be required before any new development could take place. Finally, the Airport Authority plans to request FAA reimbursement in the next year or two for construction of the east parallel taxiway relocation, tree clearing, and auto parking lot resurfacing that were completed with County funds. In addition, they would like to use FAA funds for construction of a holding apron near Runway 25 end and an aircraft ramp east of the existing T-hangars. MacAir has notified the Airport Authority that they may need to relocate the AAL program to Springfield Municipal Airport if something is not resolved to provide the additional facilities.

*Beaver Valley Aviation.* Beaver Valley Aviation provides flight instruction, aircraft rental, and aircraft management. In addition, they have arrangements with at least one company to provide a pilot for that company's Cherokee Six aircraft. They rent a small space in the airport Administration Building and employ a full-time manager and five part-time flight instructors. They currently work with Mad River Air to provide aircraft for charter service when necessary, but the owner of Beaver Valley Aviation is considering the possibility of adding aircraft charter as a direct service through Beaver Valley Aviation in the future.

This operator has five aircraft in their fleet, including two Cessna 172s, a Piper Arrow, a Piper Apache, and a Tecnam light sport aircraft. Two of these aircraft are stored in T-hangar units at the airport while the others are stored at outdoor aircraft parking spaces with tie-down anchors. These aircraft conducted approximately 6,560 operations last year, and they expect to conduct 7,000 operations in 2013. In addition, Beaver Valley currently leases a Cessna 172 that is based at the airport, and may add it to their fleet in the future. They also plan to add a Piper Warrior in the future.

Beaver Valley typically requires three auto parking spaces at the airport, but this can increase to as many as nine spaces during busy periods.

In the next two or three years Beaver Valley Aviation would like to construct a small conventional hangar (around 2,500 square feet) in which to store three of their aircraft. They may also require additional office space at that time.

### **Fuel Farm**

There are two above ground ConVault fuel storage tanks at the airport, located just east of the maintenance hangar. One 10,000-gallon tank is used to store 100LL fuel (for piston-engine aircraft) and the other 10,000-gallon tank is used to store Jet-A fuel (for turbine-engine aircraft). There have also been discussions regarding adding motor vehicle gasoline (mogas) for use by those aircraft that can use it.

The Airport Authority provides full-service fueling options using the MacAir staff to actually pump the fuel. The dispensers for fueling are located near the northeast corner of the main aircraft apron, and aircraft must park at the pumps for service. No fuel trucks are available to deliver fuel to aircraft at other locations on the airport.

### **Fencing**

A four-foot high security fence is present from the west end of the west aircraft apron to the east side of the north parking lot. This fence prevents unauthorized vehicle traffic from entering the airfield. There is a two-leaf manual gate where

the north end of the main parking loop connects to the main apron near the administration building. There is an electronic gate at the west end of the service road that connects to the north parking. This gate is activated by a keypad just west of the gate.

### Support Facilities

The Beaver Creek Fire Station is located approximately three miles from the Airport. This fire department, as well as the police department, has passes that allow them access the airfield through the access gates in the event they are needed.

The availability and capacity of the utilities serving the Greene County - Lewis A. Jackson Regional Airport are important factors in determining the development potential of airport property, as well as the development potential of the land immediately adjacent to the airport. The airport currently has septic tanks and water wells. Plans have been developed for extension of sewer and water service to the airport. However, there is currently no justification for the high cost of providing these utilities to the airport.

## 1.4 Airspace, Air Traffic Control and Weather

The Federal Aviation Administration (FAA) Act of 1958 established the FAA as the responsible agency for the control and use of navigable airspace within the United States. An analysis of airspace use is critical in determining the capacity of the airfield and the operational interaction of Greene County - Lewis A. Jackson Regional Airport with surrounding airports. Flights into the Airport are conducted using both Instrument Flight Rules (IFR) and Visual Flight Rules (VFR). Instrument flight rules are those that govern procedures for conducting operations during adverse weather conditions. Visual flight rules govern the procedures for flight under visual conditions. Published procedures for instrument (precision or non-precision) approaches outline the aircraft's required flight path and altitude.

On an average day in the United States, approximately 50,000 general aviation and commercial aircraft depart an airport en route to another destination. As air traffic has continued its significant growth over the history of aviation, so too has the need to effectively manage and regulate the safe and efficient use of the nation's airspace. As such, the FAA has established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including air navigation facilities, airports and landing areas, aeronautical charts, associated rules, regulations, and procedures, technical information, and personnel and material. The system also includes components shared jointly with the military.

## Regional Airspace

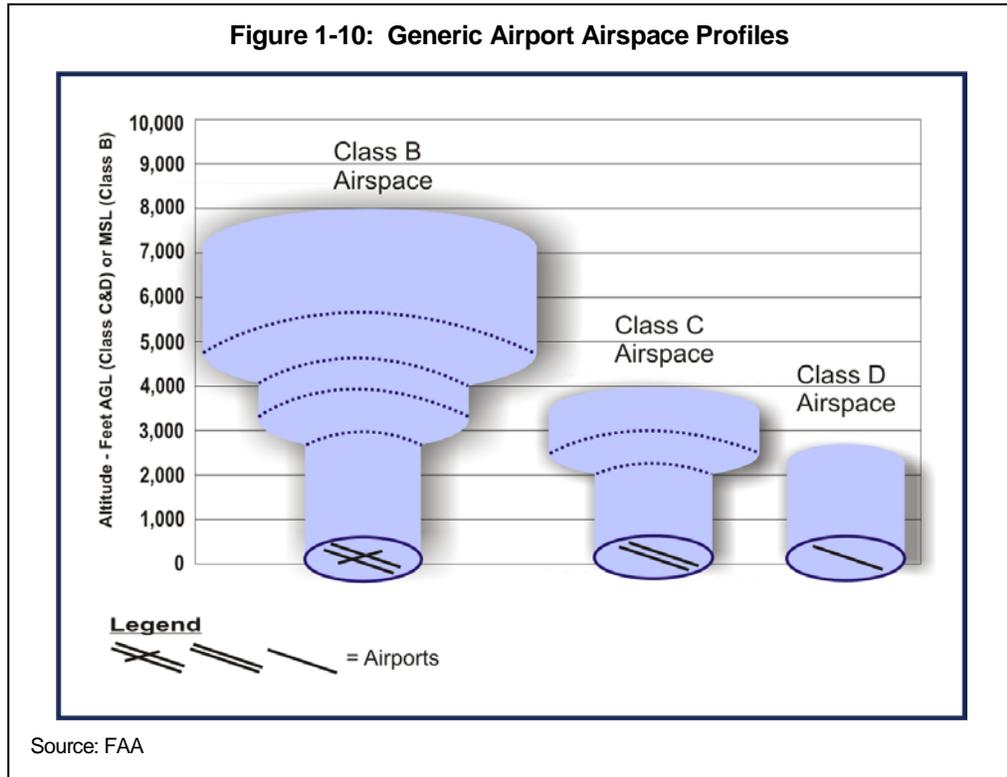
Airspace in the U.S. is classified generally as controlled, uncontrolled, or special use. Controlled airspace encompasses those areas where there are specific certification, communication, and navigation equipment requirements that pilots and aircraft must meet in order to operate in that airspace. The U.S. airspace is further divided into seven classes, each of which has different rules and regulations. These classes are:

- Class A: This is designated for positive control of the aircraft. This area of airspace ranges from 18,000 feet above MSL to 60,000 feet above MSL. Within Class A airspace, only IFR<sup>1</sup> operations are authorized. The aircraft must have specific equipment and an air traffic control (ATC) clearance before entering the airspace.
- Class B: This is multi-layered airspace from the surface of the earth up to a defined height specifically determined for the airport which it serves. It is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high performance aircraft at major airports. The aircraft must have specific equipment and an ATC clearance before entering the airspace.
- Class C: This airspace is defined around airports with air traffic control towers and radar approach control facilities. The top of Class C airspace is normally 4,000 feet above ground level. The aircraft must have specific equipment and must have established communications with the ATC facility having jurisdiction over the airspace before entering the airspace.
- Class D: This airspace is normally a circular area with a radius of four to five nautical miles around the primary airport and may include extensions necessary to include instrument approach and departure paths. Its height may vary based on characteristics found at the airport and in the surrounding areas. Class D airspace does not have radar approach control facilities.
- Class E: This is a general category that contains controlled airspace previously designated as control zones for non-towered airports, airspace transition areas, and federal airways.
- Special Use Airspace (SUA): An area wherein activities must be confined because of their nature or wherein limitations are imposed on aircraft operations not part of those activities. SUA is generally classified as a Restricted, Prohibited, or Military Operations Area.
- Class G: Airspace not designated as Class A, B, C, D, E, or SUA is considered uncontrolled and is classified as Class G.

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<sup>1</sup> IFR refers to procedures used by pilots when operating in accordance with Federal Aviation Regulations (FAR) that require an instrument flight plan.

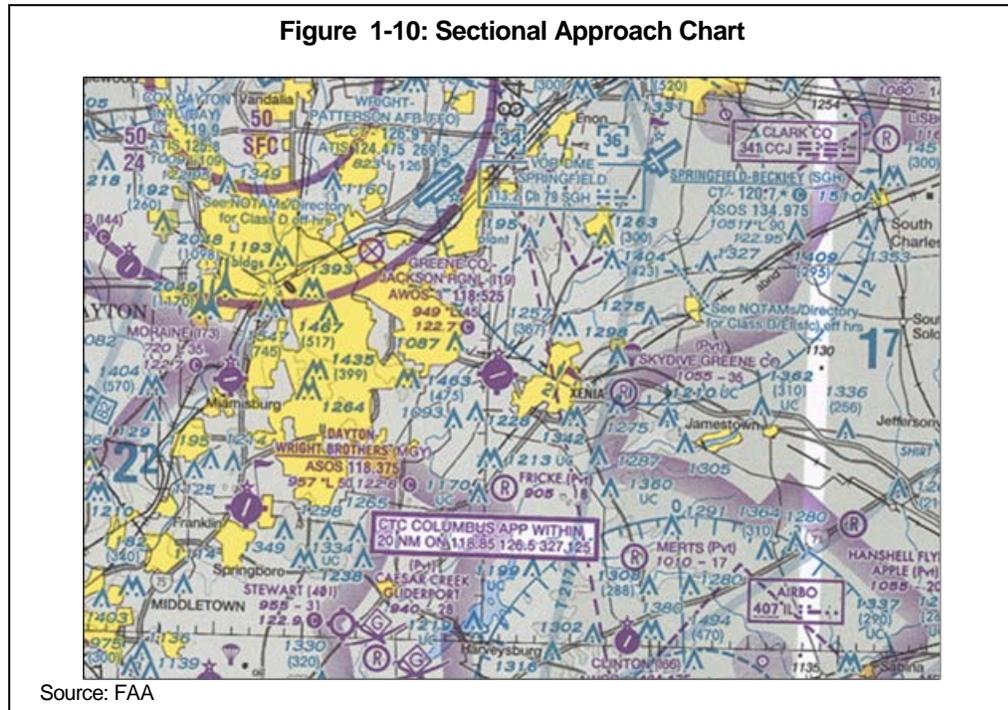
**Figure 1-10** illustrates a profile perspective of the Class B, C, and D airspaces that surround towered airports throughout the country. This graphic shows the general shape of the airspace over each type of airport. The exact dimensions of these airspaces may vary depending on the unique characteristics surrounding a specific airport.



Local airspace surrounding Greene County - Lewis A. Jackson Regional Airport is designated as Class E airspace, a concentric circle centered on the airport with extensions for non-precision approaches on each end of the runway where the controlled airspace around the airport is lowered to a floor of 700 feet above ground level.

Generally, Class E airspace consists of the immediate controlled airspace at airports without control towers and is intended to provide a transition area from terminal or en-route environments. Extending upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace, Class E airspace is also configured to accommodate any existing instrument procedures. Within Class E airspace, radio communications and transponder are not required to operate under VFR conditions, unless the airport has an air traffic control tower; however, IFR flights must be capable of communicating with regional ATC (Center) and be Mode C Transponder equipped (capable of reporting altitude).

**Figure 1-10** illustrates the airspace surrounding the airport and other nearby features, as depicted on the FAA Sectional Aeronautical chart.



As the figure shows, the airspace for Greene County - Lewis A. Jackson Airport overlaps with the airspace for Springfield-Beckley Municipal Airport, James A. Cox Dayton International Airport, Clinton County Airport, Dayton Wright Brothers, and Moraine Airport.

### Air Traffic Control

FAA Order 7110.65M, *Air Traffic Control*, establishes that the primary purpose of the ATC system is safety and further states that the “primary purpose of the ATC system is to prevent a collision between aircraft operating in the system and to organize and expedite the flow of traffic.” ATC is the means by which aircraft are directed and separated within controlled airspace.

Within the continental United States, there are 22 geographic areas under Air Traffic Control jurisdiction, with individual Air Route Traffic Control Centers (ARTCC) providing air traffic services within each area. Greene County - Lewis A. Jackson Regional Airport lies within the Cleveland, Ohio ARTCC service area, which includes the airspace in Ohio, as well as portions of Maryland, Michigan, New York, Pennsylvania, West Virginia, and the southernmost portion of Ontario, Canada. However, Greene County - Lewis A. Jackson Regional Airport is also a

non-towered airport and pilots must communicate their intentions to other pilots in the area via a Common Traffic Advisory Frequency (CTAF) on frequency 122.7.

## Meteorological Conditions

Prevailing weather conditions play a critical role in the operational capabilities of any airport. Temperature and humidity are important factors in determining the length of runway required for aircraft takeoffs and landings because higher temperatures and humidity levels during the summer months will result in longer runway length requirements. In addition, prevailing area wind speed and direction are key considerations when determining an airport's runway orientation and subsequently dictate the period of time a particular runway should be used. Periods of low visibility due to weather conditions are also major factors in determining the need for instrument aids.

In order to determine these conditions for Greene County - Lewis A. Jackson Regional Airport, weather information was obtained from James M. Cox Dayton International Airport, located approximately 26 miles to the northwest. This information consisted of 20 years of hourly weather data collected between 1983 and 2002 (175,272 observations). The data showed that during the region's hottest month (July), the mean maximum high temperature was 90.6 degrees Fahrenheit.

The direction and speed of the wind affects the direction in which traffic at an airport operates, since aircraft should generally takeoff and land into the prevailing wind direction. The FAA recommends that the orientation and number of runways at public airports result in the ability to accommodate aircraft at least 95 percent of the time without excessive crosswinds. The permitted crosswinds are defined in Advisory Circular 150/5300-13 based on the category of aircraft using the airport. The aircraft category is based on the standard approach speed and the wing span of the various aircraft. The following categories of aircraft currently utilize the airport: A-I, B-I, A-II, B-II, C-I and C-II.

Independent of the wind direction, the ceiling and visibility conditions at an airport determine the ATC procedures in effect. Ceiling is the height above the earth's surface of the lowest layer of clouds not classified as "thin" or "partial." Visibility is the ability to see and identify prominent unlighted objects by day and prominent lighted objects by night. Ceiling and visibility vary with cloud conditions, fog, precipitation, and haze. The ceiling and visibility minimums at the airport are grouped into two categories: Visual Flight Rules (VFR) and Instrument Flight Rules (IFR). VFR is in effect when the cloud ceiling is greater than or equal to 1,000 feet and visibility is greater than or equal to three miles. IFR conditions prevail when the visibility or cloud ceiling falls below those minimums prescribed under VFR.

Wind and weather conditions influence airport operational capacity by affecting the percentage of time traffic can operate under VFR, or the more stringent, capacity-reducing IFR. Weather conditions are typically divided into two categories: Visual Meteorological Conditions (VMC), conditions that are required when operating under VFR, and Instrument Meteorological Conditions (IMC), conditions that require adherence to IFR. A pilot can operate under VFR or IFR in VMC, but can only operate under IFR in IMC.

The wind data obtained from James M. Cox Dayton International Airport was summarized for all weather conditions, as well as the sub-sets of VFR and IFR conditions. By plotting the wind speed and direction data in a wind rose and superimposing a rectangle representing the runway at the correct bearing, the approximate wind coverage can be calculated. The width of the rectangle represents the maximum permitted crosswind component. Using this methodology, the calculated wind coverage for each aircraft group that uses the airport is presented in **Table 1-8**.

Category	Crosswind Velocity	All Wind Coverage	VFR Wind Coverage	IFR Wind Coverage
A-I, B-I	10.5 knots	92.2%	92.5%	89.3%
A-II, B-II	13 knots	96.8%	97.0%	95.4%
C-I, C-II	16 knots	99.1%	99.2%	98.5%

Wind Source Station: James M. Cox Dayton International Airport  
 Observation Period: 1983 through 2002 (175,272 observations), All Weather

All weather winds at the airport are less than 10 knots approximately 75.2 percent of the time.

## 1.5 Summary

This inventory chapter represents a consolidated resource of airport data that may be used and referenced during the completion of the Airport Master Plan Update. When necessary, data presented in this chapter will be expanded on for the completion of specific master planning tasks. In addition, as the master plan progresses, new and/or updated data related to facilities and infrastructure examined in this chapter may become available. When appropriate, new data will be incorporated into this chapter and the entire Airport Master Plan Report.

The inventory data presented in this chapter provides a framework from which analysis in the Airport Master Plan will proceed. Some inventory data, such as the

airport's history, provides general background knowledge. Other types of inventory data, such as airport role, historic activity, area socioeconomic trends, and existing airport facilities are used to develop forecasts of future activity levels at the airport and to determine future facility requirements.

Much of the data presented in this chapter is used to conduct numerous analyses as the master planning process works towards identifying a recommended development plan. The next step in the planning process is to formulate forecasts for the quantity and type of future aviation activity expected to occur at the airport during the planning period.

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## Forecast of Aviation Demand

Projecting future aviation demand is a critical element in the overall master planning process. The activity forecasts developed in this chapter will be used in subsequent tasks to determine the characteristics of future airside and landside facility developments.

This chapter discusses the findings and methodologies used to project aviation demand at Greene County – Lewis A. Jackson Regional Airport (I19). It must be recognized that there are always short-term fluctuations in an airport's activity due to a variety of factors that cannot be anticipated. The forecasts developed in the Master Plan Update provide a meaningful framework to guide the analysis of future airport development needs and alternatives.

The projections of aviation demand developed for Greene County – Lewis A. Jackson Regional Airport are documented in the following sections:

- Regional Demographics
- Historic Aviation Activity
- National General Aviation Trends – FAA Aerospace Forecasts
- Ohio Aviation Trends and Forecast
- Projections of Aviation Demand – Greene County – Lewis A. Jackson Regional Airport
  - Based Aircraft Projections
  - Aircraft Operations Projections
- Critical Aircraft
- Summary

This forecast analysis includes methodologies that consider historical aviation trends at Greene County – Lewis A. Jackson Regional Airport and throughout the nation. Local historical data were collected from FAA Terminal Area Forecast (TAF) records, airport records, and the 1997 Greene County – Lewis A. Jackson Regional Airport Master Plan Update. In addition, demographic data for Greene County was used to track local trends and conditions that can impact general aviation demand levels. Projections of aviation activity for the airport were prepared for the near-term (2017), mid-term (2022), and long-term (2032) timeframes. These projections are generally unconstrained and assume the

airport will be able to develop the various facilities necessary to accommodate based aircraft and future operations.

## 2.1 Regional Demographics

Regional population and employment data were examined in detail in the preceding inventory chapter. Where applicable, this demographic data can be used in the master planning process to relate future aviation activity levels at the airport to area demographic trends. The airport study area, which includes Greene County, has experienced modest growth over the past decade. This analysis examined the historical trends and future projections of the region's population, employment and earnings. Several reliable data sources were utilized. Historic and projected future population data was obtained from the U.S. Census as well as the Ohio Development Services Agency. Employment and earnings data were compiled from Woods & Poole Economics, Inc.

The largest public employers in Greene County include Wright Patterson Air Force Base, Wright State University, Greene County, and Beavercreek Board of Education. Greene County's largest private employers include Kettering Health Network/Greene Memorial Hospital, Unison Industries, Kroger, CSC, MacAulay Brown, Wright-Patt Credit Union, SAIC, Ball Systems, and CACI.

## 2.2 Historic Aviation Activity

Forecasting activity at Greene County – Lewis A. Jackson Regional Airport poses a unique challenge compared to many airport forecasts. While the airport is a general aviation facility, the activity consists of a unique mixture of recreational activity, corporate activity and flight training activity. This forecast will evaluate local and regional trends related to aviation growth, as found in many airport forecasts and highlighted in the previous section, but it will also look at the unique mix of aircraft and operational nature found at the airport in order to develop a forecast which encompasses regional influences as well as characteristics found only at Greene County – Lewis A. Jackson Regional Airport.

Historic based aircraft and operations data for Greene County – Lewis A. Jackson Regional Airport provide the baseline from which future activity at the airport can be projected. While historic trends are not always reflective of future periods, historic data does provide insight into how local, regional, and national demographic and aviation-related trends may be tied to the airport.

For the purposes of the following analysis, a based aircraft is generally defined as an aircraft that is permanently stored at an airport. An aircraft operation represents either a landing or departure conducted by an aircraft. A takeoff and a landing, for example, would count as two operations.

It should be noted that the FAA Terminal Area Forecast (TAF) presents information obtained during annual airport inspections as detailed on the FAA's Form 5010. The based aircraft data is not necessarily accurate as it is generally estimated at the the time of inspection. In some cases, annual inspections are not always completed within a calendar year and based aircraft data may simply be carried forward to the next year. The most recent data from the Airport Inventory and Data Survey indicates that the number of based aircraft in 2012 has increased to 87.

According to the TAF and 5010 form, the number of aircraft based at Greene County – Lewis A. Jackson Regional Airport grew significantly over the past 10 years, and recently increased to 87 in 2012. The current based aircraft count of 87 is an all time high for the airport. The Wright Patterson Air Force Base Aero Club moved to the airport in 2012, bringing with it six based aircraft. The airport also serves as a base for aviation training of Air Force doctors. Six Cirrus aircraft are leased for purposes of providing Air Force training. From 1990 through 2012, the number of aircraft based at the airport grew overall, with the number of single-engine, multi-engine, and helicopter aircraft fluctuating every several years.

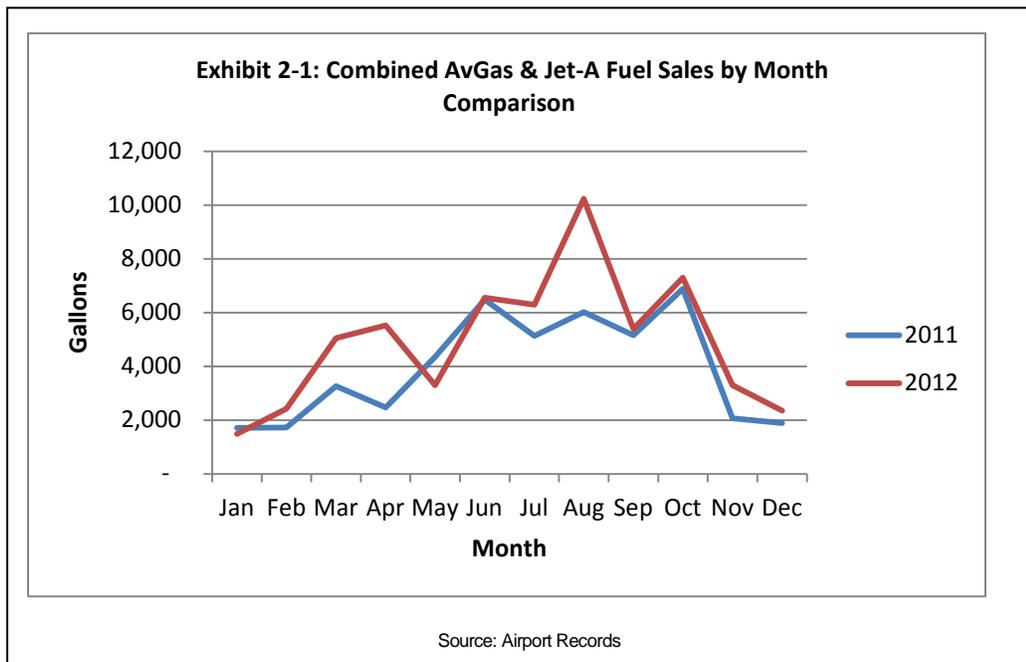
Annual operations represent the number of aircraft takeoffs and landings occurring at the airport during a calendar year. Historic operations data for the airport includes operations conducted by both based aircraft as well as those conducted by itinerant aircraft coming from other airports and arriving at the airport for a variety of reasons including business, recreation, or flight training purposes. Historic aircraft operations data for Greene County – Lewis A. Jackson Regional Airport are summarized in Chapter 1.

Over the past 22 years, activity at Greene County – Lewis A. Jackson Regional Airport has increased by a total of 97 percent, or 4.4 percent annually. During the 1990's, airport activity fluctuated from about 15,000 operations in 1990 to 12,000 operations in 2000, then increased to 38,900 operations by 2012. Historic operations for the airport are summarized in Chapter 1.

General aviation traffic represents 100 percent of the aviation activity at the airport. Local operations comprise about 90 percent of the general aviation traffic. The airport's location and services make it an ideal airport for both itinerant and local aircraft to land, be serviced or fueled. The airport has the benefits of uncongested airspace, multiple instrument approaches, reasonable runway length to accommodate business aircraft and both 100LL aviation gas and jet fuel to serve based aircraft and attract aircraft passing through the area. Regional economic growth and future development of the airport may help to increase the flow of itinerant activity at the airport. Such development may also increase the number of based aircraft at the airport. As companies are attracted to the region, corporate flight departments may find interest in basing aircraft at Greene County – Lewis A. Jackson Regional Airport.

Year-to-year fuel sales are typically strong indicators of recent trends in local aviation activity. Overall, total annual fuel sales at the airport have grown by 26

percent from 2011 to 2012. In 2011, total annual fuel sales exceeded 47,000 combined gallons of avgas and Jet-A, while this total was over 59,000 gallons in 2012. Avgas (100LL) comprises the majority of fuel sales as it outsold Jet-A by an average ratio of five gallons to one in 2011 and seven gallons to one in 2012. On a month-to-month basis, fuel sales pick up during the summer months, which correlates to the Air Force’s training programs operated through MacAir as well as the general seasonal increase in general aviation flying activities. A side by side comparison of total combined fuel sales from 2011 and 2012 is shown in **Exhibit 2-1** below.



### 2.3 National General Aviation Trends – FAA Aerospace Forecasts

The aviation industry and general aviation activity, especially in Ohio, have experienced significant changes over the last 20 years. At the national level, fluctuating trends regarding general aviation usage and economic upturns/downturns resulting from the nation’s business cycle have all impacted general aviation demand. This section will examine general aviation trends, and the numerous factors that have influenced those trends, in the U.S. and the State of Ohio.

Recent trends, both national and local, will be important considerations in the development of projections of aviation demand for Greene County – Lewis A. Jackson Regional Airport. National trends can provide insight into the potential future of aviation activity and anticipated facility needs. Data sources that were

examined and used to support this analysis of national general aviation trends included the following:

- Federal Aviation Administration, FAA Aerospace Forecasts, 2012-2032
- General Aviation Manufacturers Association (GAMA), General Aviation Statistical Databook 2011
- National Business Aircraft Association (NBAA), NBAA Business Aviation Fact Book, 2012 and earlier
- General Aviation Statistical Databook 2010
- Honeywell Corporation, 21<sup>st</sup> Annual Business Aviation Outlook, 2012

Data from these sources regarding historic and anticipated trends in general aviation will be summarized in the following sections of this report:

- General Aviation Overview
- General Aviation Industry
- Business Use of General Aviation
- Summary of National General Aviation Trends

Historic and anticipated trends related to general aviation will be important considerations in developing regional forecasts of general aviation demand for the airport.

### General Aviation Overview

General aviation aircraft are defined as all aircraft not flown by commercial airlines or the military. General aviation activity is divided into six use categories, as defined by the FAA. There are more than 18,300 public and private airports located throughout the United States, as reported by the FAA. More than 3,300 of these airports are included in the National Airport System, indicating their eligibility for federal funding assistance. Commercial service airports, those that accommodate scheduled airline service, represent a relatively small portion (538 or roughly 16%) of the airports in the National Airport System. General aviation airports, including relievers, comprise more than 2,800 facilities within the National Airport System. More than 15,000 additional airports, both private and public use, supplement those airports that are included in the National Airport System. As a comparison, Ohio has an airport system of 104 publicly-owned airports, of which seven provide scheduled air service.

### General Aviation Industry

A pronounced decline in the general aviation industry began in 1978, and lasted throughout most of the 1980s and into the mid-1990s. This decline resulted in the loss of over 100,000 manufacturing jobs and a drop in aircraft production from about 18,000 aircraft annually to only 928 aircraft in 1994 and a dramatic drop in the number of new student pilots.

Contributing to the decline in general aviation during this period was the increasing number of liability claims against aircraft manufacturers, the loss of Veterans Benefits that covered many costs associated with student pilot training, and the recessionary economy. Product liability lawsuits arising from aircraft accidents resulted in dramatic increases in aircraft manufacturing costs. Manufacturers estimated that these liability claims contributed to approximately 30 percent of the cost of a new aircraft.

Enactment of the General Aviation Revitalization Act (GARA) of 1994 provided significant relief to the aviation industry. This Act established an 18-year Statute of Repose on liability related to the manufacture of all general aviation aircraft and their components where no time limit was previously established. GARA spurred manufacturers including Cessna and Piper Aircraft to resume production of single-engine piston general aviation aircraft. While enactment of GARA stimulated production of single-engine piston aircraft, the cost of these aircraft has continued to increase. The relatively high cost of new general aviation aircraft has contributed to significantly lower levels of aircraft production from those experienced during the 1960's and 1970's when the annual numbers of aircraft manufactured were commonly between 10,000 and 18,000 new aircraft per year.

Some positive impacts the Act has had on the general aviation industry are reflected in recent national statistics. Since 1994, statistics indicate an increase in general aviation activity, an increase in the active general aviation aircraft fleet, and an increase in shipments of fixed-wing general aviation aircraft.

Most recently, however, the terrorist attacks of September 11, 2001 and the recessionary national economy have had a dampening impact on these positive general aviation industry trends. Significant restrictions were placed on general aviation flying following September 11th, which resulted in severe limitations being placed on general aviation activity in many areas of the country. Most of these restrictions have now been lifted and business and corporate general aviation have experienced some positive gains resulting from additional use of general aviation aircraft for business and corporate travel tied in part to new security measures implemented at commercial service airports and the increased personal travel times that have resulted.

Post 2001, general aviation recovered briefly but was then hit by the housing collapse and global economic recession that started in December 2007 and continued through 2009. Although the recession officially ended in 2009, a recessionary economic climate still lingers and continues to dampen the speed of economic recovery. Stagnant growth in many sectors of the general aviation industry reflects this trend and the outlook for future industry growth remains limited. In addition, high fuel prices compound the issue, further limiting demand for general aviation.

## Business Use of Aviation

Business aviation is one of the fastest growing facets of general aviation. Companies and individuals use aircraft as a tool to improve their businesses efficiency and productivity. The terms business and corporate aircraft are often used interchangeably, as they both refer to aircraft used to support a business enterprise.

The FAA defines business use as “any use of an aircraft (not for compensation or hire) by an individual for transportation required by the business in which the individual is engaged.” The FAA defines corporate/executive transportation as “any use of an aircraft by a corporation, company or other organization (not for compensation or hire) for the purposes of transporting its employees and/or property, and employing professional pilots for the operation of the aircraft.”

Regardless of the terminology used, the business/corporate component of general aviation use is one that has experienced significant recent growth.

Increased personnel productivity is one of the most important benefits of using business aircraft. Companies flying general aviation aircraft for business have control of their travel. Itineraries can be changed as needed, and the aircraft can fly into destinations not served by scheduled airlines. Business aircraft usage provides:

- Employee time savings
- Increased enroute productivity
- Minimized time away from home
- Enhanced industrial security
- Enhanced personal safety
- Management control over scheduling

Many of the nation's employers who use general aviation are members of the National Business Aircraft Association (NBAA). The NBAA's Business Aviation Fact Book 2012 indicates that about three percent of the approximately 15,000 business aircraft registered in the U.S. are flown by Fortune 500 companies, while the remaining 97 percent are operated by a broad cross-section of organizations, including governments, universities, charitable organizations and businesses – large, medium, and small. Business use of general aviation aircraft ranges from small, single-engine aircraft rentals to multiple aircraft corporate fleets supported by dedicated flight crews and mechanics. General aviation aircraft use allows employers to transport personnel and air cargo efficiently. Businesses often use general aviation aircraft to link multiple office locations and reach existing and potential customers. Business aircraft use by smaller

companies has escalated as various chartering, leasing, time-sharing, interchange agreements, partnerships, and management contracts have emerged.

A growing option for business aircraft operators is fractional ownership, in which companies or individuals own a fraction of an aircraft and receive management and pilot services associated with the aircraft's operation.

Fractional ownership allows companies that have never before used business aircraft to experience many advantages of business aviation quickly and without many of the startup considerations typically associated with traditional flight departments. Executive Jet Aviation (NetJets), which began its fractional program in 1986, and was followed by Bombardier's Business Jet Solutions (Flexjet), has promoted the concept of fractional ownership the longest. Others, including Flight Options and CitationShares, have since entered the marketplace. This segment of the industry has experienced substantial growth.

Fractional ownership continues to be a major contributor to the growth of business aviation because it extends the benefits of business flying to new customers. Fractional aircraft programs grew dramatically in the first 20 years since the concept was introduced. In 1986, there were three owners of fractionally held aircraft. By 1993, there were 110. From 2000 to 2004, the number of companies and individuals using fractional ownership grew by 62 percent, from 3,834 to 6,217 shares. This growth stalled as a result of the economic recession of 2008 and 2009, but has since rebounded and is once again experiencing growth. Flight Options, the second largest fractional ownership company in the U.S., reported a 467 percent increase in fractional share sales from 2010 to 2011. Flexjet also saw a 64 percent increase in fractional aircraft share purchases in the first quarter of 2011. The declining availability of commercial airline flights, especially in smaller markets, has been driving renewed interest in fractional ownership. Small business operators, entrepreneurs, and, increasingly, larger business enterprises are attracted to fractional ownership due to the value it provides.<sup>1</sup>

Cooperative ownership programs are a relatively new concept that has become relevant to the small businesses that have aviation needs but don't quite have the capacity to afford fractional ownership. The concept is similar to a real estate cooperative in that one entity purchases the aircraft and then sells shares to cooperative members. The owner is compensated for putting the cooperative together and managing it. This differs from fractional programs in that cooperatives are owned, managed, and operated by the owner with an interest in maintaining low ownership and operating costs; whereas fractional programs are based on generating/collecting management fees and charging whatever the market will bear.<sup>2</sup> Let's Fly is a notable provider of cooperative ownership programs and specializes in smaller general aviation aircraft that have low buy-in

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<sup>1</sup> <http://www.nbaa.org/news/2011/20110808-fractional-aircraft-ownership-grows.php>

<sup>2</sup> <http://www.aeroteal.com/letsfly/faq.asp>

costs and low hourly rates. It is designed to be a more economical alternative for those who fly a lot of hours in single or twin engine rental aircraft.<sup>3</sup>

Business aviation is projected to experience additional growth in the future. The Honeywell Business Aviation Outlook projects that more than 10,000 new business aircraft valued at over \$250 billion will be delivered through 2022, excluding business liners.

The anticipated changes in the nation's active general aviation fleet, including growth in the number of business aircraft and use of fractional ownership and cooperative ownership arrangements, are likely to impact aviation activity at the airport over the 20-year study period of the master plan update. Recent general aviation trends and projected changes to the nation's active general aviation fleet may be reflected in the projections of aviation demand developed for the airport.

### FAA Aerospace Forecasts

On an annual basis, the FAA publishes forecasts that summarize anticipated trends in most components of civil aviation activity. Each published forecast revisits previous activity forecasts and updates them after examining the previous year's trends in aviation and economic activity. Many factors are considered in the FAA's development of forecasts, some of the most important of which are U.S. and international economic growth and anticipated trends in fuel costs. FAA forecasts generally provide one of the most detailed analyses of historic and forecasted aviation trends and provide the general framework for examining future levels of aviation activity for the nation as well as in specific states and regions.

Examples of measures of national general aviation activity that are monitored and forecasted by the FAA on an annual basis include the following:

- Active Pilots
- Active Aircraft Fleet
- Active Hours Flown

Historic and projected activity in each of these categories is listed in **Table 2-1**. Data presented is based on the most recent available data, contained in *FAA Aerospace Forecasts, Fiscal Years 2013-2033*.

The FAA annually tracks the number of active general aviation aircraft in the U.S. Active aircraft are those aircraft that are currently registered and fly at least one hour during the year. By tracking this information, the FAA is able to identify trends in the total number of active aircraft, as well as the types of aircraft operating in the active fleet. Any changes in the number of active aircraft in the national fleet are generally anticipated to be reflected in similar changes to based

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<sup>3</sup> <http://aviation.about.com/b/2013/01/31/cooperative-ownership-reducing-the-cost-of-ownership.htm>

aircraft in local fleets throughout the country. As shown in Table 2-1, the total active aircraft fleet is forecast to experience a compounded annual growth rate of 0.5 percent between 2012 and 2033. Active general aviation aircraft grew slowly from 2000 to 2012 at a rate of 0.1 percent per year. It should be noted that one of the most significant trends identified by the FAA in these forecasts is the relatively strong growth anticipated in active general aviation jet aircraft. This trend illustrates a movement in the general aviation community towards higher-performing, more demanding aircraft.

**Table 2-1: FAA Aerospace Forecast  
Active Aircraft, Hours Flown, Active Pilots**

Year	Total Active Aircraft	Percent Growth	Total Hours Flown (000s)	Percent Growth	Total Active Pilots	Percent Growth
Historic						
2000	217,533		30,102		625,581	
2006	221,942	2.0%	27,705	-8.0%	597,109	-4.6%
2007	231,606	4.4%	27,852	0.5%	590,349	-1.1%
2008	228,664	-1.3%	26,009	-6.6%	613,746	4.0%
2009	223,876	-2.1%	23,763	-8.6%	594,285	-3.2%
2010	223,370	-0.2%	24,802	4.4%	627,588	5.6%
2011E	220,770	-1.2%	24,570	-0.9%	617,128	-1.7%
2012E	220,670	0.0%	24,599	0.1%	610,576	-1.1%
Forecast						
2017	223,315	0.3%	25,534	1.3%	614,195	0.2%
2022	226,970	0.4%	27,255	1.4%	621,240	0.3%
2032	243,670	1.0%	32,808	2.3%	661,115	0.8%
2033	246,375	1.1%	33,576	2.3%	666,800	0.9%
CAGR						
2000-2012		0.1%		-1.7%		-0.2%
2012-2022		0.3%		1.0%		0.2%
2012-2033		0.5%		1.5%		0.4%

Source: FAA Aerospace Forecast, Fiscal Years 2013 – 2033  
E = Estimate

Growth in general aviation jet aircraft grew by 4.5 percent annually from 2000 to 2012, and is expected to outpace growth in all other segments of the general aviation aircraft fleet, with an annual growth rate of 3.5 percent through 2033.

Because jets are outnumbered nearly 10 to one by single-engine piston aircraft, the growth in jets could not make up for the overall decline of the active general aviation fleet. Still, the overall growth of jets is an important trend.

The increase in general aviation aircraft after 2005 can be largely attributed to a new category of two-seat aircraft. The introduction of Light Sport Aircraft (LSA) is expected to increase the number of pilots and interest in flying. The Experimental Aircraft Association (EAA) worked with the FAA to introduce this new element

which was implemented in September 2004. Much of this growth is the result of already existing, but unregistered (and, therefore, not counted by the FAA), aircraft. The FAA estimates that by 2033, there will be 10,245 sport aircraft, many of which will be already existing ultralights that the owners register as sport aircraft.

The FAA also records the total hours flown by type of aircraft in the active general aviation fleet. As shown in Table 2-1, the total hours flown declined from 2000 to 2012. This decrease occurred primarily in the segments of single and multi-engine piston aircraft, driven by the combination of rising fuel prices and falling pilot numbers. Increases in turbo-prop and jet hours flown, while steady, could not offset the significant decreases in single and multi-engine piston hours flown. A sign of the economic turnaround after recessionary trends, the total hours flown are forecast by the FAA to experience an average annual growth rate of 1.5 percent between 2012 and 2033. The majority of the based aircraft fleet at Greene County – Lewis A. Jackson Regional Airport is composed of single and multi-engine aircraft, so it is reasonable to examine the national trends expected to take place with this segment of aviation.

The overall trend in the number of pilots in recent years has seen important growth after several years of decline. Growth in the number of active pilots was first experienced from 2007 to 2008, then from 2008 to 2010 significant growth occurred, with active pilots increasing by over 6 percent. This growth can be attributed to the advent of the Sport Pilot certification category associated with the introduction of the Light Sport Aircraft category. The 2011 estimate shows a decline in active pilots by nearly 2 percent. This is assumed to be a result of the economic recession that began in 2008 and lasted through the end of the decade. The FAA forecasts the pilot population will average 0.4 percent growth from 2011 to 2032.

### Summary of National General Aviation Trends

The cyclical nature of general aviation activity is illustrated in the historic data presented in this analysis. While general aviation activity experienced rebounded growth during the mid and late-1990s, the terrorist attacks of 2001 and the subsequent economic downturn and recession dampened activity over the last several years. FAA projections of general aviation activity, including active pilots, active aircraft, and hours flown, all show varied growth through the forecast horizon of 2032. Following stalled growth and some declines during 2008 and 2009 related to the global economic recession, most components of general aviation activity are projected to rebound and soon surpass previous activity levels. An important national trend that has the potential to impact general aviation activity at Greene County – Lewis A. Jackson Regional Airport is the growing proportion of multi-engine and jet aircraft in the active general aviation fleet. Growth in fractional and cooperative aircraft ownership programs will also impact demand at the airport. The ability of the airport to accommodate

increasing activity by general aviation multi-engine and jet aircraft will be an important consideration in the master plan update.

## 2.4 Ohio Aviation Trends and Forecast

Aviation activity at the State level is not only impacted by national economic and aviation trends, but it is also directly linked to the health of the Ohio economy. Many factors influence the use of general aviation aircraft by Ohio residents and businesses. These local factors may result in Ohio aviation trends that are divergent from trends identified on the national level.

### Nearby Airports

When considering external factors that could potentially influence the demand at a given airport, one of the first items to examine is competing facilities. A surrounding airport with expanding facilities and services could potentially lure traffic or based aircraft away from competing airports. Conversely, the closure or reduction in capabilities of a nearby airport would have the opposite effect, as experienced by Lebanon-Warren County Airport with the recent closure of Blue Ash Airport in Cincinnati.

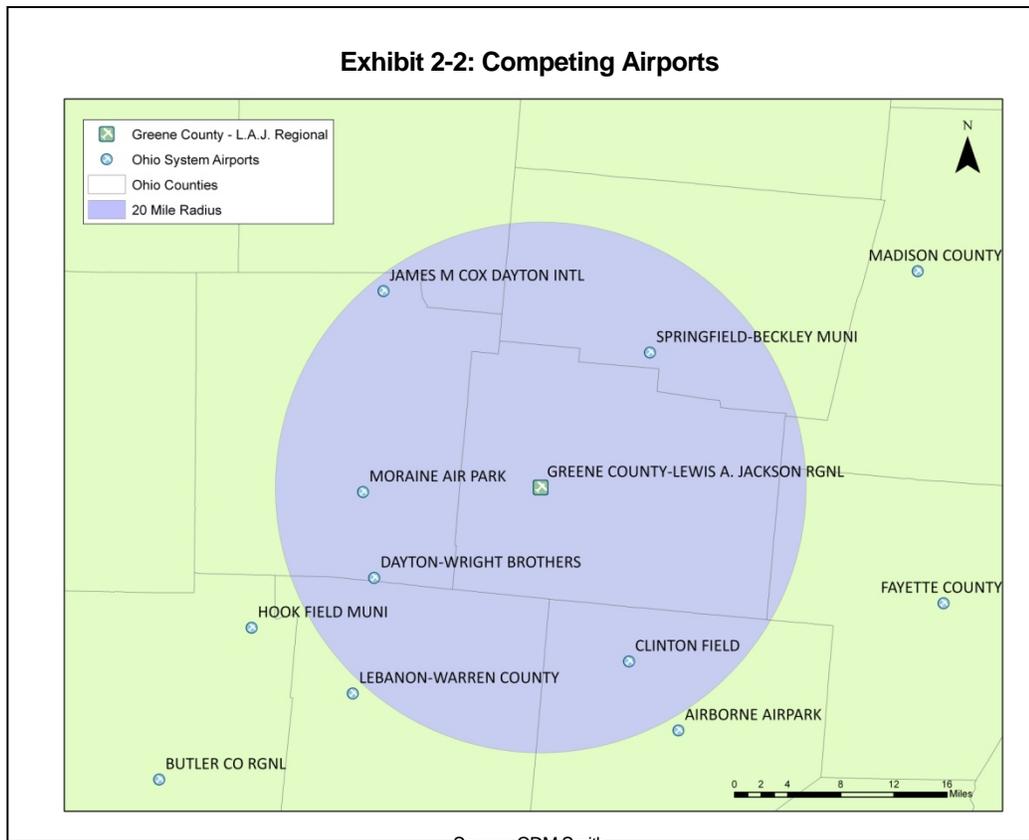
Within a 20 mile radius there are five airports that, by default of location, have a propensity to impact demand at Greene County – Lewis A. Jackson Regional Airport. As shown in **Table 2-2**, these airports range in size and scope from small-community general aviation airports to reliever airports to small-hub primary commercial service airports. Naturally, Greene County – Lewis A. Jackson Regional Airport does not directly compete with James M. Cox Dayton International Airport; however, general aviation activity patterns could be affected by a change in commercial traffic or changes to its general aviation facilities. Dayton-Wright Brothers Airport can be considered the most direct competition to Greene County – Lewis A. Jackson Regional Airport due to its close proximity and similar capabilities. In addition, six more airports lie within a 30 mile radius.

**Table 2-2: Airports within 20 Miles of  
Greene County – Lewis A. Jackson Regional Airport**

FAA ID	Airport Name	Primary Runway Length (feet)	Based Aircraft	Operations	OPBA	Distance to I19 (miles)
SGH	Springfield-Beckley Municipal	9,009	48	21,183	441	13.1
I73	Moraine Airpark	3,500	119	19,188	161	13.4
MGY	Dayton-Wright Brothers	5,000	92	89,045	968	14.3
I66	Clinton Field	3,579	26	27,860	1,072	14.7
DAY	James M Cox Dayton International	10,900	31	109,653	3,537	18.9

Source: FAA 5010, FAA TAF, Airport Records, AirNav

**Exhibit 2-2** illustrates the location of each competing airport in relation to Greene County – Lewis A. Jackson Regional Airport.



### Unmanned Aerial Vehicles

Unmanned aerial vehicles, or UAVs, appear to have significant growth potential in the U.S. based upon the demand for these aircraft and regulatory changes that are planned for the future. Many companies, educational institutions, and government agencies are involved in the development, testing, and production of UAVs. The current and anticipated growth in UAV research is taking hold due to their lower costs when compared to manned-aircraft.

UAVs have made headlines through their military use overseas, but pressure is mounting for their use in domestic U.S. airspace for a number of applications. Customs and border patrol already make use of UAVs along the Mexican and Canadian borders. Numerous law enforcement agencies have applied to the FAA for special operating permits for UAVs. Private companies are also interested in using UAVs for tasks such as taking video of real estate, monitoring pipelines, monitoring livestock, spotting animal poachers, and delivering packages. The FAA has taken a measured approach to allowing UAVs in U.S. airspace out of safety concerns – primarily over how UAVs will be able to avoid colliding with

manned aircraft. But since the law reauthorizing the FAA requires that the agency come up with rules that will safely integrate UAVs into U.S. airspace by 2015, it is obvious that UAV operations will increase in the coming years. Prior to that, the FAA is looking for six sites to use for testing UAV integration. Numerous locations are getting ready to apply for one of these slots in anticipation of the economic windfall such a testing site could bring to a region.

Ohio is in the process of establishing a complex for UAV industry testing, called the Ohio Unmanned Aircraft Systems Center and Test Complex. Located near Dayton, the State of Ohio has funded \$1.5 million and, with Indiana, jointly seeks designation by the FAA as one of six test range sites under a five-year program created by congress to accelerate the safe integration of UAV systems in the National Airspace System. The UAV industry is considered to have great potential for the State and Dayton region (due to proximity to Wright-Patterson AFB). According to a study by the Teal Group, annual worldwide spending on remotely piloted aerial systems will almost double over the next decade. The region has already benefited from the prospect of UAV growth in the region. Defense contractor SAIC (Strategic Analysis and Information Center) has already added more than 200 jobs at its Beavercreek location in Greene County, in large part because of the Air Force's focus on UAV research and development in the area<sup>4</sup>.

Although UAVs – primarily through Wright-Patterson Air Force Base and its many contractors – are expected to be a major area of technological and economic growth in Greater Dayton and Greene County, their impact on Greene County – Lewis A. Jackson Regional Airport is yet unknown. While there are no plans for the airport to directly accommodate UAV activities in coming years, the airport may see an increase in operations related to contractors involved in UAV development. In addition, airspace modifications may also impact operations at the airport if Ohio were to win a UAV test site designation. As of April 2013, the UAV test site decisions have not been announced.

## 2.5 Projections of Aviation Demand

Projections of aviation demand at Greene County – Lewis A. Jackson Regional Airport for the 20-year planning period are presented in the following sections:

- Based Aircraft Projections
- Aircraft Operations Projections
- Critical Aircraft Projections

Various methodologies were examined and used to develop projections of based aircraft and aircraft operations at the airport. The results of these different methodologies are compared and a preferred projection of each is selected. It is

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<sup>4</sup> [http://www.bizjournals.com/dayton/blog/morning\\_call/2012/08/ohio-forms-uav-test-center-partners.html](http://www.bizjournals.com/dayton/blog/morning_call/2012/08/ohio-forms-uav-test-center-partners.html)

important to note that while the projection methodologies are based on demographic data until 2011, the latest 2012 aircraft data was used for the airport. This is done in order to provide more accurate projections for based aircraft and aircraft operations.

### Based Aircraft Projections

Based aircraft are those aircraft that are permanently stored at an airport. Estimating the number and types of aircraft expected to be based at Greene County – Lewis A. Jackson Regional Airport over the 20-year study period will impact the planning for future airport facility and infrastructure requirements. As the number of aircraft based at an airport increases, so too does the aircraft storage required at the facility. Based aircraft at the airport was projected using several different methodologies. Each methodology is summarized in the following sections and the results presented. These results are then compared and a preferred based aircraft projection for the airport selected. The preferred based aircraft projection for the airport will be carried forward in the master planning process and will be used to examine future airport facility needs.

### Population Growth Methodology

Changes in area population are often a key factor that can affect aviation demand in a study area. In many instances there tends to be a direct correlation between an area's population and number of based aircraft in that area. Furthermore, as that area's population grows, corresponding growth is experienced in based aircraft numbers. A based aircraft projection was developed for Greene County – Lewis A. Jackson Regional Airport that reflects the anticipated population growth for Greene County. The results of the population growth methodology are summarized in **Table 2-3**.

**Table 2-3: Based Aircraft Projection Based on Population Growth**

Year	Population	Total Based Aircraft
<u>Current</u>		
2012	161,819	87
<u>Projected</u>		
2017	162,512	87
2022	163,490	87
2032	165,516	88
CAGR	0.1%	0.1%

Source: CDM Smith, Woods & Poole Economics, Inc. 2012, and Airport Records

Using this methodology and continuing the growth rate through the forecast period allows us to project the number of based aircraft. As Greene County's total

population increases from approximately 161,819 in 2012 to 165,516 in 2032, total based aircraft at the airport are projected to increase from 87 in 2012 to 88 in 2032, representing a compound annual growth rate (CAGR) of 0.1 percent.

Other demographic trends were examined as a basis for forecasting future based aircraft and it was determined that these methods would yield results similar to the population growth projection but with slightly different growth rates.

**Growth in FAA Active Aircraft Methodology**

This based aircraft projection methodology is used to develop projections of future based aircraft at Greene County – Lewis A. Jackson Regional Airport by assuming that the growth of based aircraft at the airport will be equal to the rate forecast by the FAA for active general aviation aircraft. The results of the FAA active aircraft methodology are summarized in **Table 2-4**.

**Table 2-4: Based Aircraft Projection Based on FAA Growth of Active General Aviation Aircraft**

	Year	Total Based Aircraft
<u>Historic</u>	2012	87
Active GA Aircraft Growth Rate 2012 - 2032		0.5%
<u>Projected</u>	2017	89
	2022	91
	2032	96

Source: CDM Smith, Airport Records and FAA Aerospace Forecasts FY 2012-2032

This methodology projects the growth of total based aircraft from 87 to 96 by the end of the 20-year planning period.

**Tenant Estimate Methodology**

This methodology incorporates input from the two major business tenants located at the airport, MacAir and Beaver Valley Aviation. Both tenants have expansion plans that include the addition of based aircraft assuming their respective business plans proceed as reported. The results of this methodology are shown in **Table 2-5**.

**Table 2-5: Based Aircraft Projection Based on Tenant Estimates**

Year	Tenant Estimates
<u>Current</u>	
2012	87
<u>Projected</u>	
2017	103
2022	107
2032	113
CAGR	1.3%

Source: Airport Tenant Estimates

This methodology projects the growth of total based aircraft from 87 to 113 by the end of the 20-year planning period.

### Summary of Based Aircraft Projection Scenarios

The results of the population, active aircraft, and tenant estimate methodologies represent low, mid, and high-growth forecasts of total based aircraft at Greene County – Lewis A. Jackson Regional Airport. **Table 2-6** summarizes the results of the three based aircraft projection scenarios utilized in this analysis.

**Table 2-6: Comparison of Based Aircraft Projections**

Year	Low	Mid	High
	Population	Active Aircraft	Tenant Estimate
<u>Current</u>			
2012	87	87	87
<u>Projected</u>			
2017	87	89	103
2022	87	91	107
2032	88	96	113
CAGR	0.1%	0.5%	1.3%

Source: CDM Smith, Woods &amp; Poole Economics, Inc. 2012, Airport Records, and Airport Tenants

As shown, the three projection methodologies resulted in based aircraft forecasts ranging from 88 total based aircraft in the population growth scenario to 113 total based aircraft in the tenant estimate scenario for the out-year of the planning period, 2032. Based aircraft growth rates represented by these forecasts ranged from a CAGR of 0.1 percent to a CAGR of 1.3 percent. The range of these growth rates represent the most realistic growth patterns considering the airport's history

and predicted regional growth estimates and depict low, mid, and high growth scenarios.

**Preferred Based Aircraft Projection**

The preferred based aircraft projection for Greene County – Lewis A. Jackson Regional Airport is based on the active general aviation aircraft methodology. Several parallels can be drawn between this methodology and other demographic and economic indicators discussed earlier in this chapter. The following similarities exist between the chosen methodology, which employs a 0.5 percent CAGR, and other factors:

- This methodology results in a total active aircraft growth rate of 0.5 percent annually, which is consistent with the FAA’s Terminal Area Forecast (TAF) projections. This forecast is within 10 percent of the FAA’s 5-year TAF projection, and within 15 percent of the FAA’s 10-year TAF projection.
- It closely resembles the historic 0.7 percent population growth rate of Greene County over the past 12 years.
- It closely resembles the historical long range growth in national aircraft operations from 1990 – 2010 at 0.5 percent CAGR.

This preferred based aircraft forecast will be part of the analysis in determining the airport’s future facility needs over the forecast period. However, additional facilities would be needed should the growth projected by the airport tenants come about as they expect. Since such aggressive growth is not part of the preferred forecast, these potential tenant demands will be addressed in planning beyond the 20-year horizon. Should the increased tenant aviation activity take place during the forecast period, plans will be in place that can be accelerated to accommodate the increased activity. For the reasons stated above, the medium range scenario of 0.5 percent CAGR is the preferred based aircraft projection for Greene County–Lewis A. Jackson Regional Airport and is presented in **Table 2-7**.

**Table 2-7: Preferred Based Aircraft Projection**

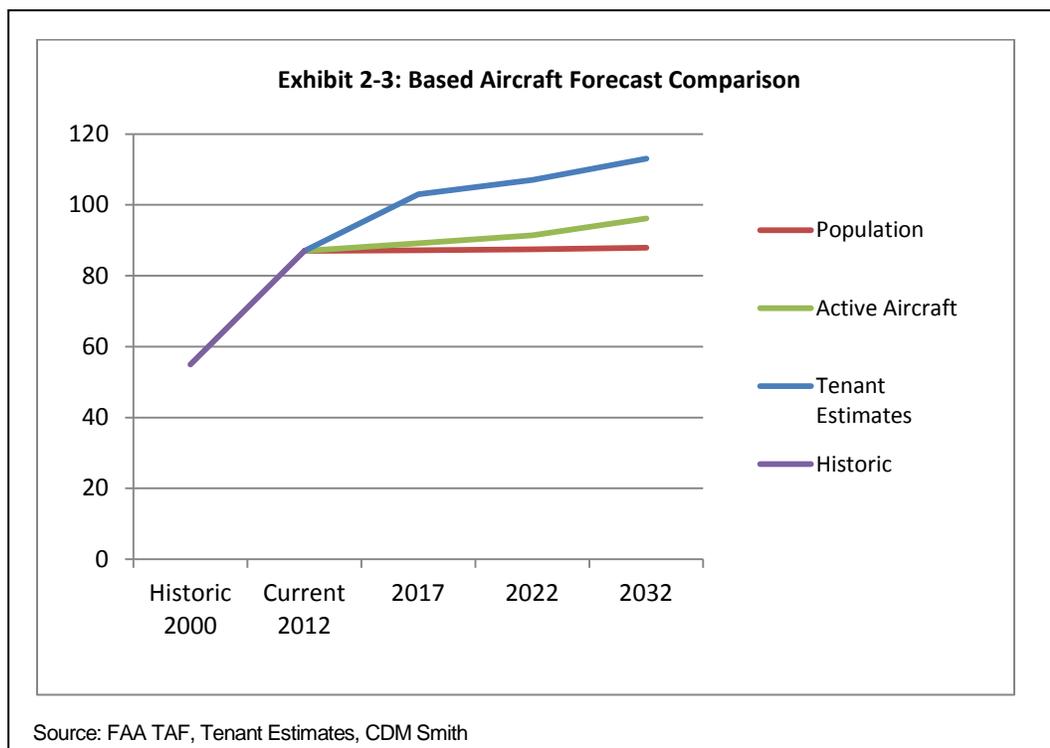
Year	Active Aircraft
<u>Current</u>	
2012	87
<u>Projected</u>	
2017	89
2022	91
2032	96
CAGR	0.5%

Source: CDM Smith and Airport Records

### Comparison to the FAA Terminal Area Forecast (TAF)

The FAA typically reviews airport master planning forecasts for compatibility with their TAF. The current TAF shows no growth among based aircraft through 2032. For many airports similar to Greene County – Lewis A. Jackson Regional Airport, the FAA does not actively forecast growth or decline in future years; rather they continue the status-quo. The FAA TAF, which uses an outdated estimate for 2012, maintains the based aircraft level at 69 throughout the planning period.

The preferred based aircraft forecast for the airport shows a conservative growth of 0.5 percent (CAGR) to the year 2032. This growth will account for additional users/tenants that may decide to store aircraft at the airport or any other development/event that may attract additional interest in the airport, not shown in the TAF. The preferred based aircraft projection is graphically compared to the results of the other methodologies used in this analysis for Greene County – Lewis A. Jackson Regional Airport in **Exhibit 2-3**.



As illustrated in Exhibit 2-3, the active aircraft growth projection methodology, the preferred projection of based aircraft, resulted in a mid range forecast of total based aircraft at the airport when compared to other forecasts of based aircraft. The tenant estimate methodology represents the upper range of based aircraft projections for Greene County – Lewis A. Jackson Regional Airport. The population growth methodology represents the low range forecast.

Although the actual number of total based aircraft at the airport in the future will be determined by a number of factors, the forecast methodologies and scenarios presented in this analysis present a range within which the likely number of aircraft based at the airport will fall. From the methodologies and scenarios examined in this master plan update, the active aircraft growth scenario is selected as the preferred based aircraft projection for use in following analyses.

**Based Aircraft Fleet Mix Projections**

Total based aircraft projected for Greene County – Lewis A. Jackson Regional Airport over the projection period in the preferred based aircraft projection were allocated to five aircraft categories – single engine, multi-engine, helicopter, jet aircraft, and others (ultralight aircraft). The fleet mix projections were developed in part based on the fleet mix percentages found at the airport in 2012. The existing based aircraft fleet mix at the airport is summarized as follows:

- Single engine piston aircraft – 90 percent of total based aircraft
- Multi-engine piston aircraft – 8 percent of total based aircraft
- Helicopter aircraft – 2 percent of total based aircraft
- Small jet aircraft – 0 percent of total based aircraft
- Other aircraft (Ultralights, etc.) – 0 percent of total based aircraft

Using the percentages above, with the exception of small jet aircraft, the preferred based aircraft fleet mix projections are presented in **Table 2-8**. With expected growth in jet aircraft throughout the country, it is reasonable to expect to see some based jet aircraft at Greene County – Lewis A. Jackson Regional Airport in future years. Future growth of jet aircraft was increased to represent 3 percent of total based aircraft, while single engine aircraft was reduced to 86 percent of total based aircraft.

**Table 2-8: Preferred Based Aircraft Fleet Mix Projection**

Year	Single Engine	Multi-Engine	Helicopter	Jet	Others	Total
<u>Current</u>						
2012	78	7	2	0	0	87
<u>Projected</u>						
2017	79	7	2	1	0	89
2022	80	7	2	2	0	91
2032	83	8	2	3	0	96

Source: CDM Smith and Airport Records

## Aircraft Operations Projections

Many different factors influence the number of aircraft operations at the airport, including but not limited to, total based aircraft, area demographics, activity and policies at neighboring airports, and national aviation trends. These factors are examined in the following sections and three methodologies are used to develop projections of future aircraft operations at the airport through the forecast period.

Projections of future operations at Greene County – Lewis A. Jackson Regional Airport are discussed in the following sections:

- Operations Per Based Aircraft Methodology
- FAA Hours Flown Methodology
- Tenant Estimate Methodology
- Comparison of Aircraft Operations Projections
- Preferred Aircraft Operations Projections
- Projected Local/Itinerant Split
- Projected Category Mix

The result of each projection methodology is compared and a preferred projection scenario is selected. Following the selection of the preferred operations projection for the airport, the local/itinerant split at the airport is determined. The preferred aircraft operations projection for the airport will be used to conduct a demand/capacity analysis in which the adequacy of existing airfield facilities will be evaluated to determine if capacity enhancing projects may be required to support future levels of aircraft operations at the airport.

It should be noted that the current number of operations at Greene County – Lewis A. Jackson Regional Airport is an estimate. It was derived as reported on the FAA 5010 Form. Without actual aircraft operation counts, such estimates provide the best available data for most general aviation airports.

### **Operations Per Based Aircraft Methodology**

The operations per based aircraft (OPBA) methodology is recognized by the FAA as an accepted means for relating the total number of aircraft operations to a known variable; in this case, based aircraft. OPBA is calculated by dividing the number of total general aviation operations that occur at an airport by the number of aircraft based at the airport. Total operations at Greene County – Lewis A. Jackson Regional Airport are projected by applying the airport's OPBA ratio to the preferred projection of based aircraft. The results of this projection scenario are summarized in **Table 2-9**.

**Table 2-9: Aircraft Operations Based on Operations per Based Aircraft**

Year	Based Aircraft	OPBA	Operations Projection
<u>Historic</u>			
2012	87	447	38,900
<u>Projected</u>			
2017	89	447	39,800
2022	91	447	40,700
2032	96	447	42,900
CAGR	0.5%		0.5%

Source: Airport Records and CDM Smith

The current OPBA of 447 was held constant throughout the 20-year forecast period and multiplied by the preferred based aircraft projection to obtain the projection of aircraft operations. While the historical average OPBA from 1990 to the present was 371, it was deemed more effective to use the current OPBA as recent airport tenant additions have dramatically increased activity levels, which it seems reasonable to expect to continue into the future. As shown, the operations per based aircraft methodology results in an increase from 38,900 operations to 42,900 operations by end of the planning period. This represents a compound annual growth rate of 0.5 percent.

For comparison, OPBA ratios for all towered airports in Ohio were examined. As shown in **Table 2-10**, several airports had 2012 OPBA ratios similar to that of Greene County – Lewis A. Jackson Regional Airport. The most notable being Springfield-Beckley Municipal Airport and Ohio State University Airport, which have OPBAs of 441 and 424 (less than 5 percent variance), respectively.

### FAA Hours Flown Methodology

The second operations projection methodology was based on the FAA's forecast of active general aviation and air taxi hours flown. It was assumed that the airport would experience growth in operations consistent with growth in the number of hours flown nationally by general aviation and air taxi aircraft, according to FAA forecasts. Growth in hours flown is expected to increase approximately 1.5 percent annually through the planning period. Applying that growth rate to airport operations through the forecast period results in growth from 38,900 operations in 2012 to 52,400 operations by 2032, as shown in **Table 2-11**.

**Table 2-10: OPBA of Towered Airports in Ohio**

FAA ID	Airport	Operations	Based Aircraft	OPBA	Percent Variance
ILN	Airborne Airpark	1,000	-	N/A	
CLE	Cleveland-Hopkins Intl	188,286	33	5,706	-1178%
DAY	James M Cox Dayton Intl	109,653	48	2,284	-412%
BKL	Burke Lakefront	64,358	31	2,076	-366%
CMH	Port Columbus Intl	135,374	83	1,631	-266%
LCK	Rickenbacker Intl	39,424	28	1,408	-216%
TZR	Bolton Field	74,511	82	909	-104%
YNG	Youngstown-Warren Rgnl	37,276	49	761	-71%
TOL	Toledo Express	40,847	66	619	-40%
CAK	Akron-Canton Rgnl	80,528	147	548	-24%
CGF	Cuyahoga County	67,662	133	509	-15%
<b>SGH</b>	<b>Springfield-Beckley Muni</b>	<b>21,183</b>	<b>48</b>	<b>441</b>	<b>0%</b>
<b>OSU</b>	<b>Ohio State University</b>	<b>68,226</b>	<b>161</b>	<b>424</b>	<b>4%</b>
LUK	Cincinnati Muni Airport Lunken Field	65,511	193	339	23%
MFD	Mansfield Lahm Rgnl	19,293	72	268	39%

Source: FAA TAF and CDM Smith

**Table 2-11: Aircraft Operations Based on FAA Hours Flown Forecast**

Year	FAA Active General Aviation and Air Taxi Hours Flown (000s)	Operations Projection
<u>Historic</u>		
2012	24,599	38,900
<u>Projected</u>		
2017	25,534	41,900
2022	27,255	45,100
2032	32,808	52,400
CAGR	1.5%	1.5%

Source: CDM Smith, Airport Records, FAA Terminal Area Forecast, FAA Aerospace Forecasts 2012-2032.

### Tenant Estimate Methodology

Similar to the based aircraft projection methodology using tenant input, this methodology also incorporates input from both MacAir and Beaver Valley Aviation to project annual aircraft operations. Assuming their respective business plans (as previously discussed) proceed as expected, both tenants plan to add

more based aircraft to accommodate expanded training programs. Naturally, a higher volume of aircraft operations are associated with the increase in based aircraft, which are estimated by the airport tenants. The results of this methodology are shown in **Table 2-12**.

**Table 2-12: Aircraft Operations based on Tenant Estimates**

Year	Operations Projection
Historic	
2012	38,900
Projected	
2017	58,000
2022	61,200
2032	66,000
CAGR	2.7%

Source: CDM Smith, Airport Tenant Estimates

Using tenant estimates, operations are projected to increase from 38,900 operations in 2012 to 66,000 operations in 2032. This represents an annual growth rate of 2.7 percent.

**Comparison of Aircraft Operations Projections**

The results of the different aircraft operations projection scenarios examined in this analysis are summarized and compared to each other in **Table 2-13**.

**Table 2-13: Summary of Operations Projections**

	Year	OPBA	FAA Hours Flown Forecast	Tenant Estimates
<u>Historic</u>	2012	38,900	38,900	38,900
<u>Projected</u>	2017	39,800	41,900	58,000
	2022	40,700	45,100	61,200
	2032	42,900	52,400	66,000
CAGR		0.5%	1.5%	2.7%

Source: CDM Smith, Airport Records and FAA Terminal Area Forecast

As shown in Table 2-13, the different methodologies resulted in a CAGR ranging from 0.5 percent for the OPBA methodology to 2.7 percent in the tenant estimate methodology. In these projection scenarios total aircraft operations at the airport in 2032 are projected to range between about 42,900 and 66,000 total aircraft operations.

### Preferred Aircraft Operations Projections

The OPBA forecast methodology is selected as the preferred projection of aircraft operations for the airport. This methodology results in a reasonable 0.5 percent CAGR. Given the long history of static growth in operations at the airport, a more conservative 0.5 percent CAGR is chosen and does not result in an unrealistic increase in OPBA by 2032. The FAA TAF projects no growth through 2032, which is considered unrealistic for an airport with the activity found at Greene County – Lewis A. Jackson Regional Airport. The FAA hours flown methodology projects a growth of 1.5 percent annually, which is considered high and exceeds the FAA’s recommended variance from the TAF in the five and 10-year forecast periods. Similarly, the tenant estimate methodology also exceeds the recommended TAF variance by an even greater margin. Therefore, the OPBA forecast methodology is the preferred operations forecast for the 20-year planning period.

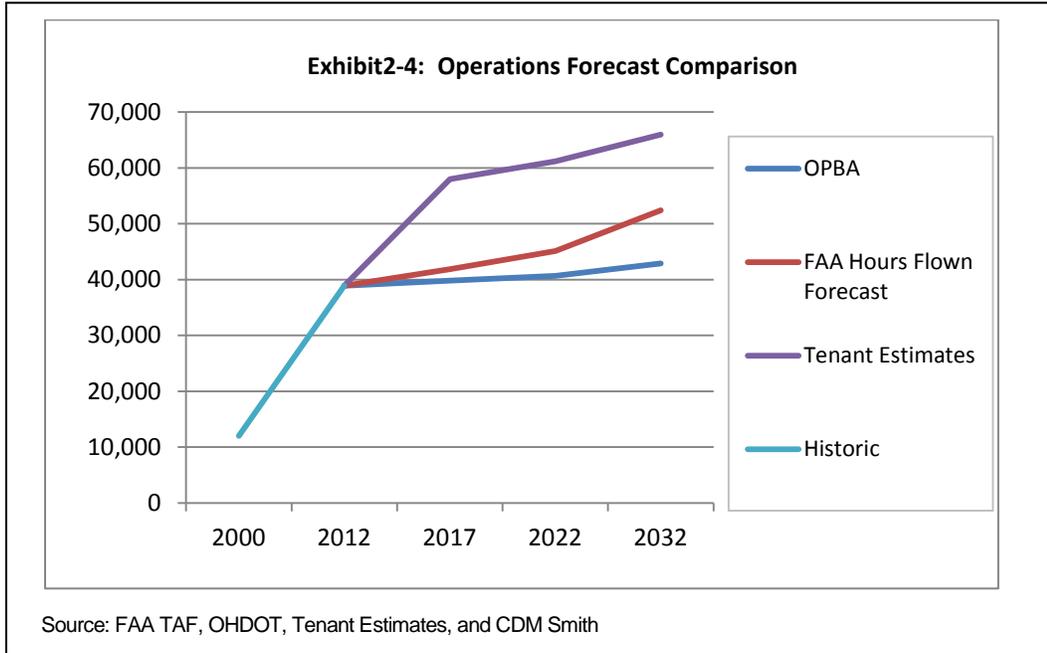
However, to address the growth envisioned by the tenants, additional facility needs will be addressed beyond the 20-year planning period that can be accelerated should the tenant activity materialize during the planning timeframe. For these reasons, the OPBA methodology is the preferred forecast, as shown in **Table 2-14**.

**Table 2-14: Preferred Operations Projection**

Year	Total Operations
<u>Historic</u>	
2012	38,900
<u>Projected</u>	
2017	39,800
2022	40,700
2032	42,900
CAGR	0.5%

Source: Airport Records and CDM Smith

In the preferred projection scenario, total aircraft operations at Greene County – Lewis A. Jackson Regional Airport are projected to increase from approximately 38,900 in 2012 to nearly 43,000 in 2032, representing a CAGR over the projection period of approximately 0.5 percent. The master plan update’s preferred projection of aircraft operations is compared to other projections in **Exhibit 2-4**.



The preferred projection of aircraft operations identified for the master plan update represents a conservative estimate of future activity at Greene County – Lewis A. Jackson Regional Airport when compared to the other projection scenarios. The tenant estimate methodology represents the upper range of the projections. The OPBA methodology takes into account some of the potential downside risks of operations at the airport, such as the possibility of the Air Force cutting back on their flight training program run by MacAir, or a reduction in flights by the Aero Club should the economy experience a downturn.

It should be noted that the preferred aircraft operations projection for the airport represents an unconstrained projection based on existing market conditions and presumes that airport development needed to accommodate growth will be undertaken in a timely manner. Direct potential impacts to facilities will be discussed in following chapters.

**Comparison of Preferred Operations Projection to FAA TAF**

This methodology results in a total active aircraft growth rate of 0.5 percent annually through 2032, which is consistent with the FAA’s TAF projections. This forecast is within 10 percent of the FAA’s 5-year TAF projection, and within 15 percent of the FAA’s 10-year TAF projection.

**Projected Local/Itinerant Split**

An important consideration when examining historic and projected airport operations at an airport is whether they are local or itinerant. Local operations are

those operations conducted by aircraft remaining in the airport's traffic pattern. It should be noted that almost all local operations are training-related. Itinerant operations are those conducted by aircraft coming from outside the traffic pattern. Changes in the local/itinerant operations split at an airport are an indicator of changes in the nature of activity occurring at the facility.

In the past, operations have averaged 11 percent classified as itinerant and 89 percent as local. Historically, these percentages have shifted from an itinerant/local split of about 20/80 percent range that remained steady through the 1990s. From year to year, the itinerant/local split represents the consistent nature of operations. Normally, an increase in flight training would drive up the percentage of local operations at an airport. However, in the case of Greene County – Lewis A. Jackson Regional Airport, nearly nine out of 10 of its operations are already local. Since not every training flight is a local operation, it seems unreasonable that the airport's share of local flights would increase further.

These percentages will be used in projecting the itinerant/local split of operations in future planning years. **Table 2-15** shows the projected split of itinerant and local operations for the planning period is expected to remain the same as in recent years.

**Table 2-15: Itinerant and Local Split Projections**

	Year	Itinerant Operations	Local Operations	Total Operations
<u>Historic</u>	2012	3,900	35,000	38,900
<u>Projected</u>	2017	4,400	35,400	39,800
	2022	4,500	36,200	40,700
	2032	4,800	38,100	42,900
Percentage Split		10.8%	89.2%	100%

Source: CDM Smith, Airport Records, FAA Terminal Area Forecast

### Projected Operations Category Mix

In addition to developing projections of total aircraft operations for the airport, it is important in the master planning process to determine the types of operations that are anticipated. Using historic estimates as a basis, the percentage of total operations conducted by the major categories of operations were estimated and applied to the preferred projections of aircraft operations at the airport.

The historical percentage of operations conducted by each major category at Greene County – Lewis A. Jackson Regional Airport were obtained through airport records as presented in Chapter 1. The average mix of military, air taxi and

air carrier operations from 2012 was assumed to remain constant throughout the projection period. However, itinerant and local general aviation projections are projected to grow steadily throughout the projection period. **Table 2-16** shows the operations mix projection for each category of operation.

**Table 2-16: Operations Category Mix**

Year	General Aviation		Military		Air Taxi <sup>1</sup>	Air Carrier	Total
	Itinerant	Local	Itinerant	Local			
<u>Historic</u>							
2011	2,400	35,000	0	0	0	0	37,400
2012	3,900	35,000	0	0	0	0	38,900
<u>Projected</u>							
2017	4,400	35,400	0	0	0	0	39,800
2022	4,500	36,200	0	0	0	0	40,700
2032	4,800	38,210	0	0	0	0	42,900
Average % of Total	10.8%	89.2%	0.0%	0.0%	0.0%	0.0%	100.0%

Source: Category distribution: 2011-2012 (tower records),  
<sup>1</sup> Air Taxi category represents non-scheduled or for-hire service on aircraft with 60 seats or fewer

**Projected Operational Fleet Mix**

Once projections of preferred based aircraft fleet mix and operation category mix have been made for the airport, it also is important in the master planning process to determine the operational fleet mix that is anticipated. By applying the preferred fleet mix projections by aircraft type as a percentage of total projected based aircraft to the preferred total operations projection, operations by aircraft type can be projected.

The mix of single-engine, multi-engine, helicopter, jet, and other aircraft types from 2012 was, for the most part, assumed to remain constant throughout the projection period. However, the percentage of single-engine aircraft was reduced to accommodate growth in jet aircraft. **Table 2-17** shows the operations fleet mix projection for each category of aircraft.

**Table 2-17: Operational Fleet Mix**

Year	Single-Engine	Multi-Engine	Helicopter	Jet	Others	Total BA	Total Ops
Current							
2012	34,600	3,100	900	300	-	87	38,900
Projected							
2017	34,600	3,200	800	1,200	-	89	39,800
2022	35,400	3,300	800	1,200	-	91	40,700
2032	37,300	3,400	900	1,300	-	96	42,900

Source: CDM Smith

## 2.6 Critical Aircraft

The development of airport facilities is impacted by both the demand for those facilities, typically represented by total based aircraft and operations at an airport, as well as the type of aircraft that will make use of those facilities. In general, airport infrastructure components are designed to accommodate the most demanding aircraft, referred to as the critical aircraft, which will utilize the infrastructure on a regular basis. The factors used to determine an airport's critical aircraft are the approach speed and wing span of the most demanding class of aircraft that is anticipated to perform at least 500 annual operations at the airport during the planning period.

The FAA groups aircraft into Aircraft Categories and Airplane Design Groups based on their approach speed and wingspan, respectively. The criteria for these categories are presented in **Table 2-18**.

**Table 2-18: Aircraft Categories and Design Groups**

Aircraft Approach Category		
Category	Approach Speed	Example
A	< 91 knots	Cessna 172
B	91 to < 121 knots	King Air 200
C	121 to < 141 knots	B737
D	141 to < 166 knots	B767
E	166 knots or more	SR-71
Airplane Design Group		
Group	Wingspan	Example
I	< 49 feet	Cessna 172
II	49 to < 79 feet	King Air 200
III	79 to < 118 feet	B737
IV	118 to < 171 feet	B767
V	171 to < 197 feet	B747
VI	197 to < 262 feet	A380

Source: FAA

After identifying an airport's critical aircraft it is then possible to determine the facility's Airport Reference Code (ARC). The ARC is a coding system that relates airport design criteria to the operational and physical characteristics of the airplanes that are intended to operate at an airport. An airport's ARC is a composite designation based on the Aircraft Approach Category and Airplane Design Group of that airport's critical aircraft. Based on discussions with the airport manager and the FBO operator, both of whom stated that numerous turboprop aircraft such as Pilatus and King Airls operate at the airport, as well as

occasional Learjets and Cessna Citations, it was determined that the critical aircraft for the airport would not change during the planning period.

An analysis of IFR data (12 months starting October 2011) validates these claims, as instances of B-II aircraft operations were recorded at Greene County – Lewis A. Jackson Regional Airport in this time frame. IFR data, which consist of flight plans filed by pilots operating under instrument flight rules, provides flight information such as origin, destination, aircraft type, N-number, date, and time of flight. This data is recorded and made commercially available through an online database. This provides a sampling of some of the traffic into and out of an airport. However, the data cannot be used to reliably estimate the number of operations. The vast majority of general aviation flights do not file an IFR flight plan (nor are they required to), so only a small portion of all the flights into and out of an airport are captured in this database. Even some flights that file an IFR flight plan may decide to cancel that flight plan if the visibility conditions at their destination are good enough to allow them to land at the airport without an IFR clearance. Additionally, for privacy and security reasons, many business aircraft operators opt out of publicly disclosing their IFR flight plans, which removes their flights from the data. The B-II aircraft operations found in IFR data can be considered a baseline, or minimum, number of operations whereas the actual number is higher.

For Greene County – Lewis A. Jackson Regional Airport, regular operations by a variety of B-II aircraft such as the Beechcraft King Air and Cessna Citation justifies maintaining the current ARC of B-II.

## 2.7 Summary

It is anticipated that Greene County – Lewis A. Jackson Regional Airport will see moderate growth during the 20-year planning period. Market area demographic trends indicate that the airport will slightly outpace Ohio growth trends in general aviation and fall slightly behind trends in National growth. Based aircraft are expected to increase from approximately 87 aircraft to 98 aircraft by 2032. The airport will also see an increase in the number of operations. By the end of the planning period, nearly 43,000 operations could be expected. It is important to note that this is an unconstrained projection. Additional operations may be realized in future years should addition aviation businesses locate on or around the airport. Following sections of the Master Plan will explore the facility implications of accommodating the projected demand. **Table 2-19** summarizes the projections contained in this chapter.

**Table 2-19: Summary of Projections**

	Year	Based Aircraft	Itinerant Operations	Local Operations	Total Operations
<u>Current</u>	2012	87	3,900	35,000	38,900
<u>Projected</u>	2017	89	4,400	35,400	39,800
	2022	91	4,500	36,200	40,700
	2032	96	4,800	38,100	42,900

Source: CDM Smith

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## Facility Requirements

A key step in the Master Plan process is developing requirements for airport facilities, which will allow for airside and landside evolution over the term of the planning period. By comparing the existing conditions of the airport to forecast aviation activity based upon both existing and future aircraft usage, the requirements for runways, taxiways, aprons, terminal, and other related facilities to accommodate growth over the short, intermediate, and long-term planning periods can be determined. Demand-capacity analyses aid in the identification of airport deficiencies, surpluses, and opportunities for future development.

This chapter will assess the capacity of various airport components at Greene County – Lewis A. Jackson Regional Airport (I19) and compare them with the forecasted demand presented in the previous chapter. Further analysis will identify the facilities that will be necessary to meet the forecasted demand, the plans for which are presented in subsequent chapters. Full consideration is given to the critical aircraft, presented in the previous chapter, and the airport's anticipated role which will yield design criteria for the airport and associated facilities.

### 3.1 Airport Design Criteria and Classification

The critical aircraft was determined by considering the families of aircraft, having similar performance and dimensional characteristics, expected to use the airport on a regular basis. According to the forecasts, the most demanding aircraft expected to use Greene County – Lewis A. Jackson Regional Airport on a regular basis is the Beechcraft King Air aircraft. This aircraft operates within Approach Category B and Design Group II. All existing and planned facilities associated with the airport should meet the requirements for ARC B-II.

The FAA's National Plan of Integrated Airport System (NPIAS) currently classifies Greene County – Lewis A. Jackson Regional Airport as a general aviation airport. Airports 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 airports if they account for enough activity (having usually at least 10 based aircraft) and are at least 20 miles from the nearest other NPIAS airport. These 2,563 airports, with an average of 30 based aircraft, account for 34 percent of the nation's general aviation fleet. They are the closest source of air transportation for about 19 percent of the population and are

particularly important to rural areas. These airports support a number of critical functions ranging from flight training, emergency preparedness, law enforcement, and many other functions that cannot be supported efficiently or economically at primary airports<sup>1</sup>.

The following sections will evaluate the airfield and landside requirements to meet the needs of the airport throughout the 20-year planning period.

## 3.2 Airfield Requirements

### Airfield Capacity Analysis

The generally accepted airport capacity model is provided in FAA AC 150/5060-5 *Airport Capacity and Delay*. The following key terms are relative to the discussion of capacity:

- *Demand* – the magnitude of aircraft operations to be accommodated in a specified period of time, provided by the forecasts.
- *Capacity* – a measure of the maximum number of aircraft operations that can be accommodated on an airport in one hour.
- *Annual Service Volume* – or ASV, a reasonable estimate of the airports annual capacity.
- *Delay* – the difference between the actual time it takes an aircraft to operate on the airfield and the time it would take the aircraft if it were operating without interference from other aircraft, usually expressed in minutes.

Several aspects of capacity will be examined in this report, with this section focusing on the runway's ability to handle current and forecasted aviation operations.

Using methodologies found in the Advisory Circular on capacity and demand, Greene County – Lewis A. Jackson Regional Airport has an annual service volume of approximately 230,000 operations. This capacity value matches the ASV from the previous Master Plan with no changes in assumptions since its completion.

The forecast for annual operations is expected to increase from 38,900 (2012) to 66,000 (2032) operations by the end of the forecast period. **Table 3-1** compares expected demand to estimated capacity.

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<sup>1</sup> [http://www.faa.gov/airports/planning\\_capacity/npas/reports/media/2013/npas2013Narrative.pdf](http://www.faa.gov/airports/planning_capacity/npas/reports/media/2013/npas2013Narrative.pdf)

**Table 3-1: Aviation Demand Capacity Analysis**

	2012	2017	2022	2032
ASV (C)	230,000	230,000	230,000	230,000
Forecasted Operations (D)	38,900	39,800	40,700	42,900
Percent of Capacity (D ÷ C)	17%	17%	18%	19%

Source: CDM Smith

Note: C = Capacity; D = Demand

According to the FAA, the following guidelines should be used to determine at what point certain actions to address capacity shortfalls should be taken.

- 60 percent of ASV: Threshold at which planning for capacity improvements should begin.
- 80 percent of ASV: Threshold at which planning for improvements should be complete and construction should begin.
- 100 percent of ASV: Airport has reached the total number of annual operations (demand) the airport can accommodate, and capacity-enhancing improvements should be made to avoid extensive delays.

Based on the airport's projected activity, it is not expected to exceed 20 percent of its ASV during the planning period. This indicates that, on an annual basis, the airport's runway and taxiway exit configuration is adequate until at least 2032. The next step is to examine that airport's ability to handle peak demands as determined by its hourly capacities.

The Visual and Instrument Flight Rule (VFR and IFR) hourly capacities for the runway were based on the following assumptions:

1. *Runway-use Configuration.* The appropriate runway use configuration (No. 1) was taken from Figure 2-1 in the Advisory Circular 150/5060-5, *Airport Capacity and Delay*.
2. *Percent Arrivals.* Arrivals equal departures.
3. *Percent of Touch and Go's.* While the airport does not have an air traffic control tower (ATCT), which usually maintains a count of touch-and-go operations, it is estimated that as much as 50 percent of the total operations are touch and go's. This is within the range provided in Table 2-1 of the Advisory Circular.
4. *Taxiways.* The airport has a dedicated full-length parallel taxiway serving the primary runway and it presents no crossing problems. It is assumed that this taxiway provides ample runway entrances and exits. Note that adequate space on the taxiway for engine run-ups is not part of the

estimation of hourly capacities. This issue is addressed later in this chapter.

5. *Airspace Limitations.* Greene County – Lewis A. Jackson Regional Airport operates under Class E airspace that begins 700 feet off the ground. Approximately four nautical miles to the northwest is the Class D airspace of Wright-Patterson Air Force Base. The Class C airspace of Dayton International starts six nautical miles to the northwest. These controlled airspace areas do not adversely impact flight operations or otherwise restrict aircraft which could operate at the airport.
6. *Runway Instrumentation.* The airport has two published approach procedures with vertical guidance (APV) which allow access during inclement weather conditions. The best minimums are a 250-foot ceiling and one mile of visibility to Runway 25.
7. *Mix Index.* A mathematical expression (percent of Class C aircraft plus 3 times the percent of Class D aircraft) used to categorize the fleet of aircraft using the airport, is estimated to fall between 0 and 20 percent based on existing fleet usage and will continue to be in this range in future years. This mix index range is used as a reference for determining ASV. It is estimated that approximately 1 percent of the airport's total operations are conducted by jet aircraft. By the end of the planning period, the number of jet operations is expected to increase; however, the overall percentage will remain relatively low.

Using these assumptions, under optimum conditions, Greene County – Lewis A. Jackson Regional Airport would have a VFR hourly capacity of 98 operations, and an IFR capacity of 59 operations.

To develop a portrait of peak operational demands, a peaking factor was applied to the preferred operational forecasts found in Chapter 2. As explained in Chapter 2, standard airport planning practices use the peak hour of the average day of the peak month (ADPM) as the peak level to plan for instead of the absolute peak level that occurs throughout the entire year. Historical operations data available from the FAA Air Traffic Activity Systems (ATADS) database was used to identify the peak month activity at general aviation airports similar to Greene County – Lewis A Jackson Regional Airport. Based on monthly data for federal fiscal years 2000 to 2012, the peak month averages approximately 12 percent of the annual operations. The actual month with the peak has included May, June, July, August, September, and October, four of which have 31 days in them. Therefore, to determine the ADPM, the peak month value was divided by 30.6. The peak hour was assumed to equal 15 percent of the ADPM based upon observation and consultant experience at airports with similar activity levels and roles. The results of applying these peaking figures to the preferred operational forecast are shown in **Table 3-2**. The peak hour demands are then compared to the peak hour capacities for both VFR and IFR conditions.

**Table 3-2: Peak Hour Demand versus Capacity**

Demand	Operations			
	2012	2017	2022	2032
Annual	38,900	39,800	40,700	42,900
Peak Month	4,668	4,776	4,884	5,148
ADPM	152	159	163	172
Peak Hour	22	24	24	26
Capacity				
Peak Hour (VFR / IFR)	98 / 59	98 / 59	98 / 59	98 / 59

Source: CDM Smith

Using this approach, it is estimated that peak hour demand at the airport will range from 22 operations in 2012 to 26 in 2032. As the overall number of aircraft serving the airport rises, the number of aircraft operating within the peak hour will rise correspondingly. The peak hour capacity ranges from 59 (IFR) to 98 (VFR) operations throughout the planning period. The table above shows that the existing and future airfield capacities for both VFR and IFR conditions at the airport should remain above the projected peak hour demand, providing there are no other problems that create delays.

Based upon these two analyses and existing demand criteria, no additional capacity projects for the runway and taxiway exit system will be needed during the planning period. The peak hour demand will be further analyzed to assess other capacity and delay issue at the airport in later sections.

### Runway Orientation

The single most important criterion for runway orientation is wind coverage. The runways should provide the maximum opportunity for takeoff and landing into the wind. The FAA recommends the crosswind coverage of the runway system to be at least 95 percent. The percent wind coverage is computed on the basis of the crosswind component not exceeding 10.5 knots (12 mph) for Airport Reference Codes (ARC) A-I and B-I; 13 knots (15 mph) for ARC A-II and B-II; and 16 knots (18 mph) for ARC C-I through D-II.

As discussed in chapter one, in order to determine wind conditions for Greene County – Lewis A. Jackson Regional Airport, weather information was obtained from nearby James M. Cox Dayton International Airport, located approximately 26 miles to the northwest. Wind speed and direction data from this location indicates that Runway 7-25 provides adequate crosswind coverage and future plans for a crosswind runway do not need to be considered. Regardless of wind coverage

results, the runway could not be reoriented within the confines of the existing airport property.

### Runway Length

Runway length requirements for Greene County – Lewis A. Jackson Regional Airport were accessed in accordance with FAA AC 150/5325-4B, “Runway Length Requirements for Airport Design”. The runway at Greene County – Lewis A. Jackson Regional Airport is 4,500 feet long and 75 feet wide. The minimum runway length requirement is based upon several factors including airport elevation, average temperature, and type of aircraft expected to use the runway on a regular basis. The airport’s published altitude is 949 feet Mean Sea Level (MSL) and the mean daily maximum temperature of the hottest month is 83° Fahrenheit.

Using these criteria, runway length requirements are presented in **Table 3-3**.

<b>Table 3-3: Runway Length Requirements for Airport Design Greene County – Lewis A. Jackson Regional Airport</b>	
Airport Elevation .....	949 feet
Mean daily maximum temperature of the hottest month .....	83°
Maximum difference in runway centerline elevation .....	32 feet
Length of haul for airplanes of more than 60,000 pounds .....	1,000
<b>RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN</b>	
Small airplanes with approach speeds of less than 30 knots .....	330 feet
Small airplanes with approach speeds of less than 50 knots .....	880 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes .....	2,760 feet
95 percent of these small airplanes .....	3,280 feet
100 percent of these small airplanes .....	3,890 feet
Small airplanes with 10 or more passenger seats .....	4,330 feet
Airplanes of 60,000 pounds or less	
75 percent of these airplanes at 60 percent useful load .....	5,060 feet
75 percent of these airplanes at 90 percent useful load .....	6,640 feet
100 percent of these airplanes at 60 percent useful load .....	5,740 feet
100 percent of these airplanes at 90 percent useful load .....	8,440 feet
Airplanes of more than 60,000 pounds .....	6,350 feet
Reference: AC 150/5325-4A, Runway Length Requirements for Airport Design	

The airport currently has sufficient runway length to accommodate all of the small aircraft with less than 10 passenger seats as well as more than 10 passenger seats. Larger aircraft, however, may have to reduce their payload in order to takeoff within the 4,500 feet available. For the purposes of this report, airplanes

less than 60,000 pounds with a trip length of 1,000 miles were also evaluated for runway length requirements. Within these parameters, the present runway length available at Greene County – Lewis A. Jackson Regional Airport would have to be extended in order to accommodate these aircraft.

The previous Airport Layout Plan (ALP), completed in 1996, shows an ultimate runway length of 5,000 feet in order to meet the needs of a broader user base. However, given the operating fleet at this time, eligibility for FAA participation would be limited to 4,500 feet and alternative funding would be required to construct the additional 500 feet.

The need for additional runway length was discussed with the Airport Authority and airport management, and it was determined that there is likely no current need to extend the runway. However, the Airport Authority wishes to continue to depict an extension of the runway by 500 feet to a length of 5,000 feet to continue to protect airspace for a possible future runway extension. This is reflected in the ALP with a drawing labeled Future Airport Layout Plan showing the existing runway with planned development in the next 20 years and a drawing labeled Ultimate Airport Layout Plan showing the runway extended to 5,000 feet, with related development expected to occur beyond the 20-year planning horizon.

### Runway Width

The width of a runway is determined by the critical aircraft and the instrumentation available for the approach. The minimum width for a B-II runway expected to have approach visibility minimums not lower than one mile is 75 feet. The runway at Greene County – Lewis A. Jackson Regional Airport is 75 feet wide and is consistent with design standards for category B-II group aircraft.

### Runway Strength

There are several factors which influence the strength of pavement required to provide satisfactory service. These factors include aircraft loads, frequency and concentration of operations, and the condition of subgrade soils. Runway pavement strength is typically expressed based on common landing gear configurations. An example aircraft for each type of gear configuration are as follows:

- *Single-wheel* – each landing gear unit has a single tire, example aircraft include light general aviation aircraft and some business jet aircraft.
- *Dual-wheel* – each landing gear unit has two tires, example aircraft include the Lear 25, Boeing 737, Boeing 727, MD-80, CRJ 100/200, and the Dash 8.

- *Dual-tandem* – each main landing gear unit has four tires arranged in the shape of a square, example aircraft include the Boeing 707 and the KC135.
- *Double dual-tandem* – the main landing gear units have the same configuration as the dual-tandem configuration, however, there are twice as many main gear units. Boeing 747 aircraft have a double dual-tandem landing gear configuration.

The newest portion of the runway (831 feet) at Greene County – Lewis A. Jackson Regional Airport currently has a load bearing weight capacity of 30,000 pounds for a single wheel main landing gear and 37,000 pounds for a dual wheel, which meets the forecast critical/design aircraft and B-II fleet mix. While the original runway pavement used a standard ODOT pavement design that was supposed to provide a strength of 30,000 pounds for single wheel main wheel configurations, the actual pavement strength is unknown. The pavement should be tested to determine pavement strength and, if necessary, the pavement strength should be increased to meet the specified design aircraft. Regardless of the strength, efforts to repair and maintain the runway pavement should be completed as necessary. Projects to maintain the integrity of the runway pavement throughout the 20-year planning period are a part of the master plan update and are identified in the Capital Improvement Plan (CIP) in the last chapter of this report.

## Taxiways

A taxiway is a defined path established for taxiing aircraft from the runway to a parking position, or from one part of the airport to another. It is recommended that an airport's primary runway be served by a full-length parallel taxiway allowing aircraft to enter or exit the runway expeditiously as possible.

At present, Runway 7-25 is served by a full-length parallel taxiway and is consistent with design standards for category B-II group aircraft. The taxiway pavement currently has a load bearing weight capacity of 30,000 pounds for a single wheel main landing gear and 37,000 pounds for a dual wheel landing gear.

Runway 7-25 and the parallel taxiway are connected by five entrance/exit taxiways. The entrance/exit taxiways are located near each runway end, two approximately one-quarter of the total runway length from each end, and one located approximately midfield leading to the main aircraft parking ramp. All of the entrance/exit taxiways except one are perpendicular to the runway. The entrance/exit taxiway that connects the main apron directly to the runway is acute-angled. The terminal area is linked to the parallel taxiway by the main aircraft parking apron as well as other taxiways that connect hangar areas to the taxiway/runway system.

The width of the parallel taxiway is 35 feet and the entrance/exit taxiways are of various widths between 35 and 40 feet. In order to accommodate design group II aircraft, FAA criterion calls for a taxiway width of 35 feet. Currently, all taxiway widths meet FAA and ODOT criteria.

As discussed in Chapter 1, there is a small aircraft holding apron at the end of the west parallel taxiway, near the end of Runway 7. Pilots can use this apron to conduct pre-flight checks on their aircraft without blocking other aircraft on the taxiway. Unfortunately, no such holding apron is available near Runway 25. Even during the periods of normal operation, the airport accommodates a significant number of regular (non-Air Force) flight training operations and aircraft are often backed up on the east parallel taxiway to the Runway 25 end. This is due to the slower nature of student pilots conducting run-ups as well as other aircraft that may hold on the taxiway to complete their pre-flight checklists or are awaiting IFR clearances. This delays every departure, resulting in a backup of aircraft, normally from one to three. It is recommended that a similar type of holding apron be constructed on the taxiway near Runway 25.

MacAir suggested a hold apron for up to seven aircraft located between the runway and parallel taxiway near Runway 25 end. Unfortunately, such a facility could not be constructed at that location because of FAA safety and required set back distances from the runway. Instead, a smaller hold apron located north of the parallel taxiway will be considered, with a bypass taxiway to aid those pilots who do not need to hold and may not be able to pass those that wish to hold.

The Airport Authority has expressed a desire to continue to show an extension of the runway to an ultimate length of 5,000 feet, as shown on the previous ALP. If this extension were to take place, a corresponding extension of the parallel taxiway should occur. Additionally, if proposed development related to the expansion plans of MacAir were undertaken, additional taxiways serving that area would be necessary. The taxiways associated with all new development should be designed to meet FAA dimensional standards for Design Group II aircraft.

### Aprons and Tie-Down Areas

Greene County – Lewis A. Jackson Regional Airport has approximately 14,462 square yards of apron pavement surrounding the administration building and main hangar. Combined, these aprons are capable of accommodating 22 aircraft at leased tie downs, which are used primarily for the storage of single-engine and small twin-engine aircraft. The main section of the apron, located between the main hangar and the parallel taxiway, is used for aircraft movement, fueling, and temporary parking for itinerant aircraft stopping briefly at the airport. The airport also provides a single aircraft parking space with tie down anchors for small aircraft in the grass just north of the first two T-hangar rows east of the administration building. There are a significant number of conventional apron tie

downs available at Greene County – Lewis A. Jackson Regional Airport, but most aircraft owners prefer covered storage in order to avoid exposure to the weather.

Currently, space restrictions on the main apron are a major problem at the airport. The apron has a tendency to become a "bottle neck" due to its location in between the parallel taxiway, main hangar, and primary aircraft parking apron. A contributing factor is that aircraft transitioning from one of these areas to the other must pass through the main apron area. The root issue, however, is simply lack of space – only so much staging can be done within the limited ramp area.

When MacAir's Air Force training program is operating, upwards of 15 aircraft are squeezed onto the ramp. Given the current usage levels, in conjunction with projected growth in based aircraft, tenant expansion plans, and present congestion issues, it is recommended that the airport increase apron space. Moving MacAir from the main hangar to a new development area west of North Valley Road, or moving the airport administration and other public terminal area operations out and leaving MacAir, would help alleviate the issue.

MacAir's proposed plans include constructing a new hangar/office building with a large apron area on land west of Valley Road that is not currently owned by the airport. In addition, new aprons and a tie down area capable of accommodating approximately 22 aircraft are planned as part of the Airport Authority's proposed hangar development northeast of existing hangar facilities. Apron space should also be added to connect any new hangar development, such as that planned by MacAir, with the runway/taxiway system, where appropriate.

Alternatives presented in the next chapter will include apron areas that help facilitate the flow of aircraft.

In order to determine the amount of ramp space required for projected activity levels, an estimate of peak ramp usage was developed from the forecast in Chapter 2. This estimate assumed that peak ramp usage would result from the combination of approximately 25 percent of daily transient operations and the forecasted based aircraft using tie-downs at the airport at the end of the 20-year planning period. It was further assumed that single-engine aircraft would need 300 square yards of ramp space and multi-engine aircraft would need 500 square yards. Based on a projected peak demand of 32 aircraft (28 single-engine and 4 multi-engine), it was estimated that 10,400 square yards of ramp space would be needed to meet the ramp space needs of the airport out to 2032.

### Navigational Aids (NAVAIDs)

Navigational aids (NAVAIDs) are any visual or electronic devices, airborne or on the ground, that provide point-to-point guidance information or position data to aircraft in flight. Airport NAVAIDs provide guidance to a specific runway end or to an airport. Equipment necessary to provide an airport with precision, non-

precision, or visual capabilities are installed in accordance with design standards that are based on safety considerations and airport operational needs. The type, mission, and volume of aeronautical activity used in association with meteorological, airspace, and capacity considerations determine an airport's eligibility and need for various NAVAIDs. Greene County – Lewis A. Jackson Regional Airport is equipped with visual landing aids to allow for visual approaches. The airport also utilizes NAVAIDS to aid in the execution of non-precision approach procedures

Facility requirements at the airport include the following two types of NAVAIDs: instrument approach NAVAIDs and visual NAVAIDs. Existing lighting and/or instrumentation at the airport is summarized in **Table 3-4**.

Runway	Type of Approach	VOR	RNAV (GPS LPV)	ALS	MIRL	REIL	VASI	PAPI
7	Non-Precision w/Vertical Guidance		✓		✓	✓		✓
25	Non-Precision w/Vertical Guidance		✓		✓	✓		✓

Source: Airport/Facility Directory, CDM Smith  
Notes:  
VOR: VHF Omnidirectional Radio Range Equipment  
RNAV: Area Navigation (Localizer Performance with Vertical Guidance)  
ALS: Approach Lighting System  
MIRL: Medium Intensity Runway Lighting  
REIL: Runway End Identifier Lights  
VASI: Visual Approach Slope Indicator  
PAPI: Precision Approach Path Indicator

Lighting and NAVAID facility requirements are primarily determined by the needs of aircraft operators frequently using the airport. Existing NAVAID and lighting facilities at Greene County – Lewis A. Jackson Regional Airport are examined in more detail in the following sections.

### Instrument NAVAIDs

This category of NAVAIDs provides assistance to aircraft performing instrument approach procedures to an airport. An instrument approach procedure is defined as a series of predetermined maneuvers for guiding an aircraft under instrument flight conditions from the beginning of the initial approach to a point from which a landing may be made visually.

The standard type of precision approach available today is the instrument landing system, or ILS approach. The FAA, however, is currently developing a global

navigation satellite system (GNSS) using the U.S. Department of Defense's GPS satellites for precision approaches. The GPS satellite-based navigation system is able to provide instant and precise aircraft position information for every phase of a flight. Non-precision GPS approaches are currently available at many airports, including Greene County – Lewis A. Jackson Regional Airport through RNAV (GPS) approach procedures for Runways 7 and 25. Precision GPS approaches have yet to achieve wide-spread implementation.

Both runways are currently served by VOR/DME and GPS non-precision approaches. The GPS Runway 25 approach provides the best weather minimums, allowing the airport to remain operational with reported cloud ceilings not lower than 250 feet above ground level and a one-mile visibility minimum for Category A, B, and C aircraft.

GPS Satellite data in concert with a ground-based transmitter can provide three-dimensional guidance for a GPS precision approach. To achieve guidance for a precision GPS approach with less than one-mile visibility minimums, the FAA recommends an approach lighting system and a greater degree of obstacle clearance than without precision guidance. The airport's current approaches with vertical guidance are adequate, so efforts to pursue precision GPS approaches are not recommended.

#### Visual Landing Aids

Visual landing aids provide aircraft guidance to and alignment with a specific runway end, once the airport is within a pilot's sight. Visual landing aids at Greene County – Lewis A. Jackson Regional Airport currently include the following:

- *Runway Lighting* – As detailed in Chapter 1, Runway 7-25 is equipped with medium intensity runway lighting (MIRL). This lighting is adequate and no changes are recommended for runway lighting. Some airports are changing out their incandescent bulbs for more energy efficient LED bulbs. These bulbs can significantly decrease utility costs at airports where airfield lighting is on from dusk to dawn. Since Greene County-Lewis A. Jackson Regional Airport is equipped with pilot-controlled lighting, the airfield lights are on only when needed at night, so LED lights are not recommended.
- *Taxiway Lighting* – As detailed in Chapter 1, the taxiways are equipped with medium intensity taxiway lighting (MITL). This lighting is adequate and no changes are recommended for taxiway lighting.
- *Runway End Identifier Lights (REILs)* – As detailed in Chapter 1, Greene County – Lewis A. Jackson Regional Airport currently has REILs in place to identify the approach to both runway ends. This lighting is adequate and no changes are recommended.

- *Approach Lighting System (ALS)* – No approach lighting system serves either end of the airport's runway. An omni-directional approach lighting system (ODALS), or something similar, would be necessary for any runway served by a GPS approach with “not lower than three-quarters mile” visibility (current approaches have 1-mile visibility minimums). An ODALS system includes single strobe light standards, spaced 300 feet apart extending up to 1,500 feet beyond the runway end. This type of ALS improves operational safety during nighttime or low visibility conditions. The primary consideration for installing an ALS is the requirement to acquire property to locate the system; however, an ODALS system is not necessary to support activity at the Airport and is not recommended to be installed during the planning period.
- *Other Runway Lighting and Guidance* – Several additional NAVAIDs and visual aids are available at the airport to assist in locating and landing aircraft at night and in poor weather conditions. NAVAIDs include a rotating beacon, lighted wind cone, and an Automated Weather Observing System (AWOS). These systems should be maintained during the 20-year planning period as they play a crucial role in the airport's operation.
- *Precision Approach Path Indicator (PAPI)* – Currently, Runways 7 and 25 are equipped with four-box precision approach path indicators (PAPIs), a system consisting of a set of visual indicators at the recommended touchdown point near each runway end. They provide visual approach guidance to pilots to assist them in following the correct glide path to the runway. Four-box PAPIs are recommended by ODOT and FAA. The PAPI system in place at Greene County – Lewis A. Jackson Regional Airport should be maintained during the 20-year planning period.

The recommended lighting and NAVAID improvements sited above will allow Greene County – Lewis A. Jackson Regional Airport to better serve current and future users through the 20-year planning period.

## Dimensional Standards

The FAA's airfield design standards relative to runway lengths, widths, various centerline separations, and safety dimensions as they relate to Greene County – Lewis A. Jackson Regional Airport are reviewed in this section.

### Obstacle Free Zone

The obstacle free zone (OFZ) is a three-dimensional volume of airspace that supports the transition of ground-to-airborne operations (or vice versa). The OFZ clearing standards prohibit taxiing and parked airplanes and other objects, except frangible NAVAIDs or fixed-function objects, from penetrating this zone. The OFZ consists of a volume of airspace centered on the runway. In addition, some

precision instrument runways are required to meet standards regarding inner-approach, inner-transitional and precision OFZs.

The OFZ for Runway 7-25 at Greene County – Lewis A. Jackson Regional Airport is 400 feet wide and extends 200 feet beyond each runway end. This area must be cleared using the requirements stated above. Existing and future facilities at Greene County – Lewis A. Jackson Regional Airport comply with all OFZ clearance requirements. The ultimate 500 foot extension to Runway 7-25 also complies with these clearing requirements.

#### Part 77 Obstruction Standards

Federal Aviation Regulations (FAR) Part 77 exist to identify objects which may be hazardous to air navigation. These standards apply to the use of navigable airspace by aircraft and to existing or planned air navigation facilities (airports). An obstruction may be an existing or proposed manmade object, object of natural growth, or terrain. Any changes to the airfield must provide the obstacle clearance necessary to meet the requirements designated in FAR Part 77. The critical surfaces are identified in drawings associated with the Airport Layout Plan drawing. Existing Part 77 surfaces will be evaluated during the development of the Airport Layout Drawing and any penetrations will be noted and addressed for removal or marking.

#### Runway Protection Zones (RPZ)

The runway protection zone (RPZ) is an area off the runway end intended to enhance the protection of people and property on the ground. RPZ size is a function of the airport design code and the visibility minimums established for the approach to the runway. Visual runways have smaller RPZs because the landing minimums are higher and the runway is not used during periods of reduced visibility. Runways with precision approaches are required to be protected by the larger runway protection zones. In summary, the lower the visibility minimums for landing, the larger the RPZ.

The RPZ contains two sub-areas, the runway object free area and the controlled activity area. These two sub-areas are discussed as follows:

- *Runway Object Free Area (OFA)* - The runway OFA is a two-dimensional ground area surrounding the runway that prohibits parked aircraft and objects, except NAVAIDs and objects with locations fixed by function, from locating there. For the runway at Greene County – Lewis A. Jackson Regional Airport, the OFA meets clearing standards and extends 300 feet beyond each runway end and has a width of 500 feet.
- *Controlled Activity Area* - The controlled activity area is the portion of the RPZ beyond and to the sides of the runway OFA. It is recommended that an airport control, in fee, this area. The controlled activity area should be

free of land uses that create glare and smoke. Also, the construction of residences, fuel-handling facilities, churches, schools, and offices is not recommended in the RPZ's controlled activity area. Roads are typically not recommended in the RPZ unless they are under airport control.

With existing and recommended future approach visibility minimums slated to remain one mile or greater, RPZs at the airport are not expected to change over the life of the planning period, as long as the ARC approach category remains at the B level. Any increase in ARC approach category or changes in approach procedures which lower approach visibility minimums may require a larger RPZ. Also, any runway extensions would effectively shift the RPZ the same distance as the extension. **Table 3-5** shows the existing RPZ dimensions at Greene County – Lewis A. Jackson Regional Airport.

**Table 3-5: Runway Protection Zones,  
Greene County – Lewis A. Jackson Regional Airport**

Runway	Type of Approach	Inner Width	Outer Width	Length	Approach Slope
7	NP (+1 mi)	500'	700'	1000'	20:1
25	NP (+1 mi)	500'	700'	1000'	34:1

Source: FAA Approach Plates, AC 150 5300-13 "Airport Design"

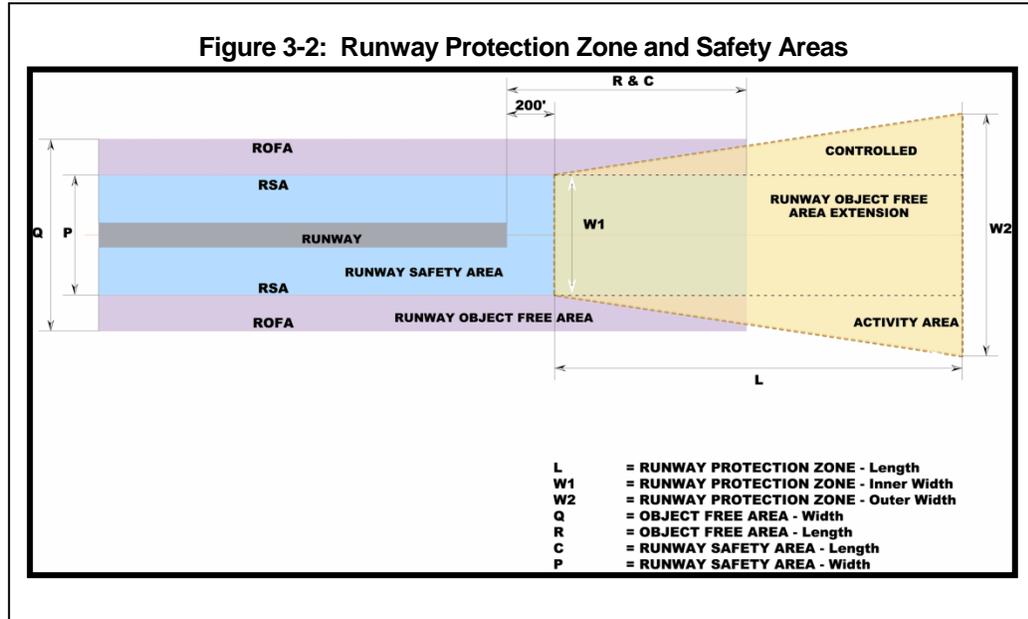
### Runway Safety Area

The runway safety area (RSA) serves as a safety area if an aircraft overruns the paved runway surface. According to the FAA's definition, the RSA should be cleared and graded and have no potentially hazardous ruts or surface variations. This area should also be drained through grading or by storm sewers. General requirements for grading of the RSA are 0 to -3 degree grade for the first 200 feet from the runway end, with the remaining longitudinal grade ensuring that no part of the RSA penetrate the approach surface or drop below a -5 degree grade.

For design standard B-II runways, like Runway 7-25 at Greene County – Lewis A. Jackson Regional Airport, the RSA is required to be 150 feet wide and 300 feet beyond the runway end. Runway 7-25 provides an adequate RSA. The airport maintains approximately 800 feet of graded area on the 7 end (to permit an ultimate 500 foot extension of the runway) and 300 feet on the 25 end within the airport property boundary.

The RPZ, its components and runway safety areas are illustrated in **Figure 3-2** and shown on the Greene County – Lewis A. Jackson Regional ALP.

**Table 3-6** shows the minimum airfield dimensional standards that apply to Greene County – Lewis A. Jackson Regional Airport.



**Table 3-6: Minimum Airfield Dimensional Standards**

Facility	Runway 7-25 Group B-II Design Aircraft
Width:	
Runway	75'
Taxiway	35'
Runway Safety Area	150'
Object Free Area	500'
Runway Centerline to:	
Taxiway Centerline	240'
Aircraft Parking Area	330'
Taxiway Object Free Area	131'
Taxiway Centerline to:	
Aircraft Parking Area	90'

Source: AC 150/5300-13 "Airport Design"

The centerline of the parallel taxiway is situated 240 feet north-northwest of the runway centerline. The required separation is 240 feet for runways serving ARC B-II aircraft and having approach minimums not lower than one mile. The current 240-foot separation meets the FAA design criteria of a 240-foot separation. The runway/taxiway separation will be adequate for the future if approach minimums remain not lower than one mile. The FAA requires a minimum of 300 feet

runway/taxiway separation for approaches with lower than ¾-mile visibility minimums.

#### Other

Appropriate clearing of foliage should be maintained within the runway visual zone (RVZ), runway protection zones (RPZ) and runway object free areas (ROFA) in order to provide adequate visibility across the area and maintain safe air navigation to and from the airport. In addition, trees that penetrate any of the FAR Part 77 surfaces should be cleared. Finally, the FAA has made changes to the terminal instrument procedures and is looking closely at how trees located within these areas affect published instrument approaches for each class of aircraft.

The Airport Authority should continue to investigate the availability of land that can be acquired and used for the required airport improvements. With a cemetery located north of the airport and U.S. Route 35 located east of the airport, both substantially lower in elevation than the airport, land west of North Valley Road and land south of the airport should be considered.

### 3.3 Landside Requirements

This section will briefly describe the landside requirements needed to accommodate general aviation activity through the planning period. These will include hangars, terminal building, automobile parking, fuel storage, and access roadways.

#### Hangars

The demand for hangar storage is generally a function of the number of based aircraft on an airport. At Greene County – Lewis A. Jackson Regional Airport, most of the hangars are T-hangars intended to store a single-engine or light multi-engine aircraft in each unit of the hangar. There are also conventional hangars at the airport that are typically used by airport-based companies for the storage, maintenance and modification of based and transient airplanes and helicopters. Additional hangar needs will be influenced by a variety of factors.

- *T-hangars* - The growth of aviation at Greene County – Lewis A. Jackson Regional Airport and the interest of private aircraft owners will drive the need for increased T-hangar structures used to protect single engine and light multi-engine aircraft. Most of the 87 based aircraft at the airport are stored in T-hangars as described in Chapter 1. Three Beaver Valley aircraft are stored at outdoor tie downs year-round, and MacAir temporarily stores about 10 aircraft outdoors during their peak training season. The eastern-most T-hangar, built in 2003, has a broad range of amenities, while the others are more dated. The Airport Manager has

stated that there is a waiting list for T-hangars with 18 pilots having paid a deposit to secure a spot on the list. The forecast for Greene County – Lewis A. Jackson Regional Airport shows a growth of five single-engine and one multi-engine piston aircraft within the planning period. However, this does not take into consideration MacAir and Beaver Valley Aviation's anticipated expansion plans, which project an increase of 26 aircraft within the planning period. In either scenario it is recommended that new T-hangars are constructed to keep pace with current and future demand. The Airport Authority's proposed improvements include an additional T-hangar building that will be located on existing airport property northeast of the existing hangars in an area dubbed the "East 40". This proposal is expected to meet short-term demands for aircraft storage. Space for additional T-hangars should be reserved for aircraft storage demand in the intermediate and long term.

- *Conventional Hangars* – There are three conventional hangars on the airfield, two of which are 100 percent leased by MacAir for aircraft maintenance and storage. The third hangar was constructed approximately 10 years ago and is leased to a private user for aircraft storage. As discussed in previous chapters, MacAir contracts with the USAF and has ambitious expansion plans to accommodate the growing program. Their plans include constructing a new hangar with a large attached office and classroom building, as well as associated ramp and auto parking areas. These facilities are unlikely to be completed within the desired timeframe. Beaver Valley also desires to build a small conventional hangar (around 2,500 square feet) in which to store three of their aircraft. The Airport Authority also plans to construct two rows of three-unit "Single Volume" Hangars northeast of the existing hangar facilities. Given that the demand driving additional conventional hangar needs is dictated by the business needs of the organizations operating within the hangars, as well as the amount of land necessary to build them, alternatives for placement of these buildings will be outlined in the following chapter.

### Terminal Building

The demand for terminal space at a GA airport relates to the need for facilities that can accommodate both pilots and passengers at an airport. Often, these facilities are provided by the airport FBO(s) or the airport operator and typically include a lounge for pilots and passengers, a flight planning room, rest rooms, and administration offices. The current administration/terminal building at Greene County – Lewis A. Jackson Regional Airport is a 5,175-square foot single story concrete block building attached to the west side of the maintenance hangar. It includes a lobby, restrooms, the airport manager's office, a meeting room, FBO offices, flight training rooms, counter space, vending machines, and storage space. During busy events, such as Young Eagle rallies and heavy flight training days, the terminal becomes overcrowded easily and restrooms become

congested. The FBO, MacAir, occupies the majority of the building and – in order to accommodate their operations – has supplied a temporary 1,632-square foot modular building to the east of the administration building that provides additional space for training, administration, and socializing.

MacAir's proposed expansion plans include construction of a new Flight Training and Research Center on one of two possible locations. The first option is situated to the northeast of current hangars in the area where the Airport Authority is considering their proposed ramp and hangar expansion. The second option, which is the preferred, is the plan to relocate to the west side of Valley Road. The new facilities would include significantly upgraded components, including aircraft ramp, multiple conventional hangars, automobile parking, and a two-story building with offices, conference rooms, classrooms, and an FBO welcome center.

As mentioned previously, the preferred alternative site location for the proposed expansion is located partially off airport property on land currently owned by Ohio University. The Airport Authority is exploring the purchase of this property to avoid a "through-the-fence" operation, which is strongly discouraged by the FAA. MacAir's desired time frame to complete the expansion is considered unrealistic due to required funding and the time required to obtain environmental clearances, provide design, bid and construct the improvements. The limited funding available to the Airport Authority is also needed to reimburse the Airport Authority for capital improvement projects that they completed and for other airport capital improvement needs. However, even if the MacAir plans are unable to come to fruition in a reasonable amount of time, it is recommended, at a minimum, that the airport expand or replace its administration/terminal building.

Existing terminal expansion options have been ruled out by airport management as there is no available space remaining for horizontal expansion and vertical expansion would be too costly because the original structure was not designed to support a second story. New construction options to consider include building the new terminal on the south side of the runway opposite current facilities, or west of North Valley Road. However, these two options would require land acquisitions. A third option to consider that would not require land acquisition would be to build the new terminal on the hillside north of the access roadway and existing terminal building.

As additional safety measures, any additional buildings or parking areas constructed on airport property should have adequate security lighting.

### Automobile Parking

The demand for automobile parking is led by the volume of people using the terminal building. Automobile parking for the terminal building area was planned and designed through the terminal building development effort. The current terminal building has approximately 30 public parking spaces, including one

handicapped space, on the non-secure side of the security fence. These spaces are intended to accommodate pilots, passengers, staff, and public visiting the terminal building. Approximately 15 additional spaces are located behind the security fence, accessible only to tenants and hangar lessees with an access code. As discussed in Chapter 1, insufficient parking has become one of the most pressing issues for the airport.

During peak demand periods, it is estimated that 49 parking spaces are currently needed. Approximately 20 spaces are required by airport staff, and employees of businesses on the airport. During times when MacAir is conducting its Air Force training program, an additional demand for 24 automobiles is present on the airport. This was estimated by assuming that, with eight training aircraft, two shifts, or “sorties”, are required to accommodate all students in the class. With each aircraft holding two persons (one flight instructor and one student), the first shift equates to a demand of 16 automobiles. During a “shift change” an additional eight vehicles arrive with the next set of students and briefly overlap with the cars of the first group of students until they depart. In addition to the Air Force training flights, it is assumed that other aircraft operations generate demand for another five parking spaces. In total, this equates to an existing peak hour demand of around 49 parking spaces.

With the anticipated growth of MacAir’s training program – coupled with the fact that the airport’s existing automobile parking demand already exceeds its capacity (see **Figure 3-3** for an example) – the problem is only expected to become worse. The fact that a significant number of parking spaces are behind the security fence further limits practical parking capacity. Through the out-year of the planning period, six to eight cars are expected to be added to the peak hour demand. Therefore, to accommodate both current and future parking demand it is recommended that the airport establish a parking plan that adds at least 20 parking spaces on the non-secure side of the airport to address this need and designate an area for expansion of additional parking, when feasible. This would more than likely require land acquisition of some sort to accomplish.

Considering MacAir’s proposed expansion plans on land to the southwest of current facilities, it is expected that significant parking infrastructure would be added should those plans come to fruition.

Automobile parking for hangar lessees located beyond the access gate consists of approximately 32 unmarked parking spaces along the access road. This demand is driven by the nature of hangar occupancy rates and it is acknowledged that parking for this area is also insufficient during times of peak airport usage given that there are more hangar spaces than parking spaces. Parking for planned hangar areas will be shown in the alternatives presented in the next chapter.

**Figure 3-3: Overflow Parking at  
Greene County – Lewis A. Jackson Regional Airport**



Source: CDM Smith

Additionally, the Airport Authority has expressed a desire to construct a pavilion adjacent to the terminal building on the non-secure side of airport property for use by both airport users and community members for meetings, gatherings, plane watching, and other airport related events. Ideally, the structure would provide covered space on the ground level and an upper level observation deck. Such an amenity would create additional demand for parking and it would therefore be recommended that the airport consider additional parking facilities for any options that consider constructing a pavilion.

### Aircraft Rescue and Firefighting

Since Greene County – Lewis A. Jackson Regional Airport is a GA facility that does not have and is not expected to have commercial service and/or a Part 139 certification, aircraft rescue and firefighting (ARFF) services are not required to be located on the airport. The Beaver Creek Fire Station is located approximately three miles from the airport, and the fire department, as well as the police department, has passes that allow them to access the airfield through the access gates in the event they are needed. City fire trucks carry a small amount of foam with aerators that can be used for aircraft fire fighting. Based on this and the fact that ARFF services are not required for the airport, ARFF services provided by the city of Beaver Creek may be considered adequate for the existing and forecasted level of operations.

## Fuel Storage

Greene County – Lewis A. Jackson Regional Airport owns and controls above ground fuel storage tanks totaling 20,000 gallons (10,000 for both Jet A and 100 avgas). These tanks are owned by the Airport Authority and are operated by the FBO. As with similar airports, fuel storage requirements are typically based upon maintaining a two to three-week supply of fuel during an average month. The availability for more frequent deliveries can reduce the fuel storage capacity requirement. Storage of jet fuel beyond a four-week period may not be recommended without re-circulation capability, as the fuel quality can attract water, form microorganisms, and degrade. Because an increasing percentage of future aircraft utilizing the airport will require Jet A fuel, the Airport Authority may consider increasing Jet A fuel requirements.

As operations by turbine and piston aircraft increase and more aircraft base at the airport, average monthly fuel usage can be expected to increase. It is unlikely; however, that two or three-week fuel usage will exceed current storage capacities. Additionally, with the flexibility to increase fuel deliveries, the current storage capacity will be adequate for the planning horizon. If for some reason, however, additional fuel storage at the airport is needed, it would have to be located above ground at a different location than the current system.

## Airport Fencing

Greene County – Lewis A. Jackson Regional Airport has a four-foot high fence from the west end of the west aircraft apron to the east side of the north parking lot to prevent unauthorized vehicle traffic from entering the airfield. There is a two-leaf manual gate where the north end of the main parking loop connects to the main apron near the administration building. There is an electronic gate at the west end of the service road that connects to the north parking. This gate is activated by a keypad just west of the gate.

Wildlife fencing should be completed to encompass the entire airport perimeter and meet federal requirements for wildlife fencing when funds become available. All fencing should be maintained and extended, as necessary, in conjunction with airfield and facility development. Adequate wildlife fencing is considered 10 feet high with one foot underground and barbed wire at the top.

## Access Roadways

Ground access and terminal roadways serve passengers, employees, visitors, and anyone who travels to and from the airport. Circulation systems within the airport boundaries should minimize congestion and support efficient access to the airfield and associated facilities. Additionally, it is important to ensure that the access roadways are well planned, and provide adequate capacity to meet the projected demand imposed by vehicular traffic.

As explained in Chapter 1, ground access to Greene County – Lewis A. Jackson Regional Airport is via Dumford Road, which is the airport's main access road to the terminal, FBO, and hangar areas. Dumford Road connects to North Valley Road, which subsequently connects to US 35 to the north and Upper Bellbrook Road to the south. Both US 35 and Upper Bellbrook Road enable access to the airport from Xenia and from points west. Just east of the airport, US 35 continues into Xenia as Main Street but also splits off to the south as "Xenia Bypass," which is a limited-access highway. The Miami Valley Regional Planning Commission (MVRPC), in cooperation with the Ohio Department of Transportation (ODOT), has decided to convert four miles of US 35 between the Xenia Bypass and the North Fairfield Road Interchange in Beavercreek into a limited-access facility<sup>2</sup>. This development would convert the intersection of US 35 and North Valley Road/Trebein Road into an overpass with an exit from US 35 to North Valley Road. This could potentially impact airport access by eliminating direct access to North Valley Road from US 35, which is a major thoroughfare between Montgomery and Greene Counties. As a result, airport accessibility would be reduced and new signage would be required. Plans call for construction to start in 2016, but as of July 2013 funding has yet to be identified. It is recommended that airport management monitor this project and offer advice to ODOT on airport signage.

Given the proposed development plans of MacAir, which wishes to construct completely new facilities west of Valley Road, it would be necessary to construct an additional access road to these facilities if these plans came to fruition.

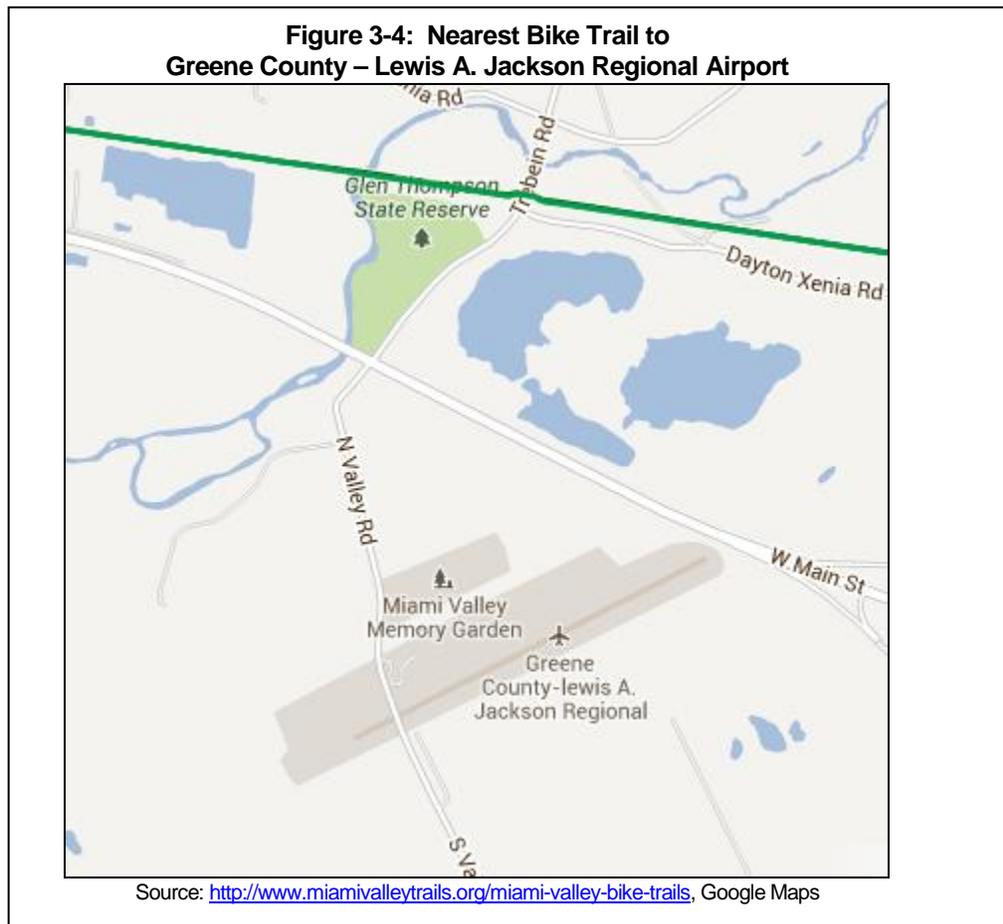
Within a few miles of the airport is the Xenia Station, which is the largest paved bike trail hub in Ohio and connects to 170 miles of paved bikeways. These trails link to a number of different communities, as well as the nearby Dayton trail network, making this part of southwestern Ohio very conducive to travelling by bike. The excellent connectivity and superior navigational signage make bike travel a viable mode of transportation in the area<sup>3</sup>.

As shown in **Figure 3-4**, the nearest bike trail (green line on map) is situated just over one mile north of the airport. This trail, known as the Creekside Trail or H Connector, is an east-west connector between Xenia Station and the Dayton trail network. From the airport, one can access this trail via Valley Road, Trebein Road, Dayton Xenia Road, and County Road 142. These roads do not currently have bike lanes nor are they considered bike-friendly; however, it would be feasible to improve these roads to achieve either status, thereby creating a direct link between the airport and major bikeways. Funding programs for bike trails are available and further study/research on the subject would be required in order to accomplish this goal.

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<sup>2</sup> <http://www.mvrpc.org/projects/us-35>

<sup>3</sup> <http://www.ohiobikeways.net/xenia.htm>



### 3.4 Summary

As demonstrated by the demand capacity discussion at the beginning of this chapter, the capacity of the airfield at Greene County – Lewis A. Jackson Regional Airport will exceed the demand throughout the planning period. Based on the FAA Advisory Circular for demand capacity analysis, the ASV of the airfield is approximately 230,000 operations while the forecast projects 42,900 annual operations, or 19 percent of its capacity. Therefore, runway improvements related to demand and capacity are not required within the planning period.

Improvements to the airport are recommended, however, to improve the flow of aircraft on the ground and to meet the demand for aircraft storage. One item of particular importance is a holding apron off of the taxiway towards the approach end of Runway 25. This recommended feature will alleviate wait times for takeoff during both normal and peak hour operations.

Aircraft apron areas should be expanded to provide adequate parking and facilitate the efficient flow of aircraft to newly developed hangar areas.

Landside improvements include an additional T-hangar and conventional hangar development for based aircraft. Uses for new hangar facilities include aircraft maintenance operations as well as business and private aircraft storage. Other landside improvements include an expanded administration/terminal building and increased auto parking space to accommodate current and projected demand. A pavilion/observation deck is recommended to make the airport more appealing to visitors. A full-perimeter wildlife fence is also recommended. The airport should work with the county and other relevant agencies to establish bike-friendly connectivity to the nearby bike trail.

Alternatives for development will be reviewed and a recommended concept will be presented and illustrated on the ALP.

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## Development Alternatives

The objective of this chapter is to identify feasible development options that meet the projected levels of aviation demand as well as maintain a safe aviation environment in and around Greene County – Lewis A. Jackson Regional Airport (119) within the 20-year planning period. In order to achieve this objective, the following five sections will help determine a recommended approach to future development at Greene County – Lewis A. Jackson Regional Airport.

1. Summary of Airport Requirements
2. Ability of Existing Facilities to Accommodate Improvements
3. Identification of Development Alternatives
4. Evaluation of Alternatives
5. Conclusions and Recommendations

### 4.1 Summary of Airport Requirements

Greene County – Lewis A. Jackson Regional Airport will continue in its role as a general aviation airport, supporting the general and business aviation needs of the Dayton metropolitan area. The airport does this by accommodating activities such as aircraft maintenance, flight training, corporate and business activity, as well as personal small and light aircraft operations. A driving factor for growth at the airport at the current time is the FBO's contract with the Air Force for a specialized training program. The preceding capacity analysis and facility requirements chapter determined that overall airfield capacity at Greene County – Lewis A. Jackson Regional Airport is sufficient to meet expected demand during the planning period. However, there are several airfield improvements that are recommended to meet user needs such as increased apron/aircraft parking area, and an additional taxiway run-up area to improve the flow of aircraft on the ground. Landside improvements will address the demands for additional aircraft hangar storage, automobile parking, and terminal building facilities. The following is a summary of the key facility recommendations, as discussed in the previous chapter.

- Expand the existing or construct a new administration/terminal building large enough to accommodate current and projected demand

- Add a run-up area off of the taxiway towards the approach end of Runway 25 to alleviate wait times for takeoff during both normal and peak operations
- Add more T-hangars and conventional hangars to accommodate based aircraft demand
- Expand the apron areas consistent with providing efficient airfield access from expanded or new terminal building as well as from planned hangar development
- Add automobile parking to accommodate current and projected demand
- Add a pavilion/observation deck to make airport more appealing to visitors
- Install full-perimeter wildlife fence
- Add bike trail connectivity
- Acquire land, as needed, to permit the improvements listed above

## 4.2 Ability of Existing Facilities to Accommodate Improvements

This section will evaluate the ability of existing facilities to accommodate recommended facility improvements.

### Airfield

Before evaluating airfield improvements, it is important to explore the need/demand for existing airfield facilities. As stated in the preceding chapter, the existing runway and taxiway system has enough capacity to accommodate the forecasted demand for future aviation activity. Greene County – Lewis A. Jackson Regional Airport is, during periods of peak training activity and periods of normal operation, an active general aviation airport with a growing number of based aircraft and operations which warrant the development of airfield improvements to enhance the flow of aircraft movement. Facilities recommended to enhance airfield efficiency and improve safety will require the modification of existing facilities or land areas.

### Runway Extension

This and the previous master planning efforts studied the need and justification for extending Runway 7-25 to a length that would better meet the requirements of current and future larger aircraft serving the airport. At 4,500 feet, Runway 7-25 sometimes requires larger aircraft to reduce their load in order to safely depart, especially during hotter months.

The existing runway length accommodates most of the operations at the airport and, based upon the 20-year forecast, there is insufficient justification for extending the runway during the planning period.

However, prudent planning practices call for the airport to preserve this option to the extent practicable in order to accommodate a greater share of larger aircraft should conditions change unexpectedly. By showing a planned runway extension on the Airport Layout Plan, the Airport Authority protects the airspace, preserves the surrounding land for the runway extension, and provides flexibility in terms of options in the future.

### **Taxiway Improvements**

The taxiway system at Greene County – Lewis A. Jackson Regional Airport is adequate to meet the needs of current based aircraft users the majority of the time. However, during periods when operations increase, especially operations involving flight training, congestion can occur on the taxiway leading to the approach end of Runway 25 due to the lack of a run-up area. The recommended taxiway improvement identified in the previous chapter is a run-up area near the approach end of Runway 25 with a bypass taxiway. This improvement is recommended for all development alternatives. Other taxiway alternatives are based on individual development alternatives, which are described later.

### **Apron Expansion**

The airport's existing aircraft apron is just over 14,000 square yards and surrounds the administration/terminal building and maintenance hangar. Space restrictions on the main apron are a major concern for the airport as tie downs and transient aircraft parking are severely limited. The apron's location between the parallel taxiway and the main hangar creates a bottleneck that limits transition to or from the apron. This effect is amplified during periods of increased use such as when MacAir stages aircraft during its Air Force training program. Additional apron space is required and should be consistent with planned hangar development to facilitate the efficient flow of aircraft. Preliminary concepts for this hangar development estimate an apron and tie-down area capable of accommodating an additional 22 aircraft. Additional apron area will also be required with the construction of any replacement terminal. Potential sites for expansion include the area east of the existing hangars "East 40", the previously discussed 12 acres west of North Valley Road, on land south of the airport, and within the current terminal area if the administration building and maintenance hangar were moved.

### **Airfield Navigational Aid Improvements**

No improvements to navigational aids on the airfield are necessary during the 20-year planning period as maintenance of the current systems is adequate for the needs of airport users.

## Landside

Similar to airfield facilities development, landside development opportunities will also look to existing structures to accommodate improvements.

### **Administration/Terminal Building**

The airport's existing administration/terminal building is a 5,175-square foot single-story building attached to the west side of the maintenance hangar. As described in the preceding chapter, the terminal is often easily overcrowded and the FBO (MacAir) has located a temporary modular building to the east of the terminal to provide for additional space. Additional terminal space is needed to provide expanded classrooms, restrooms, and meeting rooms. Horizontal expansion options for the existing terminal have been ruled out by airport management due to lack of space, and vertical expansion is not a viable option due to structural limitations. Replacement terminal location options include building onto the hillside immediately north of the access roadway, off the northwestern end of Runway 7, or to the south of the runway opposite current facilities. These three potential terminal locations form the cornerstone of the development alternatives described later.

### **Hangars**

The airport currently has a number of conventional hangar and T-hangar buildings northeast of the terminal to protect aircraft from sun and weather exposure. The T-hangars are 100 percent occupied and the airport has a waiting list with approximately 18 aircraft owners having placed deposits. Airport management has a proposed development plan in place to construct new T-hangars and conventional hangars northeast of the current hangar structures. This development, nicknamed the "East 40," would be supplemental to the existing facilities currently provided and is intended to accommodate current demand for existing facilities and short-term growth. When accounting for forecasted growth in based aircraft as well as the anticipated expansion plans of both MacAir and Beaver Valley Aviation, it becomes clear that further hangar development would be required to meet long-term needs during the planning period. The planned hangar development is limited from expanding farther to the east by the presence of the airport AWOS. Therefore, the alternative development options need to identify additional areas for hangar expansion.

### **Automobile Parking**

Automobile parking capacity at the airport is also insufficient and has become one of the most pressing issues for the airport. There are 30 spaces on the non-secure side of the security fence and 15 on the secure side. During periods of heavy training activity, these spaces quickly fill up and cause any additional vehicles to park along the entrance road in unmarked areas. Currently, it is

estimated that 49 parking spaces are needed during peak demand periods. With the forecasted growth in peak hour demand and the anticipated growth of the Air Force training program, it is estimated that an additional 20 parking spaces will be required by the end of the planning period. The steep grade of the land (on-airport property) immediately adjacent to the access road makes development a challenge. With minor modifications such as terrain grading and driveway widening, it is considered feasible for the existing infrastructure to accommodate an additional 20 parking spaces with head-in alignment.

Alternatives for developing the airfield and landside facilities mentioned above will be addressed in the next section, *Identification of Development Alternatives*. These alternatives will make use of existing facilities where they provide benefit, cost savings or minimize the impacts to other areas. In some instances, however, the ability to use existing facilities does not present itself or constitute the most logical approach to development. In these circumstances, a facility may require replacement or removal to make way for new opportunities.

### 4.3 Identification of Development Alternatives

Greene County – Lewis A. Jackson Regional Airport has limited land and apron area available for expanding facilities needed to house existing and future tenants. With steep terrain to the north of the airfield and North Valley Road bisecting airport property; the airport has few opportunities to expand within its existing boundaries. Therefore, alternatives will be developed both inside and outside the property boundary.

All development alternatives revolve around the location of a replacement terminal/administration building. The other facility requirements discussed in the previous section are ancillary features typically associated with an airport's terminal building and will also be addressed. Recommendations not associated with the terminal replacement will be addressed in each alternative. Because Greene County – Lewis A. Jackson Regional Airport, like so many general aviation airports, has experienced times of strong growth as well as times of decreased activity levels, this study aims to provide the flexibility to respond to aviation demand beyond the current expectations.

Two terminal complex alternatives plus one “no action” alternative, presented subsequently, were developed to address needed facility improvements. All three alternatives include the proposed hangar development east of the existing facilities as well as the addition of a run-up area, at the Runway 25 end of the parallel taxiway. Located adjacent to the existing terminal building, the pavilion structure desired by the Airport Authority is present in Alternatives 2 and 3. Additionally, each alternative shows the ultimate runway length of 5,000 feet despite plans to maintain the current length of 4,500 feet through the end of this planning period.

## Development Alternatives

### **Terminal Complex Alternative 1 (Figure 4.1)**

The first terminal complex concept considered involves constructing a replacement terminal building on existing airport property. The new terminal would be built onto the hillside north of the existing terminal building and access road. The large maintenance hangar would be relocated immediately adjacent to the new terminal building on the hillside as well, freeing up a significant amount of space for additional apron area. This alternative requires the following improvements to be made:

- Clearing of vegetation from the hillside and grading of the slope.
- Construction of an access road and parking lot for the terminal (40 additional auto parking spaces). An access road starts from the base of Dumford Road leading up the hillside to provide access to the new terminal, the eastern hangar development, and the fuel farm.
- Construction of the new administration/terminal building (roughly 10,000 square feet total), built onto the hillside.
- Disassembly, relocation, and reassembly of the large maintenance hangar onto the edge of the hillside. The airside of the hangar should be in line with new administration building and smaller maintenance hangar. The steel frame hangar was originally designed for disassembly and reassembly. Preparation and grading of the site foundation with steel and concrete pylons will be necessary prior to reassembly.
- Demolish the old terminal building.
- Relocate the fuel farm (tanks, fueling station, and fuel delivery station) next to the large hangar, north of the small conventional hangar. Access would be provided via the new access road north of the new administration building. If the fuel farm tanks were to be moved to a new location, airport management expects to purchase new tanks.
- Convert the footprints of the former terminal, hangar, fuel farm, and access road and parking lot into new apron area.
- Pave over the grass strip between the parallel taxiway and the existing apron area. Due to differences in elevation between the existing apron area and the taxiway at this point, this may require demolition and re-grading of a significant portion of the apron to accomplish.
- Create a turnaround at the top of Dumford Road with small parking lot for drop offs. Install a gate leading onto the apron for emergency access to the airfield.

Not including the planned “East 40” development, Alternative 1 results in a total apron area of approximately 21,000 square yards and 19 tie-downs directly

adjacent to the new terminal area, which is an increase over the 14,000 square yards and 14 tie-downs in the existing configuration. The primary advantage of Alternative 1 is that it would not require land acquisition as all development would be completely contained within existing airport property. Another advantage is that all airport operations would remain concentrated in the same general area relative to the airfield. However, several challenges exist to making this alternative a reality, the largest of which would be constructing on such a steep hillside and the high costs associated with doing so. Another disadvantage is that this development only addresses the airport's needs within the planning period. With this alternative, the airport would effectively be fully built out and would have no room to accommodate growth beyond the 20-year planning period, or accelerated growth should it occur sooner than expected. In this scenario, the airport would have limited flexibility to accommodate future expansion.

As shown in Figure 4.1, the property to the south of the airfield is marked "property to be acquired." This indicates that, if this development scenario were to take place, any future airport expansion beyond this planning period should occur on this property. Property acquisition would be required to accommodate expansion since Alternative 1 would effectively fully utilize property within the existing airport boundaries.

### **Terminal Complex Alternative 2 (Figure 4.2)**

A second alternative was developed that would provide the airport more flexibility in terms of future expansion capabilities. This concept involves constructing a replacement terminal building on property to the west of North Valley Road. The associated features such as aircraft apron, connecting taxiway, automobile parking, and an access road would all be built alongside the new terminal. West of North Valley Road, the airport owns only a portion of land between the parallel taxiway and the tree line; the remainder of the property is owned by Ohio University (OU). The OU property extends westward and wraps around the end of Runway 7, encompassing a total of 113 acres. To provide adequate flexibility, all of this property would be acquired through fee simple purchase in order to accommodate future hangar development, as needed. While much of the OU property is undevelopable because of terrain and is not needed by the airport, purchasing only part of the land would cut off the remainder of the property from its only road access, greatly diminishing its value. To avoid this, purchase of the entire OU property is recommended. Existing airport facilities and infrastructure would be left as is and would, presumably, still house FBO operations. This alternative requires the following improvements:

**Figure 4.1**  
**Alternative 1**



- Acquire sufficient property (approximately 12 acres of required land, plus another 101 acres of back land that would not be able to be developed) for the entire proposed development alternative (Alternative 2) and potential expansion for future apron and hangar development. The footprint for this terminal complex would occupy approximately eight acres, about 53 percent of which would be on existing airport property.
- Clearing of vegetation from the site and grading of the slope. The proposed terminal location is 32 feet lower in elevation than the parallel taxiway at the proposed connecting point.
- Construct an access road with retaining wall connecting to North Valley Road opposite the existing airport access road (Dumford Lane).
- Pave the apron area and construct a taxiway connector and taxiway between the apron, hangars, and taxiway connector.
- Construct a new terminal building (roughly 12,700 square feet total – two stories) and automobile parking (57 additional spaces). Separate the airside and landside features with fence, providing for airside access via a security gate.
- Designate areas for future hangar development if needed.
- Construct hangars, additional apron, and a taxiway connector when needed. Hangars suggested to be corporate box style hangars; two 240' x 75' buildings each with three 80' x 75' units

Not including the planned “East 40” development, Alternative 2 results in a total apron area of approximately 10,500 square yards and 14 tie-downs directly adjacent to the new terminal area, which would be in addition to the 14,000 square yards and 14 tie-downs at the existing terminal area. The primary advantage of this alternative is the potential for future expansion provided by the availability of some additional developable land. Instead of being constrained in tight spaces by aging facilities and steep terrain as in Alternative 1, Alternative 2 would allow for a clean slate design of the airport’s most pressing needs – terminal space, aircraft parking on a paved apron area, and automobile parking. This concept also provides an increased potential for revenue generation associated with the additional corporate hangars and additional aircraft tie-downs.

Should airport growth ever exceed what can be accommodated on the OU property, it is recommended that the airport examine development options to the south of the runway on privately owned property. To maintain this option in the future, the property is shown as “To be acquired” in this alternative and on the Airport Layout Plan.

The primary challenges presented by this concept revolve around acquiring the land outside of the airport’s property boundary and grading. The property to the

west of the targeted development area is owned by Ohio University. As mentioned previously, an agreement to acquire the property may be close. Significant amounts of grading would also be required to create a functional apron and taxiway connector. The parallel taxiway near this development area is approximately 30 feet higher in elevation than the lowest portion of the proposed apron area. This is more a concern of cost as opposed to a technical challenge.

One disadvantage to this configuration is that there would be no easy way to transition from one side of the airport to the other. Fuel sales at the new terminal building would require the use of a fuel truck for refueling as the fuel infrastructure would likely remain at the existing terminal area. Similarly, another drawback to this design is that the new terminal building would be isolated, or decentralized, from existing airport infrastructure, potentially impacting oversight by airport management through reduced visibility or perceived presence. On the other hand, a potential benefit of this configuration would be the separation of contrasting aviation activities. Airport management has expressed interest in having separate areas for corporate aviation activity and recreational/flight training activity. This alternative maximizes the airport's cumulative area of ramp space, aircraft parking, hangar storage, terminal building, and auto parking.

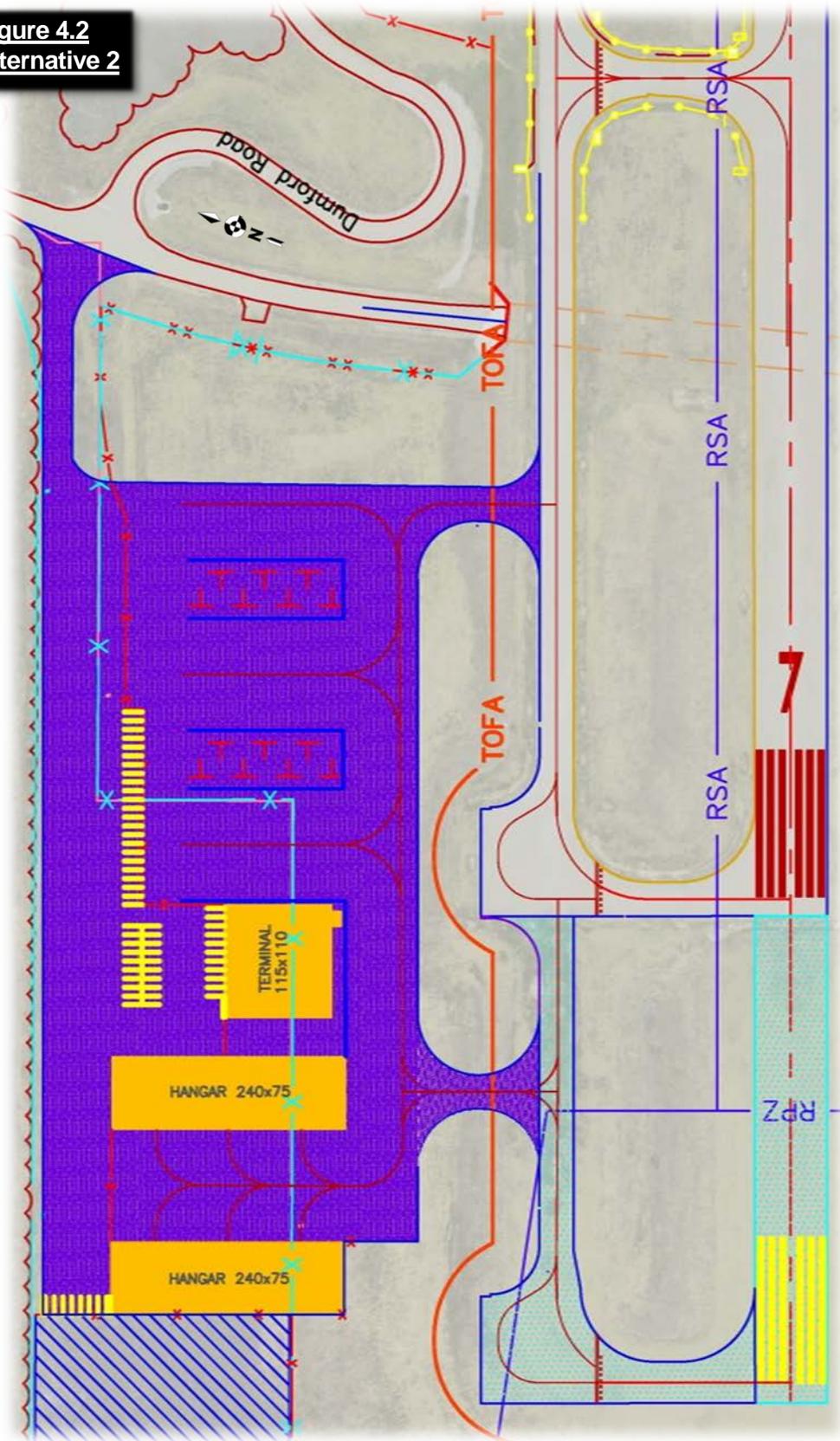
### **Terminal Complex Alternative 3 (Figure 4.3)**

Alternative 3 is the “no build” option that omits all development concepts related to a replacement terminal. The only changes shown are the following:

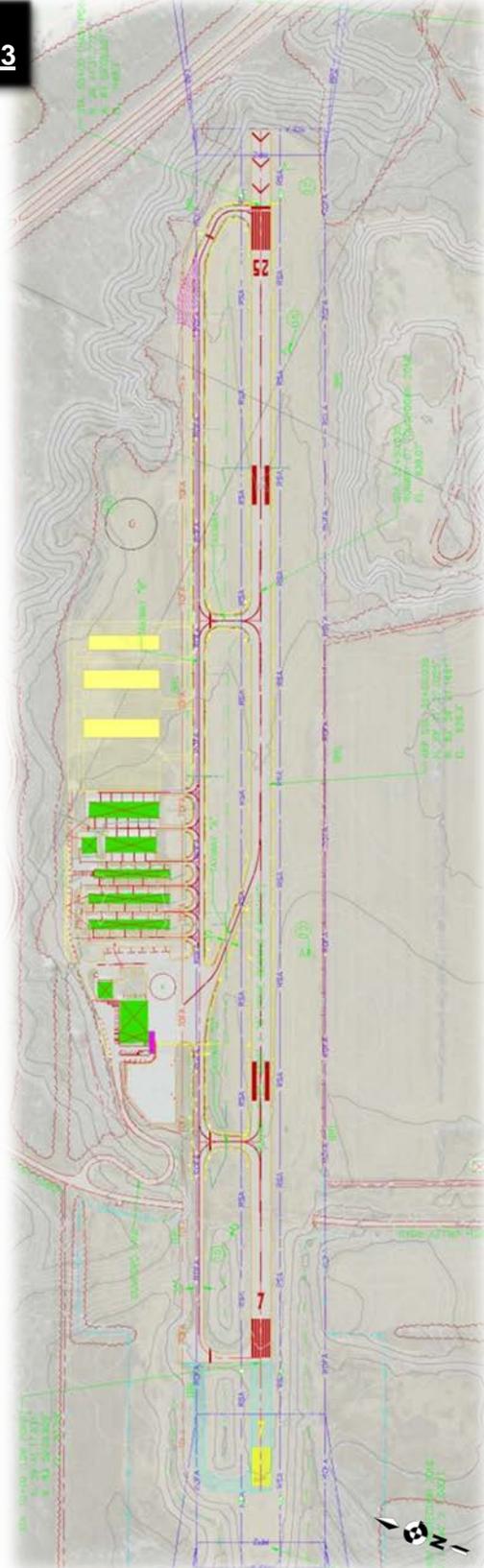
- The planned hangar development east of the existing hangar facilities, dubbed the “East 40.”
- A small aircraft hold apron at the end of the parallel taxiway towards Runway 25 end for aircraft run ups.
- A pavilion and observation deck for visitors and community group gatherings abutting the existing terminal building.
- Automobile parking enhancements on the unsecure and secure side of the access gate (42 additional spaces).

The advantage of Alternative 3 is that it minimizes cost yet still addresses several of the airport's most pressing needs. Terminal replacement would not be considered in this scenario; however, it is assumed that MacAir could stage its Air Force training program on the new “East 40” hangar development. The pavilion would aid in alleviating some of the space issues resulting from the large groups gathering in the terminal building. Capacity for automobile parking would be enhanced through head-in parking spaces on the secure and unsecure sides of gate. Accommodating this change would require minor modifications to the existing parking surface such as removal of vegetation, grading, and parking lot resurfacing and repainting.

**Figure 4.2**  
**Alternative 2**



**Figure 4.3**  
**Alternative 3**



## 4.4 Evaluation of Alternatives

The alternatives developed as a part of this master plan are significantly different from one another and their potential impacts vary widely. The preferred airfield alternative will determine how landside facilities are developed, phased and constructed within the planning period. The leading factor in the overall, long-term development of the airport is centered on a replacement administration/terminal building and all other needs are planned around the new administration/terminal building. Because the Airport Authority has already prepared plans for development of hangars and aircraft ramp east of the existing hangars, and is in the process of seeking funding, this development has been included in each of the possible terminal alternates.

### Airfield

#### **Runway Extension**

All three alternatives show an ultimate runway length of 5,000 feet for Runway 7-25. However, no scenario recommends extending the runway within the 20-year planning period, which is consistent with Airport Authority desires. As previously stated, the runway extension is shown on the Ultimate Airport Layout Plan in order to protect the airspace, preserve the land for aeronautical use, and provide a prudent planning tool for contingencies beyond the planning period. The Future Airport Layout Plan shows the runway at its current 4,500-foot length.

#### **Taxiway Improvements**

To enhance operational efficiency during times of higher demand, all three alternatives recommend the installation of a small aircraft holding apron at the end of the parallel taxiway near Runway 25 for use as an aircraft run-up area.

#### **Apron Expansion**

With the terminal complex reconfiguration associated with Alternative 1, the airport would gain approximately 8,675 square yards of apron space, resulting in a total apron area of 22,675 square yards. Whereas Alternative 2 would add 10,500 square yards of apron space in addition to the existing 14,000 square yards of apron. Alternative 1 would add five aircraft tie-downs, while Alternative 2 would add 14 tie-downs to the existing 14. Alternative 3 proposes no changes to apron area or aircraft tie-downs. The proposed "East 40" development will add approximately 6,830 square yards of aircraft ramp and 20 tie-downs.

### **Airfield Navigational Aid Improvements**

No improvements to navigational aids on the airfield are proposed in any alternative.

## Landside

### **Administration/Terminal Building**

Both Alternatives 1 and 2 propose constructing a new and larger administration/terminal building. Alternative 1 proposes constructing the terminal building into the hillside north of the existing access road on airport property, while Alternative 2 proposes building on land west of North Valley Road that is only partially within airport boundaries. Depending on the desired attributes and space needed, the terminal building can be one or two stories in either scenario. Alternative 1 results in a net gain of 5,000 square feet of terminal space, while Alternative 2 results in an additional 12,700 square feet. Alternative 3 proposes no change to the terminal building outside of the addition of an outdoor pavilion and observation deck.

### **Hangars**

Only Alternative 2 offers the airport additional hangar space, which increases the potential for revenue generation through the addition of six 80' x 75' conventional hangars contained within two 240' x 75' buildings. Alternative 1 recommends relocating the large maintenance hangar. This reconfiguration does not result in any gain in hangar capacity. Alternative 3 proposes no changes to hangars. The proposed "East 40" development will add a 10-unit T-Hangar and two rows of three-unit conventional hangars (6 units).

### **Automobile Parking**

The hillside terminal concept found in Alternative 1 calls for a parking lot to be built alongside the new terminal building. The design for the new parking lot proposes a capacity of 35 parking spaces. In this concept, the access road is converted into a turnaround at the top of the hill (just before the existing traffic circle) and five parking spaces are added. This results in a total of 40 parking spaces. However, due to the reconfigured terminal complex in this concept, 30 existing parking spaces would be eliminated, resulting in a gain of only 10 parking spaces on the non-secure side. An additional 42 spaces are planned on the secure side of the fence by the existing T-hangars, which would result in a net gain of 52 spaces for the entire airport. It is important to note that, as outlined in the Facility Requirements chapter, it is recommended that the airport add at least 20 parking spaces on the non-secure side of the airport to address current and future needs.

Alternative 2 provides for significantly increased auto parking capacity, albeit at a different area of the airport. The proposed parking area in Alternative 2 would add 57 spaces on the west/OU property terminal complex, which results in a total of 99 auto parking spaces when combined with airport's existing parking infrastructure. Planned reconfiguration of the parking infrastructure near the existing T-hangars would result in a grand total of 129 parking spaces for the airport as a whole.

In Alternative 3, capacity for automobile parking would be enhanced through head-in parking spaces on the secure and unsecure sides of gate, increasing parking by 42 spaces. Additional parking would likely be associated with the proposed "East 40" development; however, it is not included in this calculation.

### **Comparison of Terminal Complex Alternatives**

The preceding section provided a variety of development concepts that revolved around a replacement administration/terminal building at Greene County – Lewis A. Jackson Regional Airport. In order to determine a recommended terminal area layout, the alternatives must be evaluated for both the benefits they provide and the challenges they impose. Improvements related to the East 40 development are not included in this comparison of alternatives since the airport plans to proceed with the East 40 development regardless of any other development plans undertaken. The analysis of these alternatives compares and contrasts each development alternative standard, using quantifiable measures:

- Administration/Terminal Building – added administration/terminal space
- Hangar Capacity – aircraft storage units and hangar space added
- Aircraft Parking – tie-downs added
- Apron Space – added aircraft staging and parking area
- Auto Parking – added automobile parking capacity
- Land Acquisition – amount of non-airport property required

A comparison of the primary features added in each development alternative is shown in **Table 4-1**.

Alternative 1 provides the airport with fewer added features when compared to Alternative 2; this includes aircraft tie-downs, auto parking spaces, conventional hangar space, and terminal space. However, Alternative 1 provides significant facility upgrades over Alternative 3, which is the no action option. The primary advantages of Alternative 1 are that it does not require land acquisition and all airport operations would remain centered on the terminal complex. Aside from the costs associated with hillside construction, the primary disadvantage in this scenario are the minimal gains in airport infrastructure; aircraft parking, auto parking, and ramp area would all increase marginally and hangar infrastructure remains unchanged. Alternative 1 addresses many of the airport's short term

needs but provides little vision throughout the 20-year planning period. Any future expansion would require property acquisition.

**Table 4-1:  
Comparison of Alternatives  
Terminal Complex Infrastructure Features**

Added Features	Alternative 1 Hillside	Alternative 2 West/OU Property	Alternative 3 No Action (existing)
Auto Parking Spaces	52 <sup>1</sup>	99 <sup>2</sup>	42 (30 unsecure/15 secure)
Aircraft Tie-Downs*	5	14	0 (14)
Acreage of Land Acquisition*	0	3.77 <sup>3</sup>	0
Apron/Ramp Space*	8,675 yd <sup>2</sup>	10,500 yd <sup>2</sup>	0 (14,000 yd <sup>2</sup> )
Conventional Hangar Space*	0	36,000 ft <sup>2</sup>	0 (19,560 ft <sup>2</sup> )
T-Hangar Units*	0	0	0 (30)
Terminal Space*	5,000 ft <sup>2</sup>	12,700 ft <sup>2</sup>	0 (5,000 ft <sup>2</sup> )

\*Figures do not include proposed "East 40" hangar development

<sup>1</sup>30 spaces eliminated, 40 replacement spaces, and 42 new spaces on secure side by existing T-hangars

<sup>2</sup>57 new spaces at Alt. 2 terminal plus 42 new spaces on secure side by existing T-hangars (does not include 30 existing non-secure side parking spaces)

<sup>3</sup>Footprint of proposed alternative development that is off-airport property; actual acreage to be acquired = 114  
Source: CDM Smith

Alternative 2 provides the airport with a clean slate design concept, adding significantly more airport infrastructure than any other alternative. This alternative provides the airport with the greatest potential for future expansion given the availability of land for purchase. The additional hangars proposed in this scenario also create greater opportunity for revenue generation. Aside from the costs associated with property acquisition and development, the main disadvantage in this alternative is the separation of the new terminal building from the existing airport infrastructure. Fuel sales at the new terminal building would require the use of a fuel truck, and the isolation of airport administration could impact oversight through reduced visibility or perceived presence. However, the separation of contrasting aviation activities can be beneficial and airport management has expressed an interest in this concept.

Alternative 3 is the "no build" option that does not propose any development concepts related to a replacement terminal building. This scenario would foster expanded auto parking infrastructure and the addition of a pavilion/observation deck at the existing terminal building. The advantage presented by this option is that it minimizes cost while still addressing several of the airport's most pressing needs. The planned "East 40" development, which is present in each alternative, could presumably accommodate several needs including increased apron, hangars, and auto parking.

Based on discussions with airport staff, Alternative 2 was chosen as the preferred alternative because:

1. It addresses the airport's most pressing needs by the widest margin
2. It provides the airport with greater opportunity for additional revenue
3. Provides the airport with the greatest potential for future expansion

## 4.5 Conclusions and Recommendations

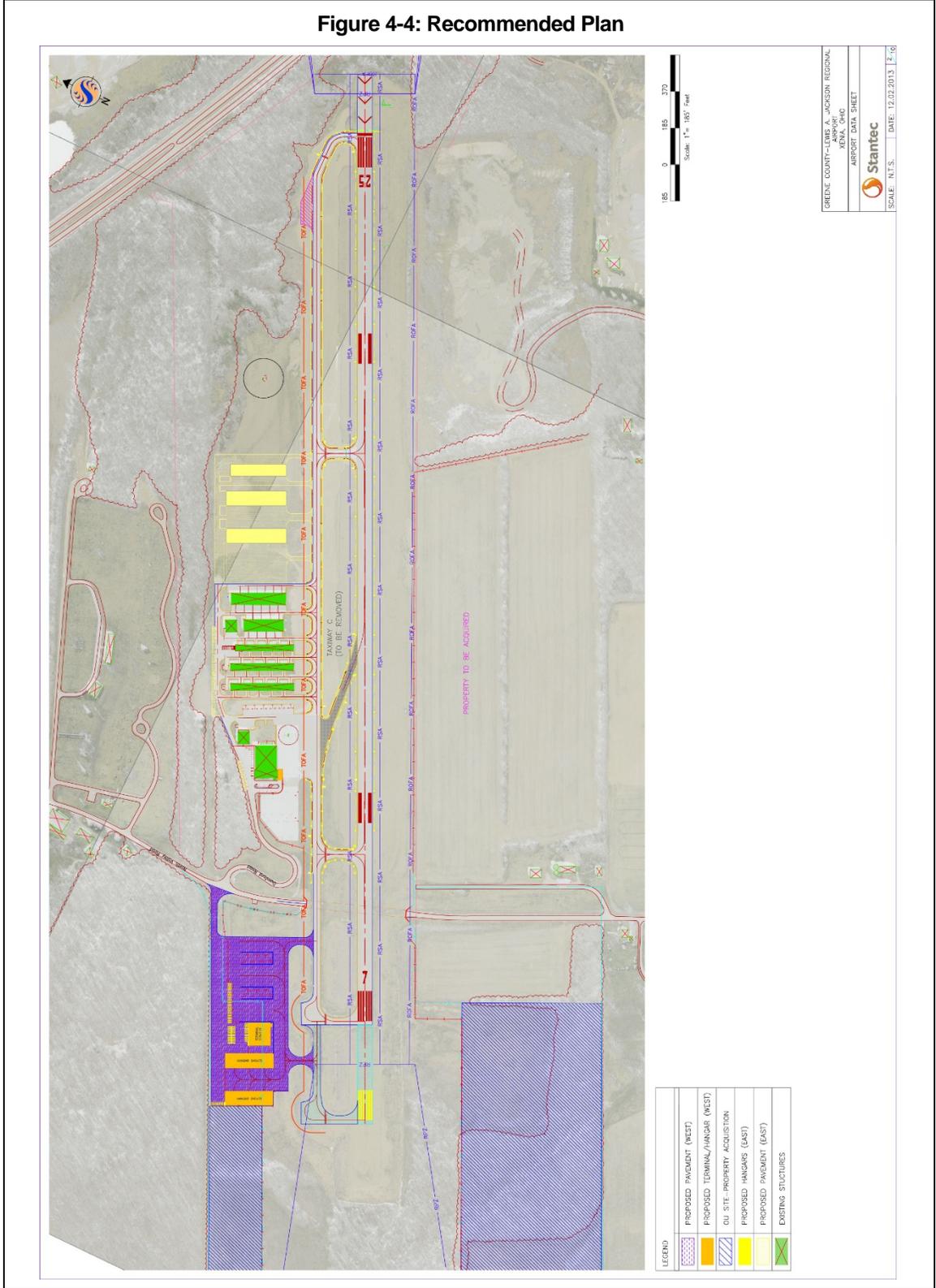
The process of selecting a development concept for the airport begins with identifying alternatives for meeting the future needs of the airport followed by an evaluation of each alternative. Evaluation of the alternatives included discussions with the airport staff, the airport planning committee, and key airport stakeholders. Input from all of these groups was used to improve the alternatives. For example, suggestions from representatives of MacAir were incorporated into the preferred alternative by increasing the size of the terminal building and altering the design of the Runway 25 run-up area. As each of the alternatives was developed and evaluated in this chapter, clear preferences and adjustments to each began to emerge as a result of their impact on certain criterion.

To make the most out of costly airport expansion related to the terminal complex development, it is recommended that the airport purchase the entire parcel of land owned by Ohio University west of Runway 7. Associated infrastructure items such as taxiway, taxilane, apron, hangar, tie-down, and auto parking would be built alongside the new terminal building. The new terminal, conventional hangars, added tie-downs and associated development will foster growth of based aircraft and financial success of the airport. These improvements would complement existing airport infrastructure, which would remain as is with the exception of auto parking enhancements.

It is recommended that the planned "East 40" development be implemented in order to provide an even wider range of facilities to current and prospective airport users, while simultaneously maximizing available land at Greene County – Lewis A. Jackson Regional Airport. Additionally, upon FAA review of the Airport Layout Plans, it was determined that Taxiway "C" does not comply with design standards and therefore should be removed.

The preferred alternatives discussed in this chapter, and illustrated as **Figure 4-4: Recommended Plan**, will be shown on the Airport Layout Plans, which are included in Chapter 7 of this report. Additionally, the next chapters will review the land use and environmental aspects of the preferred development plan as well as address any existing environmental concerns. Finally, the development plan of execution will include phasing and costs for implementing each recommended project as well as a financial plan to discuss how capital and revenue can be made available to support airport development.

Figure 4-4: Recommended Plan



## Environmental Overview

In addition to identifying airport projects that are financially and technically sound, an important part of the master planning process is to consider potential significant adverse impacts upon the environment that may occur as a result of the proposed future airport development. Part 40 of the Code of Federal Regulations, Section 1501.2 states, “Agencies shall integrate the National Environmental Policy Act (NEPA) process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.” Accordingly, identifying potential environmental impacts of proposed airport projects has become an integral part of the master planning process.

This environmental overview has been prepared to identify potential environmental concerns at the Greene County - Lewis A. Jackson Regional Airport and the surrounding area to assist in the avoidance or minimization of any significant adverse environmental effects that might be caused by future airport projects. This environmental overview discusses potential environmental impacts relating to the following proposed improvements identified in Chapter 4, “Alternative Development Concepts.” The improvements proposed within the 20-year planning period include the following:

- Construct a run-up area and by-pass taxiway adjacent to the parallel taxiway near the end of Runway 25
- Construct a new Terminal Building of approximately 12,700 square feet (two stories) on the west side of the airport
- Construct additional T-hangars and conventional hangars
- Construct a transient apron area of approximately 230' x 185' west of the existing Terminal Building
- Construct approximately 163 additional auto parking spaces: 57 spaces near the proposed West Terminal building; 56 spaces near the existing Terminal Building; and 50 spaces northwest of the T-hangars
- Construct an aircraft tie-down apron of approximately 430' x 220' for 14 tie-downs west of North Valley Road
- Construct an aircraft ramp of approximately 300' x 205' for 20 tie-downs east of the existing Terminal Building

- Construct a pavilion/observation deck for visitors
- Construct a perimeter wildlife fence around the airport
- Work with Regional Planning and other local agencies to extend existing bike trails to the airport

The previous master planning efforts studied the need and justification for extending Runway 7-25 to a length of 5,000 feet to better meet the requirements of current and future larger aircraft serving the airport. At 4,500 feet, Runway 7-25 sometimes requires larger aircraft to reduce their load in order to safely depart, especially in hotter months. While this was also considered during the current planning process, we determined that the existing runway length accommodates most of the operations at the airport and, based upon the 20-year forecast, there is insufficient justification for extending the runway during the planning period. A runway extension is shown on the Airport Layout Plan (ALP) in order to preserve this option to the extent practicable should conditions change and runway extension is justified in the future. By showing a planned runway extension on the ALP, the airport authority protects the airspace, preserves the surrounding land for the runway extension, and provides flexibility in terms of options in the future. However, this development was not considered in this Environmental Overview.

To accommodate future airport development, the proposed improvements include the acquisition of Ohio University property (113 acres), which includes much of the area west of North Valley Road.

## 5.1 Environmental Impact Categories

While this environmental overview is not intended to satisfy environmental clearance requirements outlined in Federal Aviation Administration (FAA) Order 1050.1E, *Environmental Impacts: Policies and Procedures*, or to fulfill the requirements of the National Environmental Policy Act (NEPA), it does consider each of the potential environmental impact categories included in FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*, and FAA Order 1050.1E, which would enable follow-on environmental review (i.e., NEPA) and/or implementation of the required permitting processes.

These impact categories are:

- Air Quality
- Biotic Resources/Federally-listed Endangered and Threatened Species
- Coastal Resources
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act: Section 4(f)

- Energy Supplies, Natural Resources, and Sustainable Design
- Farmlands
- Floodplains
- Hazardous Materials, Pollution Prevention, Solid Waste
- Historical and Archaeological Resources
- Light Emissions and Visual Impacts
- Noise
- Socioeconomic Impacts/Environmental Justice and Children's Environmental Health and Safety Risks
- Water Quality
- Wetlands
- Wild and Scenic Rivers
- Secondary (Induced) Impacts/Cumulative Impacts

Each of these impact areas is discussed in further detail in this chapter. FAA Order 1050.1E outlines types of impacts and thresholds that determine if an impact is considered to be significant. In general projects fall into one of the following three categories:

*Categorical Exclusions* – Projects that are categorically excluded include those actions that have been found under normal circumstances to have no potential for significant adverse environmental impact.

*Actions Normally Requiring an Environmental Assessment* – Projects that normally require an environmental assessment are actions that have been found to sometimes have significant adverse environmental impacts.

*Actions Normally Requiring an Environmental Impact Statement (EIS)* – If a project is found to have significant adverse impacts during the preparation of an Environmental Assessment, the FAA can determine that an Environmental Impact Statement is required to investigate in greater detail a project's potential environmental impacts.

This environmental overview does not constitute a formal Environmental Assessment (EA) or Environmental Impact Statement (EIS). For those proposed airport projects that are not categorically excluded from further environmental review, additional environmental analyses will be conducted and documented in a formal Environmental Assessment (EA) or Environmental Impact Statement (EIS), as necessary.

The following sections discuss the preliminary evaluation of the recommended airport development projects for each of the environmental impact categories included in FAA Order 1050.1E.

## 5.2 Air Quality

The National Environmental Policy Act of 1969 (NEPA), the Clean Air Act (CAA), as amended, and Title 49 U.S.C. 47106 (c) (1) (B), as amended (formerly sections 509 (B) (5) and (B) (7) of the Airport and Airway Improvement Act of 1982, as amended; PL 97-248) are the primary laws that apply to air quality. NEPA requires federal agencies to prepare an environmental document (i.e., environmental impact statement (EIS) or environmental assessment (EA) for major federal actions that have the potential to affect the quality of the environment, including air quality).

The CAA established National Ambient Air Quality Standards (NAAQS) for six pollutants, termed “criteria pollutants.” The six pollutants are: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulates (PM<sub>10</sub> and PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). The CAA requires each state to adopt a State Implementation Plan (SIP) to achieve the NAAQS for each pollutant within time frames established under CAA. Greene County - Lewis A. Jackson Regional Airport is located in Greene County, Ohio, which is currently in attainment for all criteria pollutants, except PM<sub>2.5</sub> and 8-hour Ozone. Greene County had been designated “nonattainment” for both PM<sub>2.5</sub> and 8-hour Ozone. However, the county was re-designated as a Maintenance Area for PM<sub>2.5</sub> on September 26, 2013 and re-designated as a Maintenance Area for 8-hour Ozone on August 13, 2007 (EPA, 2013). In addition to NEPA, the Clean Air Act of 1990 Amendments required the Environmental Protection Agency (EPA) to issue rules that would ensure that federal actions conform to the appropriate State Implementation Plan. The General Conformity Rule establishes the procedures and criteria for determining whether certain federal actions conform to state or EPA (federal) air quality implementation plans. To determine whether conformity requirements apply to a proposed federal action, the following must be considered: the non-attainment or maintenance status of the area; type of pollutant or emissions; exemptions from conformity and presumptions to conform; the project’s emission levels; and the regional significance of the project’s emissions. FAA actions are subject to the General Conformity Rule. Because the airport is in compliance for all but two pollutants and is designated “maintenance” for those two pollutants, General Conformity requirements apply, unless the project is exempt, presumed to conform, or does not exceed emission thresholds. Based on current projections, the Greene County - Lewis A. Jackson Regional Airport is expected to have only 42,900 total annual aircraft operations by 2032. This is far less than the threshold criteria of 180,000 established for general aviation airports, at or above which a detailed air quality analysis is required for NEPA purposes. It is recommended that an “applicability analysis” be discussed with the FAA prior to

any proposed development to determine if further actions are required to satisfy General Conformity Rule requirements.

### 5.3 Biotic Resources/Federally Listed Endangered and Threatened Species

Section 7 of the Endangered Species Act (ESA), as amended, applies to federal agency actions and requires each agency to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any federally listed endangered or threatened species or result in the destruction or adverse modification of critical habitat. In addition, the Fish and Wildlife Coordination Act requires that agencies consult with state wildlife agencies and the U.S. Fish and Wildlife Service concerning the conservation of wildlife resources where the water or any stream or other water body is proposed to be controlled or modified by a federal agency or any public or private agency operating under a federal permit.

There are 47 federally listed, candidate, or proposed threatened, endangered, and rare plant and animal species which are known to occur in Greene County, Ohio. These species are identified in **Table 5-1**. As part of the NEPA documentation, an on-site biotic survey would be conducted prior to any construction to identify the potential for any of the species listed in Table 5-1, or their habitats, to exist within the proposed project areas. If these species, or their habitats, are located within the proposed project areas and would potentially be impacted by proposed development, then Section 7 consultation with the agencies may be required.

However, according to the Ohio Department of Natural Resources (ODNR) – Division of Wildlife’s Ohio Natural Heritage Database, there are no known occurrences of any rare or endangered species within a one mile buffer around the airport area. The airport site is about 0.5 miles south of the Little Miami State and National Scenic River. ODNR has no records of any additional unique ecological sites, geologic features, animal assemblages, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one-mile radius of the project area. ODNR also has no records for Indiana Bat (*Myotis sodalis*) capture locations within a five-mile radius or hibernacula within a 10-mile radius of the proposed development sites (see ODNR correspondence included in **Appendix B**). The use of the organization’s database does not represent a comprehensive biological inventory, as there may be occurrences of species in the vicinity of the project area that have not been reported. Field studies of the project area would be required as part of the NEPA documentation for proposed airport projects to verify that there are no potential impacts to threatened and endangered species or sensitive biotic habitat as a result of future airport development.

**Table 5-1: Threatened, Endangered, and Rare Species in Greene County, Ohio**

Common Name	Scientific Name	Federal Status	State Status
<i>Plants</i>			
Red Baneberry	<i>Actaea rubra</i>	T	
Ear-leaved-foxglove	<i>Agalinis auriculata</i>	E	FSC
Rock Serviceberry	<i>Amelanchier sanguinea</i>	T	
Southern Hairy Rock Cress	<i>Arabis pycnocarpa var. adpressipilis</i>	P	
Fen Indian-plantain	<i>Arnoglossum plantagineum</i>	P	
Wall-rue	<i>Asplenium ruta-muraria</i>	T	
Limestone Savory	<i>Calamintha arkansana</i>	T	
Little Yellow Sedge	<i>Carex cryptolepis</i>	P	
Slender Sedge	<i>Carex lasiocarpa</i>	P	
Midland Sedge	<i>Carex mesochorea</i>	T	
Round-leaved Dogwood	<i>Cornus rugosa</i>	P	
Tennessee Bladder Fern	<i>Cystopteris tennesseensis</i>	P	
Tufted Hair Grass	<i>Deschampsia cespitosa</i>	P	
Carolina Whitlow-grass	<i>Draba reptans</i>	T	
Small Fringed Gentian	<i>Gentianopsis procera</i>	P	
Baltic Rush	<i>Juncus balticus</i>	P	
Mountain-rice	<i>Piptatherum racemosum</i>	P	
Prairie Rattlesnake-root	<i>Prenanthes racemosa</i>	P	
Blue-leaved Willow	<i>Salix myricoides</i>	P	
False Melic	<i>Schizachne purpurascens</i>	T	
Midwest Spike-moss	<i>Selaginella eclipses</i>	T	
Royal Catchfly	<i>Silene regia</i>	T	
Great Plains Ladies'-tresses	<i>Spiranthes magnicamporum</i>	P	
Arbor Vitae	<i>Thuja occidentalis</i>	P	
Seaside Arrow-grass	<i>Triglochin maritimum</i>	T	
Marsh Arrow-grass	<i>Triglochin palustris</i>	P	
Three-birds Orchid	<i>Triphora trianthophora</i>	P	
Sharp's Green-cushioned Moss	<i>Weissia sharpii</i>	E	
White Wand-lily	<i>Zigadenus elegans</i>	P	
<i>Animals</i>			
Seepage Dancer	<i>Argia bipunctulata</i>	E	
Upland Sandpiper	<i>Bartramia longicauda</i>	E	
Sedge Wren	<i>Cistothorus platensis</i>	SC	
Spotted Turtle	<i>Clemmys guttata</i>	T	

**Table 5-1: Threatened, Endangered, and Rare Species in Greene County, Ohio**

Kirtland's Snake	<i>Clonophis kirtlandii</i>	T	FSC
Snuffbox	<i>Epioblasma triquetra</i>	E	FE
Tonguetied Minnow	<i>Exoglossum laurae</i>	T	
Least Bittern	<i>Ixobrychus exilis</i>	T	
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	SC	
Creek Heelsplitter	<i>Lasmigona compressa</i>	SC	
Indiana Bat	<i>Myotis sodalis</i>	E	FE
Beer's Noctuid	<i>Papaipema beeriana</i>	E	
Clubshell	<i>Pleurobema clava</i>	E	FE
Virginia Rail	<i>Rallus limicola</i>	SC	
Eastern Massasauga	<i>Sistrurus catenatus</i>	Candidate	FC
Fawnsfoot	<i>Truncilla donaciformis</i>	T	
Northern long-eared Bat	<i>Myotis septentrionalis</i>	Proposed E	
Rayed bean	<i>Villosa fabalis</i>	E	

KEY: P – Potentially Threatened  
 T – Threatened  
 E – Endangered  
 SC – Species of Concern  
 SI – Special Interest  
 FT – Federally Threatened  
 FE – Federally Endangered  
 F – Federal Only

Source: Ohio Department of Natural Resources' Natural Heritage Database.

## 5.4 Coastal Barriers/Coastal Zone Resources

The Coastal Barriers Resources Act and the Coastal Zone Management Act govern federal activities involving or affecting coastal resources. These environmental issues are not a concern for the proposed improvements at Greene County - Lewis A. Jackson Regional Airport because the study area is not located in or near any coastal zones.

## 5.5 Compatible Land Use

FAA Order 5050.4B states that the compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of noise impacts related to that airport.

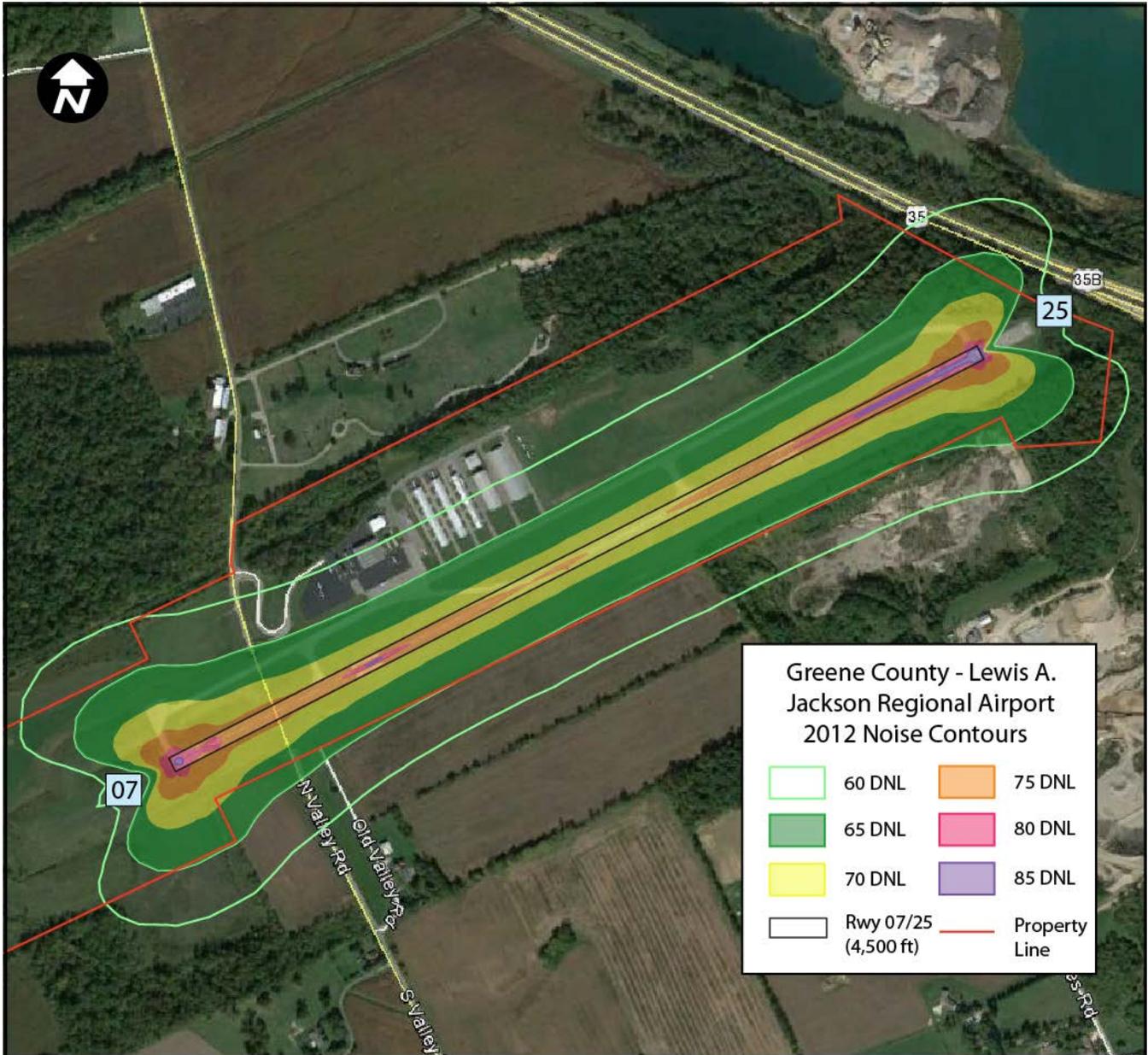
Current (2012) and ultimate (2032) noise contours were developed as part of the noise analysis discussed in Section 5.14 to evaluate the impact of aircraft noise on sensitive land uses in the airport area. Sensitive land uses include: residential areas, parks, hospitals, churches, amphitheaters, and libraries. FAA Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports*, has identified land use compatibility guidelines that relate types of land uses to airport noise levels. Based on these guidelines, all land uses are considered to be compatible with yearly day-night sound levels (DNL) below 65. As shown on **Figure 5-1** and **Figure 5-2**, no existing residences or other sensitive land uses are currently, or would ultimately be, exposed to 65 or greater noise levels by 2032 using the DNL methodology. In 2032, the vast majority of the 65 DNL noise contour falls over existing airport property. A very small portion of the 65 DNL noise contour extends off airport property on the east, but is located within the right-of-way for U.S. Route 35. Near North Valley Road, another portion of the 65 DNL contour falls outside airport property over existing land used for farming. As a result, it does not appear that there will be incompatible land use impacts as a result of the existing or ultimate development of the airport.

Compatible land use impacts also can occur if the proposed airport projects result in other impacts exceeding thresholds of significance which have land use ramifications, such as disruption of communities; residential and business relocations; and induced socioeconomic impacts (FAA Order 1050.1E). **Figure 5-3** identifies the existing land use in the vicinity of the airport. Land uses adjacent to the airport include a cemetery to the north and gravel pits to the southeast and northeast, with agriculture and wooded areas being the predominant land use in other areas around the airport. The only residences in the immediate vicinity of the airport are a few widely scattered residences associated with the adjacent agricultural areas, mostly south of the airport. The closest home is located along old North Valley Road approximately 1,150 feet south of the runway. The closest housing development would likely be those homes around Country Club of the North, which are as close as 3,760 feet west/northwest of the Runway 7 end.

The proposed improvements to the airport do not result in any community disruptions, residential or business relocations, or induced socioeconomic impacts. Therefore, there would be no incompatible land use impacts resulting from the proposed airport projects.

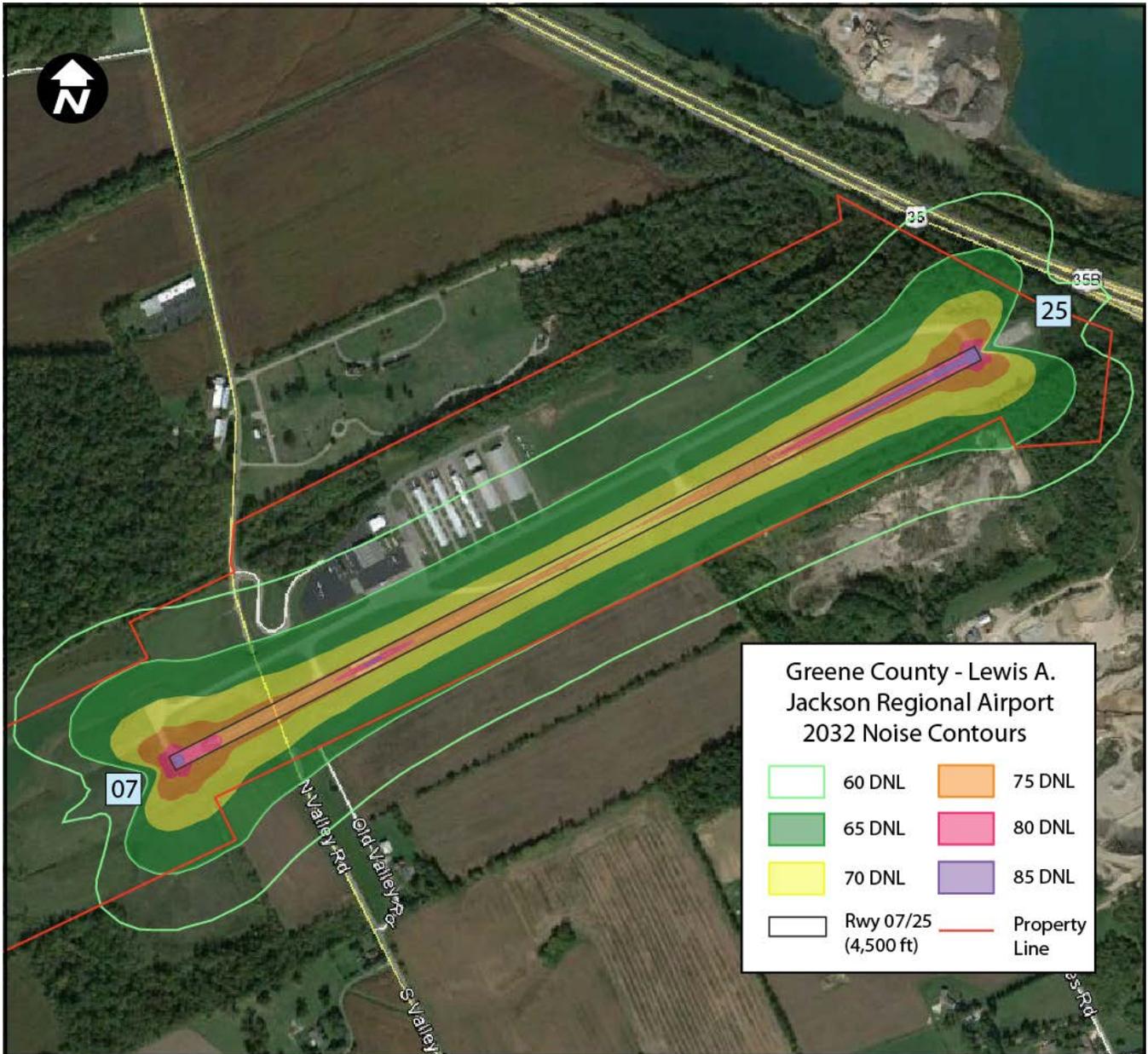
Another potential land use concern at airports is the presence of existing obstructions within the navigable airspace. Obstructions include towers, buildings, storage tanks, supporting structures of overhead wires, trees, etc. There are currently trees located in the Transitional Surfaces to the sides of the approach areas at both ends of the runway that are obstructions to Part 77. These surfaces should be cleared of obstructions.

Figure 5-1: Greene County - Lewis A. Jackson Regional Airport Noise Contours for 2012



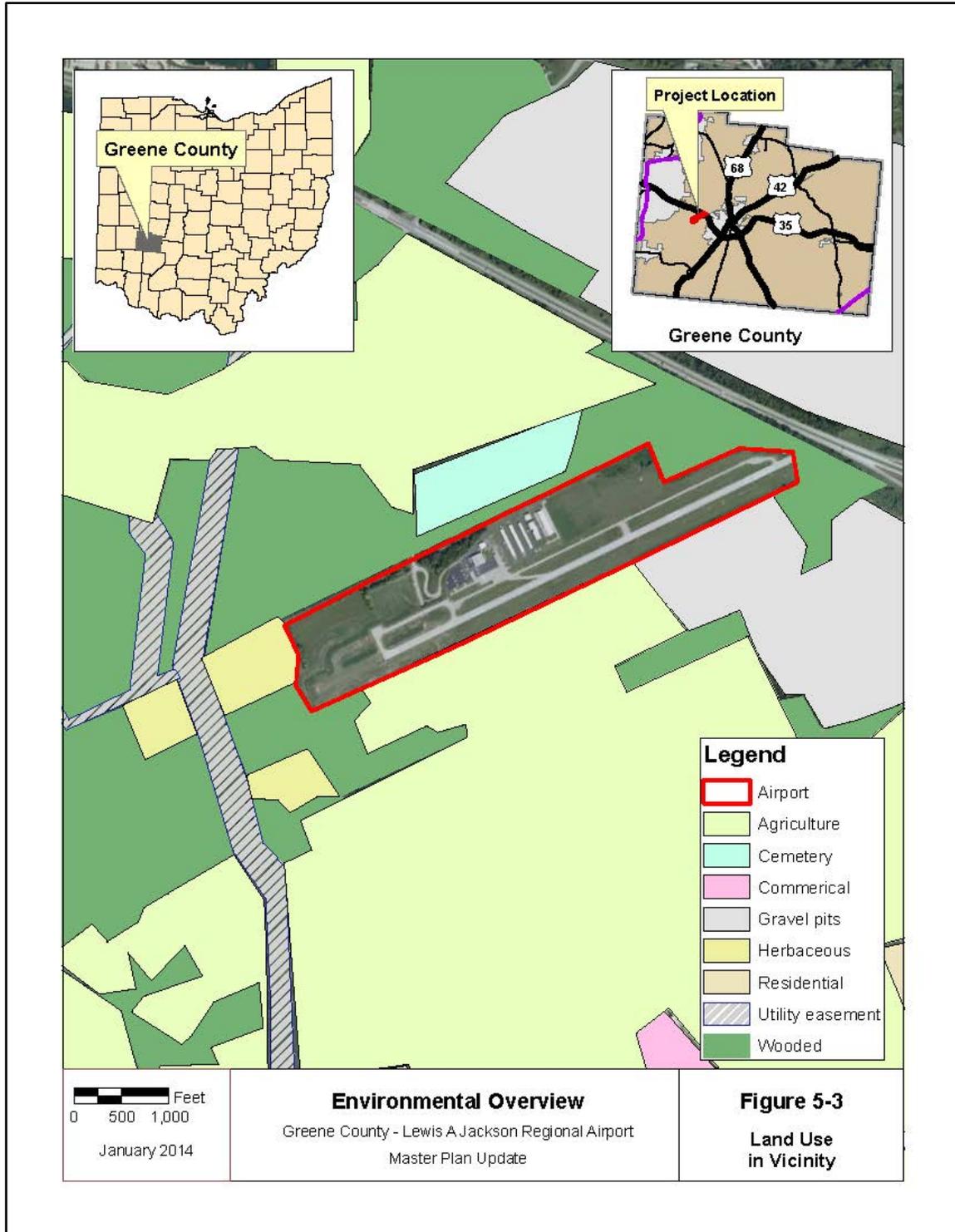
Source: Google Maps, CDM Smith, FAA INM

Figure 5-2: Greene County - Lewis A. Jackson Regional Airport Noise Contours for 2032



Source: Google Maps, CDM Smith, FAA INM

Figure 5-3: Land Use in Vicinity of Airport



## 5.6 Construction Impacts

Construction impacts are temporary, and the construction period is relatively short when compared to the life expectancy of public improvement projects. Specific impacts that would occur as a result of construction activities include noise from construction equipment on the site, noise and dust from the delivery of materials through local streets, disposal of soil, air pollution from construction equipment exhaust and dust, water pollution from erosion, and temporary disruption of utility service due to construction work. To the extent necessary, mitigation of construction impacts would be accomplished by incorporating in the project specifications specific requirements for the contractor(s). These requirements include the provisions of *Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control* from FAA Advisory Circular 150/5370-10, in addition to the following requirements:

1. Preparation of a storm water pollution prevention plan.
2. Submittal of a Notice of Intent to apply for a general permit under the Ohio EPA regulations governing temporary construction impacts.
3. Construction of fabric silt fences and/or straw bales around the perimeter of grading areas, at the ends of culvert pipes, and at regular intervals across all drainage ditches leading from the graded areas to intercept storm water and remove soil from the surface water runoff prior to reaching flowing streams.
4. Temporary Detention Ponds to temporarily hold runoff to permit silt to be deposited after a storm prior to reaching existing streams.
5. Plans to minimize the size of the areas being graded at one time to lessen the amount of soil erosion that can occur. These areas will need to be seeded and mulched as soon as possible after construction in these areas is completed and approved - either with temporary materials or permanent materials.
6. No temporary or new asphalt plants or concrete plants would be permitted on site, so no additional smoke or fumes would be imposed upon the environment from these facilities. All trucks hauling stone or asphalt to the site would need to be covered to eliminate or minimize dust and fumes.
7. The contractor(s) would be required to have spill and containment plans for refueling their construction vehicles.

Construction will require workers and machinery in and around the operations of the airport. In some cases, runway or taxiway closures may be required for short periods of time. FAA guidelines provided in FAA Advisory Circular 150/5370/2F, *Operational Safety on Airports During Construction*, would be enforced where applicable. A construction safety and phasing plan would be prepared for each project and submitted to the FAA for their review and approval. Runway or taxiway closure conditions would be kept to a minimum in an effort to minimize inconvenience to airport users.

## 5.7 Department of Transportation Acts, Section 4(f)

The Department of Transportation Act of 1966, Section 4(f), recodified at 49 USC, Subtitle I, Section 303, prohibits the taking of public parkland, recreation areas, wildlife and waterfowl refuges, or historic sites unless there is “no feasible and prudent alternative.” None of these types of areas are currently present in the airport area and none would be acquired or impacted by the proposed airport improvements.

## 5.8 Energy Supplies, Natural Resources, and Sustainable Design

### Energy Supply

In accordance with 40 Code of Federal Regulations (CFR) 1502.16(3) and (f) and Executive Order 13123, *Greening the Government Through Efficient Energy Management* (64 Federal Register 30851, dated June 8, 1999), Federal agencies must assess each alternative’s energy requirements, energy conservation, and the use of natural or consumable resources in reviewing the environmental effects of a proposed action. Also, each federal agency is encouraged to expand the use of renewable energy in its facilities and its actions.

FAA Order 1053.1B, *Policies and Procedures for Energy Planning and Conservation*, provides for assessing energy demands related to airport improvement projects. The effects of airport development on energy supply are typically related to the amount of energy required for:

- Stationary facilities (such as terminal building heating and cooling and airfield lighting)
- Movement of air and ground materials

LED lighting can be used for the taxiway lighting to reduce costs, and the new terminal building would likely be much more efficient than the existing building. Dayton Power & Light Co. advised us that they would have no difficulty in

meeting the anticipated additional energy demands for the proposed development.

The proposed hold apron and bypass taxiway would help minimize or eliminate current delays in aircraft operations at the east end of the runway, and hence energy waste, by permitting some aircraft to gain access to the runway for take-off while other aircraft hold for pre-flight checks. In addition, energy consumption by aircraft and vehicles is not expected to significantly increase as a result of the proposed airport development.

It is extremely important to consider using sustainable design methods for all new development. For some types of development this is difficult. However, the new terminal building can incorporate some sustainable design methods. In addition, taxiway lighting and ramp lighting can utilize LED fixtures that are more energy efficient and involve less maintenance.

### Natural Resources

The impacts of airport development on natural resources are primarily related to the use of materials such as gravel, fill dirt, etc. that are required for construction. It is anticipated that the natural resources required for the construction of the proposed terminal building, taxiways, hangars, and apron are available in sufficient quantities locally. There are several stone quarries adjacent to the airport that have had no problems supplying aggregates and asphalt mixes for use on past airport projects, and we expect that these quarries will be available to do so for many years.

Because oil is a limited resource, it is important to minimize the use of oil as much as possible. With the price of oil continuing to increase, the cost of Portland cement concrete pavements is beginning to compare favorably with that of bituminous pavements. Design of future pavements should consider this alternative pavement. While there would also be minimal increases in fuel consumption by ground vehicles during snow removal and mowing operations, these increases are expected to be partially offset by savings resulting from more efficient operations resulting from less congestion. In addition, aircraft and vehicles are becoming more energy efficient.

Currently, water at the airport is provided by a well on the airport property near the terminal area. No new development is proposed in that area. The county has plans to extend public water service to the airport at a future date. Until that time, any proposed development requiring water that is located west of North Valley Road or east of the existing hangars will need to obtain it from new wells. This would require permitting from Greene County.

## 5.9 Farmlands

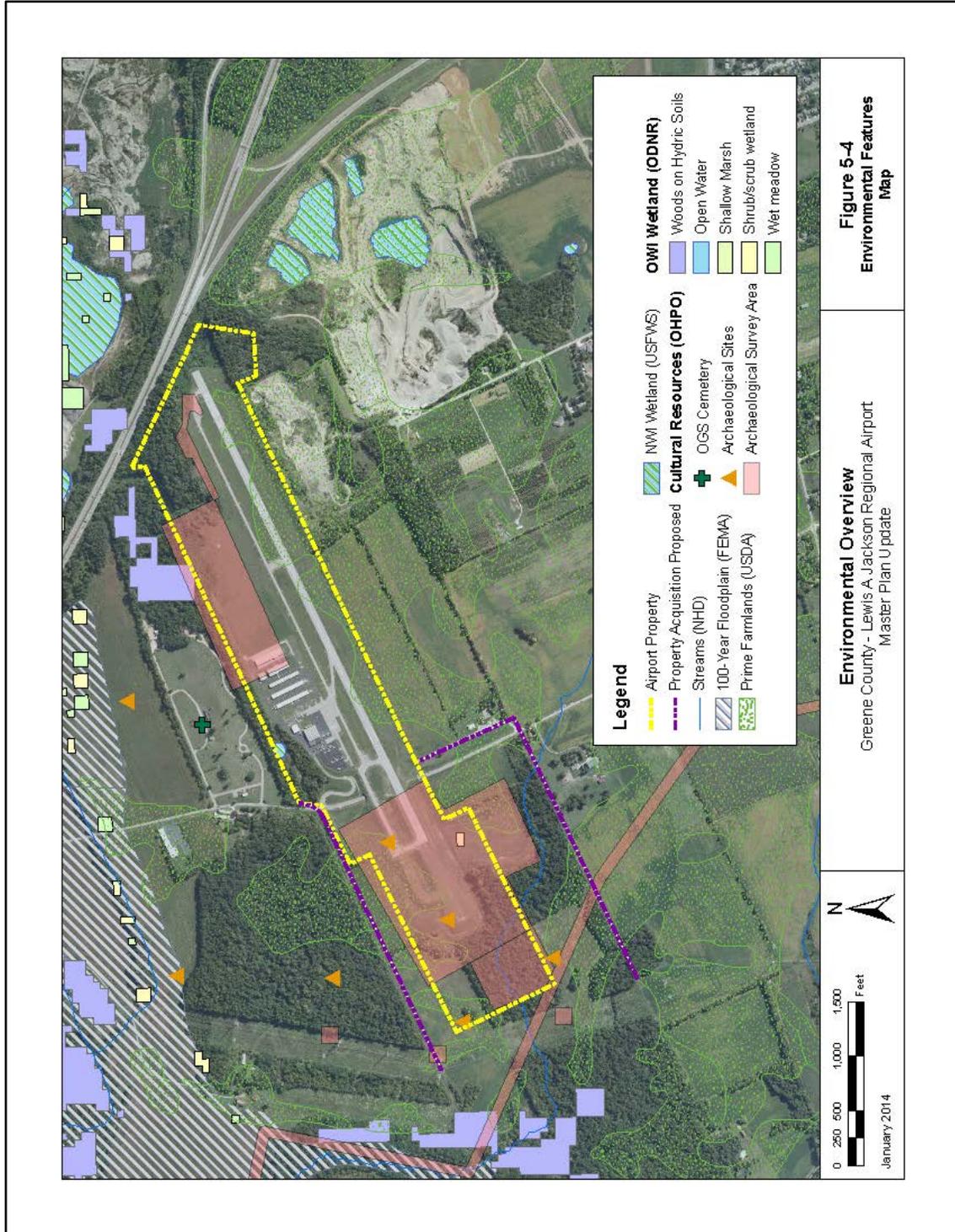
The Farmland Protection Policy Act (FPPA) regulates federal actions with the potential to convert farmland to nonagricultural uses. The proposed airport development projects will either occur on current airport property, which is dedicated to airport use, or on neighboring property that is proposed for acquisition. The proposed land acquisition parcels are currently vacant and not used for agricultural purposes. However, the current use of the property is not the only factor that defines prime or unique farmland.

There are five prime farmland soil types found on current and proposed airport property (see Custom Soil Resource Report in Appendix B). These soils include: Ockley silt loam, 2 to 6 percent slopes (OCB), Ockley silt loam, 2 to 6 percent slopes, moderately eroded (OcB2), Rush silt loam, 2 to 6 percent slopes (RtB), Russell-Miamian silt loams, 2 to 6 percent slopes (RvB), and Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded (RvB2). **Figure 5-4** identifies the prime farmland soils within the airport property, as well as the areas of proposed airport development. Any new development on the airport property would not result in a farmland impact since this property has already been committed to airport use. However, there is prime farmland soil located in the area designated for acquisition west of North Valley Road and to the north, west, and south of the current airport property. Any prime or unique farmland acquired by the Airport Authority for the airport would likely be considered a permanent conversion of agricultural land to a non-agricultural use, necessitating FPPA coordination. However, the prime farmland areas west and south of the airport property, and much of the area north of the airport property, could continue to be used for farming by lease agreement, as the areas would not be required for development. In accordance with FPPA, a Farmland Conversion Impact Rating Form (AD-1006) would need to be prepared and submitted to the Natural Resources Conservation Service field office for completion. Form AD-1006 contains a scoring system to determine the significance of potential project impacts. The results of the FPPA coordination would be included as part of the NEPA documentation.

## 5.10 Floodplains

Executive Order 11988 directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. Agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on 100-year floodplains (7 CFR Section 650.250).

Figure 5-4: Environmental Features



According to the Flood Insurance Rate Maps (FIRM) for Greene County, Ohio, dated March 17, 2011 (Map Numbers: 39057C0130D, 39057C0120D, 39057C0109D, and 39057C0140D), there are no 100-year floodplains within existing airport property (see Figure 5-4 and the FIRM maps in Appendix B). A small portion of the 113-acre Ohio University parcel that is to be acquired lies within a 100-year floodplain; however, the proposed airport development is not within this floodplain area. The closest proposed airport development would be approximately 90 feet higher in elevation and more than 2,000 feet from the nearest point of the 100-year floodplain. Therefore, there no floodplain impacts are anticipated as a result of the proposed projects at Greene County - Lewis A. Jackson Regional Airport.

## 5.11 Hazardous Materials

The two statutes of most importance in ensuring that the construction and operation of airport facilities and navigational aids do not impact hazardous materials are the Resource Conservation and Recovery Act (RCRA), as amended by the Federal Facilities Compliance Act of 1992, and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended (also known as Superfund). RCRA governs the generation, treatment, storage, and disposal of hazardous waste and CERCLA provides for the cleanup of any releases of a hazardous substance (excluding petroleum) into the environment. FAA actions to fund, approve, or conduct an activity require consideration of hazardous material and solid waste impacts.

To identify the presence of potential hazardous materials concern sites within one mile of the Greene County - Lewis A. Jackson Regional Airport, a regulatory database search was conducted (See EDR Report in Appendix B). As a result of this search, 15 sites were identified as having potential hazardous materials concerns. Of these sites, five of those were identified as being on airport property (A1-5). These sites are identified in **Table 5-2** below. Two of the sites are records of soil erosion control plans filed by contractors which were not canceled. One appears to be the well or septic facility, another is for the prior underground storage tank (which was properly removed and closed in accordance with the Bureau of Underground Storage Tank Regulations requirements). The last appears to be a general listing of the airport itself.

Before the airport proceeds in the development of any of the proposed airport projects or acquires any additional property, an Environmental Due Diligence Audit (EDDA) should be performed in accordance with FAA Order 1050.19, *Environmental Due Diligence Audits in the Conduct of FAA Real Property Transactions*. The EDDA will indicate if activities involving hazardous materials have occurred at the site or resulted in environmental contamination. An EDDA is also a form of pre-acquisition protection against CERCLA/RCRA liability and a defense in lawsuits addressing contamination. Based on the results of the

EDDA, a determination will be made as to whether further environmental testing is required. A Phase I Environmental Assessment Report was prepared for an eight-acre portion of the property under consideration for future acquisition south of the airport property and west of North Valley Road (Kilbane Environmental, Inc., May 14, 2004). This was prepared as part of the proposal to obtain borrow materials from this area for the proposed runway and taxiway extension. However, this report only covered a portion of the property being considered for future acquisition. An EDDA should be conducted on the property that has not already been investigated.

**Table 5-2: Potential Hazardous Materials Sites**

ID	Site Name	Database	Relative Elevation	Distance (FT)/Direction
A1, 2, 3, 4, and 5	Airport	OH NPDES(2), OH UIC, FINDS, OH RGA LUST		On Airport Property
6	Boston Bargain Store	EDR (Historic Cleaners)	Lower	Off Airport Property 1,722 ft/WSW
B7	Phillips Sand and Gravel	US AIRS	Higher	Off Airport Property 2,220 ft/ESE
C8	Homecroft Inc.	FINDS	Lower	Off Airport Property 2,221 ft/WNW
C9, C10, and C11	Systech Corp.	MILTS, OH UIC, CERCLIS-NFRAP, RCRA-CESQG, NY MOSF UST, NY MANIFEST	Lower	Off Airport Property 2,221 ft/WNW
B12, B13, and 14	Phillips Sand & Gravel	OH LUST, OH UST, OH RGA LUST	Higher	Off Airport Property 2,494 ft/ SE
15	Valley Asphalt Corp.	OH DERR	Lower	Off Airport Property 3,898ft/ NNW

Source: EDR, 2014.

## 5.12 Historical and Archaeological Resources

The National Historic Preservation Act of 1966 (NHPA), as amended, provides for the preservation of properties that are eligible for inclusion in the National Register of Historic Places. In addition, Section 106 of the NHPA directs the heads of federal agencies, federal departments, or independent agencies that

have direct or indirect jurisdiction over a federal or federally assisted undertaking to “take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.”

The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistorical, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally funded project. Based on a review of the Ohio Historic Preservation Office’s (OHPO) database, there are several prehistoric sites which have been identified within the vicinity of the airport (see OHPO Cultural Resources Map in Appendix B). These sites also are identified on Figure 5-4. In addition, three archaeological studies have been conducted on the airport property. These studies are summarized in **Table 5-3** and the areas investigated for these studies are identified on Figure 5-4.

Although archaeological investigations have been completed for much of the airport, due to the potential presence of archaeological resources in this area, additional investigations would be required for any future development occurring in areas that have not already been investigated in order to fulfill the Section 106 and NEPA requirements. Specifically, Phase I investigations should be undertaken for the areas of proposed development involving the additional access road, parking, terminal building, tie-down apron, and hangars west of North Valley Road on the north side of Runway 7-25, as well as for the areas identified for additional auto parking on the east side of North Valley Road. The results of these investigations should be coordinated with the OHPO.

### 5.13 Light Emissions and Visual Impacts

Light emissions caused by airport-related lighting can create an annoyance to residents in the vicinity of the airport. In general, however, light emissions created by general aviation airports are minimal. As indicated in FAA Order 1050.1E, light emissions are unlikely to have an adverse impact on human activity or the use or characteristics of the protected properties because of the relatively low levels of light intensity compared to background levels associated with most air navigation facilities and other airport development actions.

**Table 5-3: Prior Archaeological Investigations**

Archaeological Investigations	Area Investigated	Recommendations
1. <i>A Phase I Cultural Resources Management Study of Proposed Expansion of Lewis A. Jackson Regional Airport, December 2, 1995</i>	Area (approx. 175 acres) on west side of North Valley Road (directly west of Runway 7-25)	Due to presence of a possible historic site within the project area boundaries, as well as several sites recorded within or near the potential project area boundaries, a Phase I field assessment was recommended prior to proposed expansion to determine the probability of any additional sites being found in the project area, as well as the likelihood that known sites would require additional Phase II assessment.
2. <i>Phase I Archaeological Investigations for an 11.9 ha (29.4 ac) Runway and Taxiway Extension and an 11.0 ha (15.2 ac) Borrow Area at the Lewis A. Jackson Airport, April 25, 2004</i>	Area on west side of North Valley Road for the proposed runway, taxiway and road relocation. Area east of existing T-hangars for a potential borrow area that was not used and possible hangars.	There was one prehistoric archaeological site found within the area investigated for the proposed runway extension. It is an isolated artifact and did not meet the minimum requirements to be considered for National Register of Historic Places (NRHP) eligibility. No future work was recommended for either location.
3. <i>Phase I Archaeology Survey, Borrow Pit Project Area, Lewis A. Jackson Airport, May, 2004. This was for the borrow area for the runway and taxiway extension.</i>	Area west of North Valley Road, (southwest of Runway 7-25) and south of the 11.9 ha survey above.	The Borrow Pit Project area did not contain any significant cultural resources and no further archaeological work was required.

The proposed airport improvements include minor changes to existing airfield lighting systems. These changes would involve the addition of blue colored taxiway lights along the edges of the proposed taxiways, and possible ramp lighting along the edges of the proposed aircraft ramps. The light given off by taxiway lights is not typically considered an annoyance to residents. Ramp lighting would be aimed downward, at the pavement, so as not to blind pilots. As a result, there is little chance that such lighting would be an annoyance to the public. The proposed development during the planning period does not involve installation or relocation of Runway End Identification Lights (bright white strobes

aimed upwards at the ends of the runway), Precision Approach Path Indicators (bright red and white lights aimed upwards near the ends of the runway), or the airport rotating beacon (green and white alternating light aimed upwards). In addition, there is no proposal to install approach lighting systems that could create annoyances.

There would also be additional lighting for the terminal building and auto parking areas. Again, these lights would not typically be aimed outwards or upwards where they could be an annoyance to the public.

Finally, there are few residences on neighboring properties, and these are lower in elevation than the airfield, and south of the existing runway, on the other side of the airport from the proposed development. Therefore, there would be no light impacts to these residences as a result of the proposed improvements.

## 5.14 Noise

The standard practice for evaluating the noise impacts at airports involves the use of the FAA-approved Integrated Noise Model (INM). INM version 7.0d was used in this analysis to develop noise contours for Greene County – Lewis A. Jackson Regional Airport based on operational activity in the current year (2012) and the forecast year (2032).

### Methodology

The INM works by defining a network of grid points at ground level around the airport site. It then selects the shortest distance from each grid point to each flight track and computes the noise exposure generated by each aircraft operation by aircraft type and engine thrust level, and by time of day along each flight track. Corrections are applied for atmospheric acoustical attenuation, acoustical shielding of the aircraft engines by the aircraft itself, and aircraft speed variations. The noise exposure levels for each aircraft are then summed at each grid location to provide a day-night level (DNL), which is the 24-hour average sound level expressed in decibels, including an additional 10-decibel penalty for night-time operations (those occurring between the hours of 10 p.m. and 7 a.m.). The cumulative noise exposure levels at all grid points are then used to plot noise exposure contours for selected values (e.g., 65, 70, and 75 DNL).

The decibel scale from zero to 120 includes most of the range of typical daily sound levels, and is shown in **Table 5-4**.

**Table 5-4: Common Sound Levels**

Decibels	Common Aircraft Sound Level	Common Daily Sound Level
110	B-747 takeoff at 2 miles	Rock band
100	DC-10 takeoff at 2 miles	Gas lawn mower at 3 feet
90	B-727 takeoff at 2 miles	Garbage disposal at 3 feet
80	Learjet 25 takeoff at 2 miles	Shouting at 3 feet
70		Normal speech at 3 feet
60		Large business office
50	Piper Twin Comanche takeoff at 2 miles	Dishwasher in next room

### Noise Contour Mapping

DNL noise levels are indicated by a series of modeled contour lines superimposed on the airport site map. These levels are calculated for designated points on the ground from the weighted summation of the effects of all aircraft operations. Some operations are far enough away from a location that their effect is minimal, while other operations may dominate noise exposure at that location. For example, a location just east of the airport may be affected by an aircraft departure to the east but unaffected by an arrival to the west.

### Operational Activity

Modeling airport noise in INM requires data from parameters such as aircraft operations, fleet mix, runway utilization, operational profiles, and flight tracks. The following is a summary of the 2012 and 2032 operational data used in the noise modeling analysis.

*Aircraft Operations.* The annual operations for the existing year were 38,900, which is approximately 107 operations per day. The annual operations forecast for the year 2032 are estimated to be 42,900, which is approximately 117 operations per day.

*Aircraft Fleet Mix.* The fleet mix consists of various categories of aircraft operating at Greene County - Lewis A. Jackson Regional Airport, as shown in **Table 5-5**. These estimates were based on the existing and projected fleet mix detailed in the Forecasts of Aviation Demand chapter.

**Table 5-5: Aircraft Fleet Mix**

	Year	Single-engine	Multi-engine	Jet	Helicopter
Existing	2012	89%	8%	1%	2%
Forecast	2032	87%	8%	3%	2%

Source: Greene County – Lewis A. Jackson Regional Airport records and CDM Smith

*Runway Utilization.* Greene County – Lewis A. Jackson Regional Airport's runway is aligned with the prevailing winds of the region, and, with no air traffic control tower, runway use is determined by the pilot in command of each aircraft. In general, pilots select the runway that permits them to operate their aircraft into the

wind. Historic wind data indicates that winds are slightly more favorable for operations on Runway 7 than Runway 25, so runway utilization was split between the two runways using these percentages. With an assumed 5 percent of operations occurring at night, **Table 5-6** shows the allocation of runway use. These utilization rates are not expected to change throughout the forecast period.

	Day	Night
Runway 7	53%	53%
Runway 25	47%	47%

Source: Airport Records

*Approach and Departure Profiles.* Approach and departure profiles illustrate an aircraft's altitude along its flight path. INM's vast database includes information regarding standard approach and departure profiles for the aircraft in this analysis.

*Flight Tracks.* Flight tracks project an aircraft's flight path as if shown on the surface. Due to meteorological conditions, aircraft type, stage length, air traffic control instructions, and pilot judgment, flight tracks are unique to each operation. Generalized flight tracks were developed for Greene County – Lewis A. Jackson Regional Airport based on the aircraft operations and aircraft fleet mix data. These flight tracks took into account local traffic patterns, variably entry and exits to the pattern, and arrival and departure paths used by aircraft.

## Noise Exposure Impacts

FAA Order 1050.1E stipulates that when conducting noise analysis with INM, noise contours for 65, 70, and 75 DNL should be developed for existing and future airport conditions. Noise levels greater than 65 DNL are generally considered unacceptable for noise-sensitive land uses, such as residences, hospitals, and schools. The existing and forecast year noise contours modeled for this analysis are displayed as Figure 5-1 and Figure 5-2, respectively. The aviation activity level at Greene County - Lewis A. Jackson Regional Airport results in relatively low noise levels. In fact, modeled noise levels are so low that noise from arriving aircraft do not appear in the 65 DNL and higher noise contours. In order to depict noise from arriving aircraft, the 60 DNL noise contour is included in the figures, even though this noise level is not regarded as an unhealthy impact.

Throughout the forecast period, the 75 DNL area encompasses approximately 12 acres; the 70 DNL area covers approximately 38 acres; and, the 65 DNL covers approximately 83 acres. Although a small amount of 65 DNL noise contour falls outside the airport property line, the affected areas are small in size and do not contain incompatible land uses. At the east end of the airport, a small part of the

65 DNL noise contour falls to the south of the runway over a small portion of the existing aggregate quarry, which is as much as 70 feet below the runway and considered a compatible land use. North of the runway, on the east end, another small part of the 65 DNL falls on the existing right-of-way for U.S. Route 35, which is also considered compatible with airport noise.

At the west end of the runway, a small part of the 65 DNL noise contour crosses the airport property line south of the runway. This area includes mostly farmland and a part of North Valley Road, both of which are compatible with this airport noise.

Even the additional 60 DNL contour line, which is typically compatible with all land uses, falls mostly on the airport property. In the areas where it crosses airport property, the contour falls on aggregate quarries, U.S. Route 35, and farmland. The low level of airport noise represented by the 60 DNL contour does not impact any land uses around the airport.

Land acquisition associated with the preferred development alternative will further reduce the amount of noise that extends beyond the airport property line.

## 5.15 Social Impacts/Environmental Justice, and Children's Environmental Health and Safety Risks

### Social Impacts

The purpose of a social impact analysis is to determine the effect of airport development on the human environment. The types of social impacts typically evaluated include the following:

- Relocation of residences and/or businesses.
- Alterations in traffic patterns that may permanently or temporarily restrict traditional community access.
- Division or disruption of established communities.
- Disruption of orderly, planned development.
- Creation of appreciable change in employment.

Some of the proposed airport development projects will occur on adjacent property to be acquired by the airport. However, the proposed land acquisition is currently vacant of any development. There would be no relocation of residences or businesses.

While a new access road into the airport is proposed for development on the west side of North Valley Road, there are no proposed changes in public roads. There

will be no alternations in traffic patterns or disruption of established communities. We are not aware of any plans for development that would be disrupted by planned development.

Finally, while the number of people working at the airport might increase slightly as a result of construction of a new terminal building with room for additional airport operators, the increase would not likely be result in an appreciable change in employment for the airport area.

### **Environmental Justice**

Executive Order 129898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires the Department of Transportation (DOT) to identify and address policies or programs with disproportionately high and adverse human health or environmental effects on minorities or low-income populations. Environmental Justice must be considered in all phases of planning. It is essential that any potential impacts to minority and low-income populations be identified early in the planning process so that they can be considered during the evaluation of project alternatives.

The proposed airport development projects would not result in any disproportionate adverse impacts to minority and low-income populations because there are no minority or low income residential areas around the airport, no proposed acquisition of residences, and no proposed disruption of communities.

### **Children's Environmental Health and Safety Risks**

The FAA is encouraged to identify and assess environmental health risks and safety risks that the agency believes could disproportionately affect children, including risks associated with contaminated air, food, drinking water, recreational waters, soil, or products that children might be exposed to or use .

The proposed airport projects would not result in any disproportionate health and safety risks to children.

## **5.16 Solid Waste**

Solid waste impacts must be evaluated in conjunction with airport development. These impacts include the following:

- Impacts on solid waste generation.
- Location of existing solid waste disposal facilities in the vicinity of proposed runways.

Significant increases in solid waste generation are not anticipated as a result of the proposed airport improvements. The only additional waste anticipated is that which would be associated with the construction of the aviation facilities. Currently, the airport is not connected to the county's public sewer service. Sewerage at the airport is treated by two septic systems - one at the existing Terminal Building and one at the eastern T-hangar. It is our understanding that the septic system for the terminal building is likely at the limit on what it can handle. No proposed development is planned for this area. It appears that some additional capacity is available for connection to the septic system near the T-hangars. It may be possible for some of the proposed facilities located east of the hangars to connect to this system.

While Greene County has plans to provide sewer service to the airport at some future date, there is no time frame for when this will take place. If public sanitary service is not available by the time that the airport development occurs, it would be necessary to expand the existing septic system, or add one or more additional septic systems. This would require a permit from Greene County.

FAA Order 5200.5B, *FAA Guidance Concerning Sanitary Landfills On or Near Airports*, states that "sanitary landfills will be considered as incompatible use" if located within 1,500 meters (approximately 4,921 feet) of all runways planned to be used by piston type aircraft and within 3,000 meters (approximately 9,843 feet) of all runways planned to be used by turbine aircraft. Airports located closer than these distances to sanitary landfills have an increased risk of bird hazards. Based on a review of Ohio Environmental Protection Agency (OEPA) Division of Materials and Waste Management's database of solid waste landfills, there are no landfills or solid waste disposal sites located within five miles of the Greene County – Lewis A. Jackson Regional Airport (OEPA, 2013). Therefore, there would be no potential bird hazards from landfills as a result of the proposed runway improvements.

## 5.17 Water Quality

The Federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act), provides the authority to establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, establish location with regard to an aquifer or sensitive ecological area such as a wetlands area, and regulate other issues concerning water quality.

If the proposed federal action would impound, divert, drain, control, or modify the waters of any stream or other body of water, the Fish and Wildlife Coordination Act applies, unless the project is for the impoundment of water covering an area of less than 10 acres. The Fish and Wildlife Coordination Act requires the responsible federal official to consult with the U.S. Fish and Wildlife Service and

the applicable state agency to identify ways to prevent loss or damage to wildlife resources resulting from the proposed project.

If there is potential for contamination of an aquifer designated by the EPA as a principal drinking water resource for the area, the project needs to be coordinated with the EPA, as required by Section 1424 (e) of the Safe Drinking Water Act, as amended.

The Greene County – Lewis A. Jackson Regional Airport is located in the Little Miami River Watershed. Indian Ripple Brook is located adjacent to property to be acquired for development northwest of the airport. In addition, there are two USGS-mapped unnamed tributaries located to the west of Runway 7 (see Figure 5-4). It is not anticipated that proposed development would occur near these water sources. As a result, there would be no impacts to mapped surface waters as a result of the proposed airport development. Prior to project implementation, an on-site field survey should be conducted to verify that there are no unmapped streams within the project area that could be impacted by the future airport development.

For future development projects that disturb one acre or more, the airport would need to file a Notice of Intent to obtain a General Permit for Discharge of Storm Water Associated with Construction Activity from the OEPA. This permit program is mandated by the Clean Water Act and is part of the National Pollutant Discharge Elimination System (NPDES). To obtain permit coverage, a Storm Water Pollution Prevention Plan for the construction site would need to be developed, and construction activities must be completed in accordance with this plan and with any local regulations regarding soil and erosion control to minimize nonpoint source pollution. In addition, measures identified in FAA Advisory Circular 150/5370-10F, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, would be incorporated into the design and construction of the proposed airport development projects to minimize adverse water quality effects, including control of water pollution during construction.

The Greene County - Lewis A. Jackson Regional Airport is not located within an area of a Sole Source Aquifer. Therefore, Section 1424(e) of the Safe Drinking Water Act, as amended, does not apply. The airport is located in a Zone of Critical Concern for the Ohio River, which is defined as "...the area 1/4 mile below a water intake to 25 miles upstream in the Ohio River..." (ORSANCO, 2014) and is located approximately 2,500 feet from a public water system intake (See Drinking Water Source Protection Area Map included in Appendix B). There are also a few residential and commercial drinking water wells located near the project area (See Wells Map in Appendix B).

Airport operations include many activities which have the potential to contaminate adjacent surface water and ground water. These activities include aircraft fuel storage and refueling, as well as aircraft cleaning and maintenance. The

implementation of Best Management Practices (BMPs) that prevent or minimize the discharge of pollutants into receiving waters can be undertaken by the airport to prevent or minimize the discharge of pollutants into surface waters. Any discharge of wastewater from equipment maintenance and cleaning operations requires an additional NPDES wastewater permit. In addition, the Airport Authority is currently developing a Spill Prevention, Control, and Countermeasure plan will ensure that the airport has planned for and taken measures to prevent environmental damage from oil spills. This plan should be updated as new facilities are developed on the airport property.

By implementing BMPs, complying with local and state regulations regarding soil and erosion control and storm water runoff to minimize nonpoint source pollution into local waterways, and following FAA guidance regarding construction of airports to minimize water pollution, the future airport development would not impact the public drinking water supply or private wells.

## 5.18 Wetlands

Executive Order (E.O.) 11990, *Protection of Wetlands*, DOT Order 5660.1A, the Rivers and Harbors Act of 1899, and the Clean Water Act, Section 404, address activities in wetlands. E.O. 11990 requires federal agencies to ensure that their actions minimize the destruction, loss, or degradation of wetlands. It also ensures the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable during the planning, construction, funding, and operation of transportation facilities and projects (7 CFR Part 650.26, August 6, 1982). DOT Order 5660.1A sets forth DOT policy that transportation facilities should be planned, constructed, and operated to ensure protection and enhancement of wetlands.

National Wetlands Inventory (NWI) mapping for the airport identified only one potential wetland area within current and future airport boundaries as shown on Figure 5-4. This area is a pond that is located at the bottom of the hill behind the existing terminal building. To ensure that there are no additional wetlands that could be impacted by future airport development, on-site field investigations would be required prior to future project implementation. If it is determined that wetland impacts would occur as part of future project implementation, a Section 404 permit would be required from the U.S. Army Corps of Engineers and Section 401 water quality certification would be required from the OEPA.

## 5.19 Wild and Scenic Rivers

The Wild and Scenic Rivers Act (P.L. 90-542, as amended) protects rivers that are listed on the National Inventory of Wild and Scenic Rivers. The Little Miami River, which is listed on the U.S. Department of Interior's Inventory of National

Wild and Scenic Rivers, is within the general vicinity of the airport but not within current or future property boundaries. At the closest point, the Little Miami River is approximately 3,200 feet from airport property. No impacts to designated wild and scenic rivers are expected as a result of the implementation of the proposed airport projects. However, due to the proximity of the Little Miami River and its nearby tributary (Indian Ripple Brook), best management practices should be implemented to avoid adverse effects on the river and its tributaries.

## 5.20 Induced Socioeconomic/Cumulative Impacts

Certain airport development projects could impact the socioeconomic characteristics of the surrounding communities. Induced socioeconomic impacts occur when significant impacts in resource categories result in socioeconomic impacts. For example, airport projects that result in noise impacts or resulting in additional land could cause local land use changes. Cumulative impacts occur if the proposed airport development projects, combined with other local development projects, such as road improvements or local development, create significant socioeconomic impacts for the surrounding area. These impacts are assessed by evaluating the following factors:

- Shifts in patterns of population movement and growth;
- Increases in public service demands;
- Changes in business and economic activities; or
- Other factors identified by the public.

The proposed airport development projects would not result in shifts in patterns of population movement or growth. Most of the proposed projects would occur on airport-owned land. The future acquisition of property west of North Valley Road may require re-zoning of adjacent land, which is zoned Agriculture (A-1) (north of the runway) and Planned Unit Development (PUD-1) (south of the runway) (see Beaver Creek Township Zoning Map included in Appendix B). The proposed projects would not require significant increases in utilities. The future terminal building and hangars would require the expansion of electrical, sewer, and water service but the demands of these facilities are unlikely to exceed the capacity of existing systems.

In addition, the proposed airport development would not result in significant economic changes. There would be some construction-related employment and some increase in employment at the airport generated by the projects that would result in minor short-term economic benefits to Greene County. However, these economic impacts, while beneficial to the local economy, are not anticipated to be significant enough to result in shifts in population or changes in local land use.

## 5.21 Summary

It does not appear that any major environmental issues were identified around the Greene County - Lewis A. Jackson Regional Airport that would impede the implementation of the proposed airport development projects. As identified in this Environmental Overview, an air quality assessment would be required as part of the NEPA process to determine if the proposed airport development's total net emissions equal or exceed the *de minimis* thresholds. If the net emissions exceed the *de minimis* thresholds, a General Conformity Determination must be conducted. In addition, archaeological investigations would likely be required by the OHPO for any future airport development that occurs in areas that have not already been investigated due to the presence of archaeological sites in close proximity to the airport. Ecological field surveys also would be needed to determine whether jurisdictional wetlands and threatened and endangered species habitat occur within the area of potential development. Further coordination would be required with the NRCS for the proposed land acquisition since it would impact prime farmlands and areas currently being farmed. Also, an Environmental Due Diligence Audit should be completed prior to the implementation of any of the proposed airport projects and future land acquisition. **Table 5-4** below summarizes the environmental concerns.

**Table 5-4: Environmental Overview Summary**

<b>Air Quality Classification</b>	In attainment for Carbon Monoxide (CO), lead (Pb), Nitrogen Dioxide (NO <sub>2</sub> ), Sulfur Dioxide (SO <sub>2</sub> ) and PM <sub>10</sub>  Maintenance for PM <sub>2.5</sub> and 8-hour Ozone
<b>Aquatic Concerns</b>	One NWI-mapped pond, two mapped unnamed streams. The proposed airport development would not impact these resources. On-site field investigations should be conducted to identify potential impacts to any unmapped streams or wetlands.
<b>Terrestrial, Threatened and Endangered Species Concerns</b>	Based on coordination with ODNR, there are no known occurrences of any rare or endangered species in a one-mile radius around the airport. The site is about 0.5 miles south of the Little Miami State and National Scenic River, which would not be impacted by future airport development. Also, there are no records of any additional unique ecological sites, geologic features, animal assemblages, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one-mile radius of the project area. ODNR also has no records for Indiana Bat ( <i>Myotis sodalis</i> ) capture locations within a five-mile radius or hibernacula within a 10-mile radius of the project. On-site field investigations should be conducted to verify that there are no endangered species before future projects are implemented.

<b>Cultural</b>	<p>No historic properties are located within the airport property or adjacent areas.</p> <p>Several archaeological investigations were undertaken on airport property and adjacent areas. There were no NR-eligible archaeological sites identified as a result of these investigations. However, due to the presence of archaeological sites within or near the project area boundaries, OHPO would likely require Phase I archaeological investigations for projects which occur within areas that were not previously investigated.</p>
<b>Hazardous Materials</b>	<p>Fifteen sites of concern within one mile of airport, 5 sites located on airport property. Before the Airport Authority proceeds in the development of any of the proposed airport projects or acquires any additional property, an Environmental Due Diligence Audit should be performed in accordance with FAA Order 1050.19, <i>Environmental Due Diligence Audits in the Conduct of FAA Real Property Transactions</i>.</p> <p>A spill prevention, control and countermeasure plan should be prepared/updated and best management practices should be followed for all proposed development to eliminate or minimize spills.</p>
<b>Land Use Concerns</b>	<p><u>Section 4(f):</u> There are no parks, wildlife refuges, wildlife and waterfowl refuges, or recreation areas that would be Section 4(f) concerns.</p> <p><u>Noise-sensitive land uses:</u> There are no noise-sensitive land uses in the vicinity of the airport.</p> <p><u>Obstructions:</u> There are tree obstructions to the sides of the approaches on both ends of Runway 7-25. Obstructions should be removed from the Part 77 surfaces.</p> <p><u>Environmental Justice:</u> There are no Environmental Justice concerns.</p> <p><u>Re-zoning Issues:</u> The acquisition of property west of North Valley Road might require re-zoning of land.</p>
<b>Solid Waste</b>	<p>Existing septic systems may not work for proposed development. New septic systems or public sanitary sewers will likely be required.</p>
<b>Natural Resources</b>	<p>Existing water well is not adequate for proposed development. New water wells, or public water service will be required.</p>
<b>Construction Impacts</b>	<p>A General Permit for Discharge of Storm Water Associated with Construction Activity would need to be obtained from the OEPA for any airport project disturbing more than one acre.</p>

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Schneider, Greg, ODNR, Division of Wildlife letter to Caroline Ammerman, Stantec. January 14, 2014.

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## Capital Improvement Plan

The ability to maintain and expand the Greene County – Lewis A. Jackson Regional Airport to meet the projected aviation needs over the next 20 years is dependent on the availability of adequate funding sources. Past funding for improvements at the airport has been provided by the Federal Aviation Administration (FAA), the Ohio Department of Transportation and local sources. The Greene County Regional Airport Authority recognizes that a significant level of funding will be required to construct the facilities identified in this master plan update while maintaining all of the existing facilities. Because these funding levels will exceed those available from state and local sources, the projects included in this master plan update comply with the FAA standards so as to maintain eligibility for FAA funding.

To help plan for funding needs, a Capital Improvement Plan was prepared for the airport for the 20-year period included in this planning study. The anticipated projects were broken by need into three phases: 1) short-term (one to five years), 2) intermediate (six to 10 years), and 3) long-term (11 to 20 years). While obstruction removal efforts by the Airport Authority during the last couple of years must continue in order to comply with current FAA standards for safety, as well as instrument approaches, the majority of the anticipated projects are required to improve the airport facilities to meet current and anticipated demand during the three phases of the planning period. The proposed development program has been established based on priorities established by the Airport Authority in the current 10-Year Airport Capital Improvement Plan (December 2013). In addition, the proposed schedule is based on the forecasts and facility requirements presented in Chapters Two and Three of this document.

One item not listed in the Capital Improvement Plan involves the addition of water and sanitary sewer utility service to the airport. The Airport Authority has pursued such services at the airport for many years. However, the anticipated costs of these services have exceeded the potential benefits and applications for grants to help fund the improvements have been denied. There are plans for extension of water and sewer service to the airport area, but there is no schedule for when such improvements will occur.

In addition, while shown on the Ultimate Airport Layout Plan sheet (but not the Future Airport Layout Plan sheet), extension of the runway and parallel taxiway to 5,000 feet in length has not been justified based on need at this

time and was not included is the Capital Improvement Plan. The FAA has not agreed to fund the runway extension, but have allowed inclusion of the 5,000-foot long runway in the Master Plan as a long-term consideration only. Significant operational demand by aircraft requiring a 5,000-foot runway (at least 500 operations per year) will need to be documented to obtain FAA consideration for funding of a runway extension.

The schedule presented in this Chapter for implementation of the Capital Improvement Plan may change to reflect the actual airport demands and the availability of funding to support the program. The Capital Improvement Plan is divided into the following sections:

- Development Cost Estimates
- Financing Plan

## 6.1 Development Cost Estimates

The Capital Improvement Plan for Greene County - Lewis A. Jackson Regional Airport is based on an estimate of cost for each of the major projects required to be completed at the airport. These projects include the runway pavement rehabilitation, new east and west terminal area facilities, vehicle parking expansion areas, perimeter fencing, aircraft parking apron expansions, airfield lighting, land acquisition, and aircraft hold apron/bypass taxiway. Estimated costs for planning, environmental investigation and coordination, design, testing, and construction management services were included to provide a comprehensive, overall development program cost estimate. While the overall cost for development of the airport as presented in Chapter Four of this document provided a summary estimate of the preferred development plan, the costs in this chapter have been broken out into a phased development plan over the multi-year capital improvement plan. While separation of the overall development program into smaller individual projects will result in additional construction, engineering, and administration costs, this approach results in a manageable program which is more likely to be able to be funded. In an environment where funding is scarce and competition for the limited dollars is intense, development of a cost-effective development plan is critical to obtaining funding.

The costs of the proposed improvements over the course of the 20-year planning period at Greene County-Lewis A. Jackson Regional Airport were calculated in 2014 dollars. **Table 6-1** presents the estimated costs for the anticipated projects during the entire 20-year planning period by year. The table also depicts the total cost for each of the phase periods. Separation of the projects into the phased development plan results in an estimated total 20-year cost of the Capital Improvement Program presented in **Table 6-1** of approximately \$20.2 million.

## 6.2 Financing Plan

There are many sources of funding for airport development. Funding may be provided directly from the county operating budget, through loans, general obligation or revenue bonds, industrial development bonds, private financing, federal and state aid, or a combination of these sources. Typically, a significant portion of the funding for general aviation airport development is obtained from the FAA and the state Department of Transportation. Implementation of the Capital Improvement Plan for Greene County - Lewis A. Jackson Regional Airport will depend heavily on the availability of federal and state funding. Ongoing coordination with state staff and the FAA Detroit Airports District Office staff should be maintained to monitor the status of state and federal funding for projects at the airport. The Greene County Regional Airport Authority should maintain close communication with the local and state representatives to obtain their support for development of the airport.

Many of the improvements anticipated at the airport, in particular the terminal facilities (ramp, hangars, and terminal building), are anticipated to relieve congestion and provide room for expansion, which should increase aviation activity and enhance the ability of the airport to generate revenue to fund the local share of development costs.

The following text provides an overview of the sources of development funding. For the analysis contained in this document, it was assumed that funding levels would be adequate to support the Capital Improvement Plan presented in this chapter. The development schedule presented in Table 6-1 may need to be adjusted to match the availability of funding should changes be made in the various programs. Changes in the actual development schedule for the various projects will also require adjustment of the estimated cost.

### Federal Funds

Federal funding for airport development is available under the provisions of the Airport and Airways Improvement Act of 1982 for public-use airports included in the National Plan of Integrated Airport Systems (NPIAS). An Aviation Trust Fund was established to provide a source of funds for maintaining a network of airports capable of meeting the aviation needs of the United States. The Airport Improvement program (AIP) was established to control the dispersal of dollars collected from aviation sources and distributed to those airports that meet the FAA eligibility requirements.

Table 6-1: Airport Capital Improvement Plan

TABLE 6-1 20-YEAR CAPITAL IMPROVEMENT PLAN (FY2014 to FY2033)									
Description	Fiscal Year	Total Cost	Entitlement	Apportionment	Discretionary	State Non-FAA	Local	Other Local or Future Reimb.	
<b>0 to 5 Years (2014 to 2018)</b>									
Runway Rehabilitation (Design)	2014	\$42,310					\$4,231	\$38,079	
FAA Past Project Reimbursement	2014	\$156,185	\$140,567				\$15,619		
Land and Lease Acquisition - Parcel A (Approx. 113 Acres)	2014	\$190,000					\$19,000	\$171,000	
Pavilion Design and Construction	2014	\$307,500					\$30,750	\$276,750	
Automobile Parking Expansion	2014	\$414,240					\$41,424	\$372,816	
Runway Rehabilitation (Construction)	2015	\$680,190	\$159,434	\$452,738			\$68,019		
Transitional Surface Obstruction Removal	2015	\$172,470					\$17,247	\$155,223	
Runway 25 Run-Up Area and By-Pass TW	2015	\$277,891					\$27,799	\$250,192	
Design East Airport Development (Ramp & Hangars)	2016	\$134,355	\$120,920				\$13,436		
FAA NADIN Weather Link	2016	\$4,000	\$3,600				\$400		
East Airport Development (Ramp and Hangars) Phase 1	2017	\$2,352,326	\$175,481				\$235,233	\$1,941,613	
East Airport Development (Hangars) Phase 2	2018	\$2,656,554	\$150,000				\$265,655	\$2,240,899	
Design West Airport Development (Buildings & Ramp)	2018	\$171,000					\$17,100	\$153,900	
<b>Years 1 to 5 CIP Total</b>		<b>\$7,559,121</b>	<b>\$750,000</b>	<b>\$452,738</b>	<b>\$0</b>	<b>\$0</b>	<b>\$755,912</b>	<b>\$5,600,471</b>	
<b>5 to 10 Years (2019 to 2023)</b>									
West Airport Development (Terminal and Ramp) Phase 1	2019	\$7,185,482	\$150,000				\$718,548	\$6,316,934	
West Airport Development (Hangars) Phase 2	2020	\$2,795,486	\$150,000				\$279,549	\$2,365,937	
East Terminal Ramp and T-Hangar 500 Pavement Rehab.	2023	\$370,210	\$333,189				\$37,021		
<b>Years 6 to 10 CIP Total</b>		<b>\$10,351,178</b>	<b>\$633,189</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,035,118</b>	<b>\$8,682,871</b>	
<b>10 to 20 Years (2024 to 2033)</b>									
Perimeter Fencing - West Airport	2024	\$319,727	\$287,754				\$31,973		
Perimeter Fencing - East Airport	2025	\$462,115	\$129,057	\$286,846			\$46,212		
Runway Lighting, PAPI and REIL Replacement	2027	\$456,550	\$300,000	\$110,895			\$45,655		
Parallel Taxiway Rehabilitation	2030	\$406,172	\$366,555				\$40,617		
Design Runway Rehabilitation	2031	\$33,000	\$29,700				\$3,300		
Runway Rehabilitation	2033	\$610,205	\$450,000	\$99,185			\$61,021		
<b>Years 11 to 20 CIP Total</b>		<b>\$2,287,769</b>	<b>\$1,562,066</b>	<b>\$496,926</b>	<b>\$0</b>	<b>\$0</b>	<b>\$228,777</b>	<b>\$0</b>	
<b>20-Year CIP Total</b>		<b>\$20,198,068</b>	<b>\$2,945,255</b>	<b>\$949,663</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,019,807</b>	<b>\$14,283,343</b>	

There are currently three major FAA fund sources under the AIP for approved projects at general aviation airports similar to the Greene County - Lewis A. Jackson Regional Airport. These fund sources include Non-Primary Entitlement funds, State Apportionment funds, and Discretionary funds. All general aviation airports included in the NPIAS are eligible to receive up to \$150,000 in FAA funds each year for projects that are eligible and approved by the FAA. These funds may be carried over for up to three years to provide a maximum of \$600,000 in FAA Non-Primary Entitlement funds for a project. After the three-year period, any unused funds are lost to that airport. A certain amount of overall FAA funds for AIP are allocated to each state for important large projects that require more funding than available in Non-Primary Entitlement funds. This fund is the State Apportionment fund. The FAA Airports District Office, with some input by the state DOT, will distribute these funds to those projects that they believe are the most important. Finally, a certain amount of overall FAA funds for AIP are set aside nationally for important projects under the Discretionary fund. The FAA Airports District Office will recommend specific projects for discretionary funding, but the FAA region and headquarters personnel evaluate each project and select the most important projects to receive this funding.

One of the requirements for funding eligibility, under the AIP, is the development of an Airport Layout Plan (ALP) that documents the existing airport conditions and proposed future development. Submittal and approval of the ALP by the FAA is required prior to issuance of AIP grants. Preparation of an ALP requires compliance with a set of standards established by the FAA to provide a safe and secure site for operation of aircraft. The Greene County - Lewis A. Jackson Regional Airport has an approved ALP set that was prepared as part of the prior airport master plan. As part of this planning study, this ALP set has been updated to depict the current airport facilities, anticipated facilities, and current FAA requirements outlined in the FAA Advisory Circulars 150-5300-13, *Airport Design*, 150/5070-6B, *Airport Master Plans* and other referenced standards (including the ALP checklist).

Generally, airport construction, reconstruction, repair, or development programs required to support airport capacity demands, safety requirements, or airport security are eligible for federal funding. Construction of revenue generating facilities such as hangars and aircraft maintenance buildings are eligible for federal grant funding using Non-Primary Entitlement funds when there are no safety items, airfield improvements, or runway approach obstructions that need to be addressed for the three years after the revenue facility is completed. State Apportionment and Discretionary funds cannot be used for revenue producing projects. Grants issued under AIP currently fund up to 90 percent of the cost of eligible development projects at general aviation airports. However, there have been recent proposals within Congress to change the amount of Non-Primary Entitlement funds for general aviation airports, or eliminate them completely.

The FAA is required by Congress to provide the estimated cost of anticipated airport project needs during the next five years each year. This information is used by Congress in formulating the various funding programs. However, the FAA has requested that airport sponsors provide a 10-year Capital Improvement Plan each year. The State of Ohio Office of Aviation accumulates data from the 10-Year Airport Capital Improvement Program.

## State Funds

The State of Ohio provides funding for airport projects through the state Department of Transportation Office of Aviation. The State of Ohio's airport funding program, named "The Ohio Airport Grant Program", provides financial assistance to publicly owned airports that do not receive FAA passenger or air cargo entitlements. Currently there are 99 airports in Ohio that meet the program's criteria. The program currently funds two types of projects: 1) capital improvement projects, and 2) maintenance projects. Typically, eligibility for state capital improvement and maintenance grants follow the requirements for federal AIP, although some projects, such as land acquisition, that are eligible for federal funds are not eligible for state funds.

This state program has two funding levels, as defined in the fiscal year 2013 documents. For projects involving new airfield pavement expansions, airfield lighting, and NAVAIDS, the state program will fund up to a maximum of 50 percent of the eligible construction items, including construction inspection costs. For rehabilitation of existing airfield pavements, airfield lighting, safety improvements, and obstruction removal, the state program funds up to 90 percent of the eligible construction items, including construction inspection costs. Engineering design, bidding, construction administration, testing, legal and administrative costs are not eligible.

There is no funding amount limit for a state grant. However, the amount of funds available for airport projects has decreased during the last 20 years to less than \$1 million annually. Because of the limited funding, ODOT typically attempts to use the funds for runway pavement rehabilitation or obstruction removal projects. There is an effort underway by the Ohio Aviation Association to significantly increase the ODOT Office of Aviation budget for airport improvements to as much as \$16 million per year, with a hope that some of this money may be used to match a portion of the required local matching share of FAA funded airport projects.

As is the case with the federal grant funding program, the availability of state funding could have a significant impact on the Greene County - Lewis A. Jackson Regional Airport improvement program schedule, especially if the budget is increased so that the funds can be used for a portion of the local matching share of FAA projects.

## Local Funds

The availability of local funds is anticipated to be a primary factor influencing the implementation of the proposed Capital Improvement Plan. While the Airport Authority has been able to obtain federal and state grants to improve and maintain the existing airport facilities, additional sources of funding are expected to be required to undertake the proposed development program. As discussed above, it is anticipated that increased revenues should result from the proposed improvement of airport facilities. Although the actual magnitude of the increased revenues is not known, these revenues could be utilized to fund additional improvement projects or retire revenue bonds obtained to finance portions of the Capital Improvement Plan.

A majority of the revenue generated at a general aviation airport is a result of fuel sales or hangar rentals. As such, financial institution loans could be used to construct hangars to obtain the facilities necessary to generate revenue to support part of the local share of the Capital Improvement Plan. Another source of revenue for airport development is the implementation of a landing fee for use of the airport. While this would provide a ready source of funding for airport development projects, this approach may not work at Greene County-Lewis A. Jackson Regional Airport due to the type of operations historically occurring at the airport. A detailed analysis of locally available funding sources should be undertaken to identify the appropriate mechanism to support the local share of the cost of the Capital Improvement Program.

## Private Funds

Private investors must be considered as a potential source of funds for revenue producing development that is not eligible for federal or state grant funding. Tenants and investors may finance the construction of facilities such as hangars from which they could receive rental fees. While the revenue associated with this approach is initially limited to the lease charges for the land underlying the hangar(s), the local sponsor would not need to obtain separate funding for these facilities. The construction of these facilities would most likely support additional based aircraft which would in turn generate additional revenue associated with fuel sales and other aviation services.

Typically, agreements for the private construction of hangars or other support facilities include reversionary clauses that convey ownership of the facilities to the airport after a fixed period of time. This approach maximizes the ability of an airport to implement construction of facilities not eligible for federal or state funding. The Capital Improvement Program includes the scheduling for installation of revenue producing facilities such as hangars based on the facility requirements documented in Chapter Four. The actual schedule for construction of these facilities will be dependent on the demands of the airport users.

One approach, which has been successfully used by a number of airport sponsors for the construction of T-hangars, is a condominium association. This involves the establishment of a group of individual investors who want to hangar their aircraft at the airport. The association would lease the land from the Airport Authority and contract the construction of the hangar unit. The association gains the advantage of a reduced price for multiple hangars and the Airport Authority receives the lease payment and the supplemental revenues for the increased number of based aircraft which buy fuel and use other services provided by the airport. This and other approaches to the generation of revenue by increasing the number of based aircraft at the airport may warrant further evaluation by the Airport Authority. An indirect benefit of an increased number of based aircraft is the positive economic impact that the airport users have on the local economy. While not direct revenue which can be used in airport development, this economic impact can enhance the Airport Authority's position with respect to financial support from the county.

### 6.3 Summary

The analysis of the Capital Improvement Plan for Greene County - Lewis A. Jackson Regional Airport resulted in a proposed development program that would enable the airport to meet existing and anticipated aviation demand. Actual implementation of the development program will be dependent on the availability of funding discussed in this chapter. While the schedule of development may change based on the availability of funding, the development proposed in this program should be undertaken to meet the long-term aviation needs of Greene County and the surrounding area. An airport is a significant contributor to the economic well-being of its service area and the Greene County - Lewis A. Jackson Regional Airport has served the needs of the local and regional area for a number of years. Implementation of the improvement program outlined in this document will help to ensure the airport continues to serve the community in the years to come.

## Airport Layout Plan (ALP)

### 7.1 Airport Layout Plan Contents

This chapter outlines the Airport Layout Plan (ALP) for Greene County – Lewis A. Jackson Regional Airport. The contents of the ALP are as follows:

- Title Sheet
- Airport Data Sheet
- Existing Airport Layout Plan
- Future Airport Layout Plan
- Ultimate Airport Layout Plan
- Terminal Area East Plan
- Terminal Area West Plan
- Runway 07-25 Approach Plan
- Part 77 Surfaces
- Land Use Plan
- Property Map
- Aerial Photograph
- FAA ALP Approval Letter

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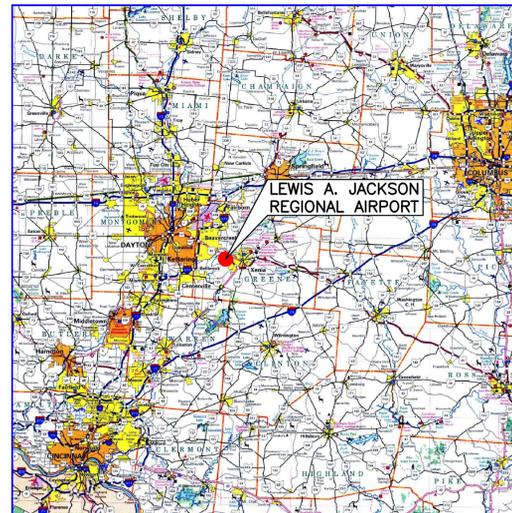
# GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT

## XENIA, OHIO

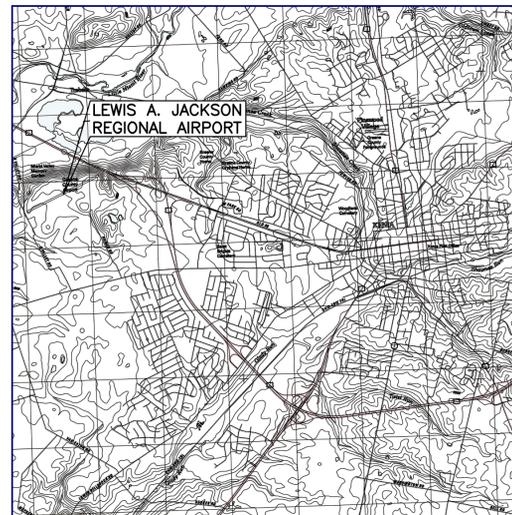
# AIRPORT LAYOUT PLAN FEBRUARY 2014



MAGNETIC DECLINATION  
-6°10'51"  
ANNUAL CHANGE  
-0°03'54"  
AUGUST 2013



**LOCATION MAP**



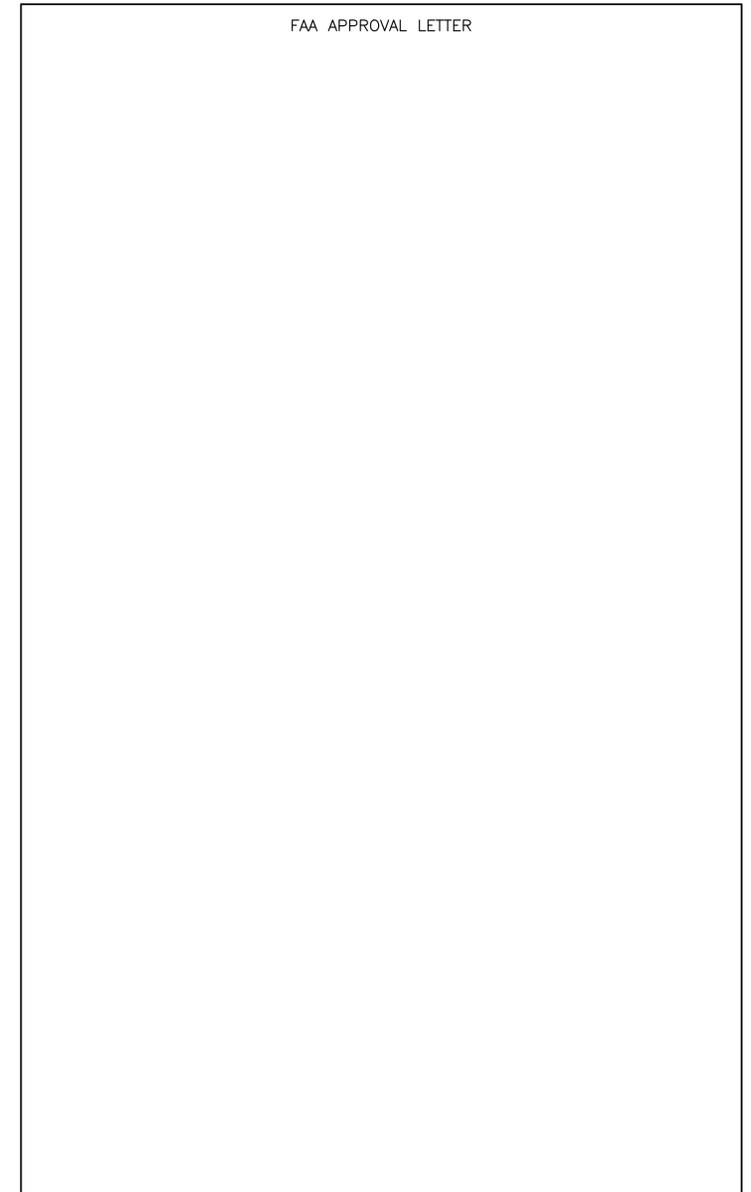
**VICINITY MAP**



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TITLE SHEET	1
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FAR PART 77 SURFACES	9
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PROPERTY MAP	11
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FAA APPROVAL LETTER



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NOTE	CERTIFICATION
<p>"THE PREPARATION OF THIS DOCUMENT WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA.</p> <p>ACCEPTANCE OF THIS REPORT BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.</p>	<p>ON BEHALF OF STANTEC CONSULTING, THIS AIRPORT LAYOUT PLAN (ALP) WAS PREPARED FOR GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT, ACCORDING TO THE APPLICABLE ADVISORY CIRCULARS, THE CURRENT VERSION OF THE GREAT LAKES REGION ALP CHECKLIST, AND ACCURATELY DEPICTS THE PROPOSED USE OF AIRSPACE AT THE TIME OF SUBMITTAL. THE ALP CONFORMS WITH FAA DESIGN STANDARDS, EXCEPT AS NOTED.</p> <p>SIGNED: _____ DATE: _____</p>

FAA CONTRACT NO.	3-39-0094-1812
ODOT CONTRACT NO.	
JOB NO.	173608768
DRAWN BY:	B.K.C.
CHECKED BY:	J.R.K.
DATE:	01/24/13
SITE NUMBER:	17820.A
LOCATION IDENT:	I19

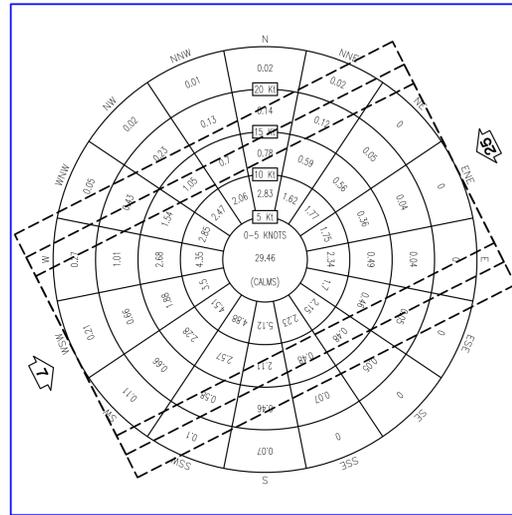
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APPROVED	_____ DATE _____
PRESIDENT	_____ DATE _____

CONSULTANT	
APPROVED	_____ DATE _____
ODOT - OFFICE OF AVIATION	
APPROVED	_____ DATE _____
CHIEF, OFFICE OF AVIATION	

NO.	DATE	REVISIONS

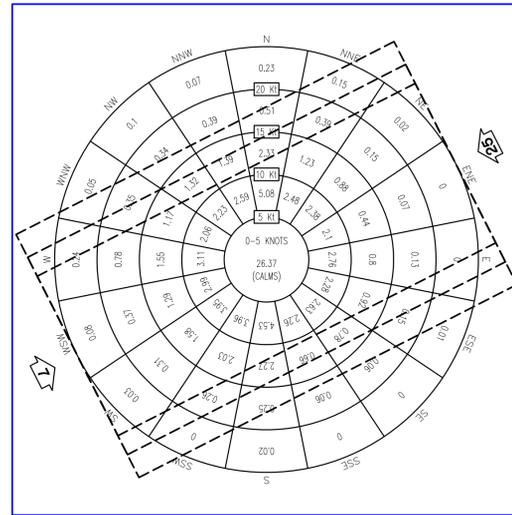
GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT XENIA, OHIO	
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SCALE: N.T.S.	DATE: 01/24/13 1/12

VFR WIND ROSE



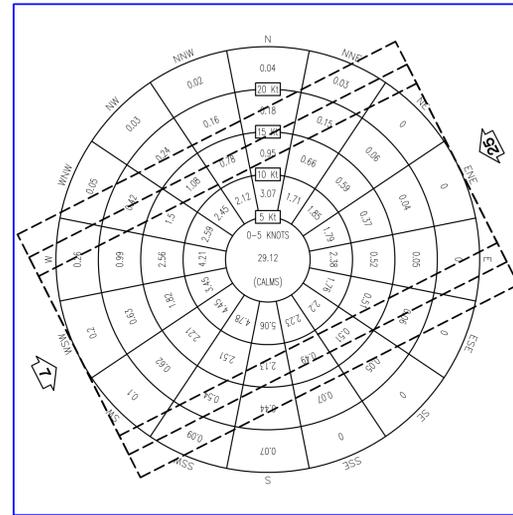
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ALL WEATHER	RUNWAY 7/25 PERCENT COVERAGE
10.5 KNOTS	92.5%
13 KNOTS	97.0%
16 KNOTS	99.2%

IFR WIND ROSE



PERCENT WIND COVERAGE TABLE	
ALL WEATHER	RUNWAY 7/25 PERCENT COVERAGE
10.5 KNOTS	89.3%
13 KNOTS	95.4%
16 KNOTS	98.5%

ALL WEATHER WIND ROSE



PERCENT WIND COVERAGE TABLE	
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13 KNOTS	96.8%
16 KNOTS	99.1%

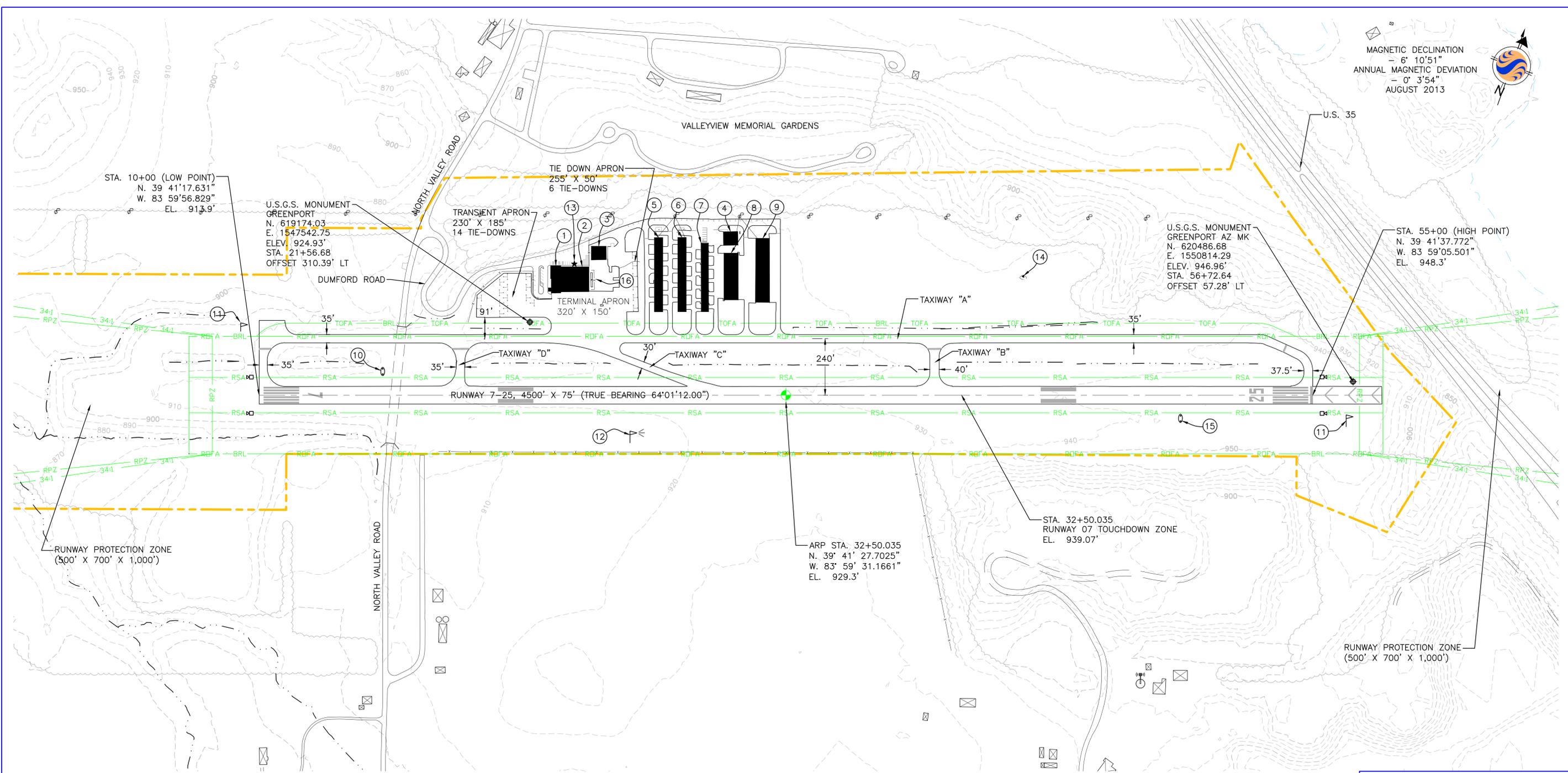
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ASHVILLE, NORTH CAROLINA  
SITE: JAMES M. COX DAYTON INTERNATIONAL AIRPORT  
DAYTON, OHIO  
PERIOD OF RECORD: 1983-2002  
NUMBER OF OBSERVANCES: 175,272

RUNWAY AND APPROACH DATA TABLE					EXISTING RUNWAY SAFETY AREA INVENTORY TABLE																
	RUNWAY 7		RUNWAY 25		RUNWAY	RUNWAY CATEGORY	RSA LENGTH	RSA WIDTH	OBJECTS WITHIN RSA												
	EXIST./FU.	ULTIMATE	EXIST./FU.	ULTIMATE					TYPE OF STRUCTURE	DISPOSITION											
RUNWAY LENGTH	4,500'	5,000'	4,500'	5,000'	7-25	B-II	5,100'	150'	EDGE LIGHTS	LEAVE (FRANGIBLE)											
LANDING LENGTH	4,500'	5,000'	4,500'	5,000'	-	-	-	-	-	-											
TAKEOFF LENGTH	4,500'	5,000'	4,500'	5,000'	-	-	-	-	-	-											
DISPLACED THRESHOLD	NONE	NONE	NONE	NONE	-	-	-	-	-	-											
RUNWAY WIDTH	75'	75'	75'	75'	-	-	-	-	-	-											
EFFECTIVE RUNWAY GRADIENT	0.72%	0.72%	0.72%	0.72%	-	-	-	-	-	-											
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT	<b>EXISTING RUNWAY OFZ PENETRATIONS</b>																
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL																	
RUNWAY MARKING	NPI	NPI	NPI	NPI																	
NAVIGATIONAL AIDS	VOR,GPS	VOR,GPS	VOR,GPS	VOR,GPS																	
VISUAL AIDS	REIL PAPI-2	REIL PAPI-4	REIL PAPI-2	REIL PAPI-4																	
AIRPORT REFERENCE CODE	B-II	B-II	B-II	B-II																	
CRITICAL AIRCRAFT	BEECHCRAFT KING AIR 200	BEECHCRAFT KING AIR 200	BEECHCRAFT KING AIR 200	BEECHCRAFT KING AIR 200																	
TAIL HEIGHT	15'	15'	15'	15'																	
TYPE OF AERONAUTICAL SURVEY	VERTICALLY GUIDED	VERTICALLY GUIDED	VERTICALLY GUIDED	VERTICALLY GUIDED																	
TAXIWAY LIGHTING	MITL	MITL	MITL	MITL																	
RUNWAY DEPARTURE SURFACE	N/A	N/A	N/A	N/A	<b>EXISTING RUNWAY OFA PENETRATIONS</b>																
TSA WIDTH	79'	79'	79'	79'																	
CRITICAL AIRCRAFT - ANNUAL OPERATIONS	-	-	-	-																	
APPROACH RATIO FAR PART 77	34:1	34:1	34:1	34:1																	
RUNWAY PROTECTION ZONE	500'x700' x1,000'	500'x700' x1,000'	500'x700' x1,000'	500'x700' x1,000'																	
APPROACH VISIBILITY MINIMUMS	1 MILE	1 MILE	1 MILE	1 MILE																	
RUNWAY END COORDINATES	LAT. 39°41'17.63"N	39°41'15.39"N	39°41'37.77"N	39°41'37.77"N																	
BASED ON NAD 83	LONG. 83°59'56.83"W	84°00'02.53"W	83°59'05.50"W	83°59'05.50"W																	
PAVEMENT STRENGTH	S 30,000 LBS.	-	30,000 LBS.	-																	
GROSS AIRCRAFT WEIGHT	(S)SINGLE WHEEL, (D)DUAL WHEEL, (DT) DUAL TANDEM	D 37,500 LBS.	-	37,500 LBS.																	
<b>MODIFICATIONS TO FAA DESIGN STANDARDS</b>					<b>MODIFICATIONS TO FAA DESIGN STANDARDS</b>																

AIRPORT DATA TABLE		
LOCATION: GREENE COUNTY, BEAVERCREEK TWP., (XENIA, OHIO)		VMS:
MEAN MAXIMUM TEMPERATURE: 90.6°		
AIRPORT REFERENCE POINT:	LAT.	EXISTING/FUTURE 39°41'27.7"N
	LONG.	ULTIMATE 83°59'34.01"W
AIRPORT ELEVATION (MSL):	948.3	948.3
AIRPORT & TERMINAL NAVAIDS:	VOR, RNAV (GPS-LPV)	VOR, RNAV (GPS-LPV)
AIRPORT VARIOUS LIGHTING AIDS:	BEACON, WIND CONE	BEACON, WIND CONE
SERVICE LEVEL:	GENERAL AVIATION	GENERAL AVIATION
SERVICE ROLE:	UTILITY	UTILITY
AIRPORT REFERENCE CODE (ARC):	B-II	B-II
WEATHER AID	AWOS III,P	AWOS III,P
FAA CONTRACT NO. 3-39-0094-1812	REVISIONS	
ODOT CONTRACT NO.	GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT XENIA, OHIO	
JOB NO. 173608768	AIRPORT DATA SHEET	
DRAWN BY: B.K.C.	<b>1500 LAKE SHORE DR., SUITE 100 COLUMBUS, OHIO 43204</b>	
CHECKED BY: J.R.K.		
DATE: 01/24/13		
SITE NUMBER: 17820.A		
LOCATION IDENT: I19		
SCALE: N.T.S.	DATE: 01/24/13	2/12

h:\a\173608768\working\plan\plan\173608768.dwg Aug 20, 2014 9:42:26 AM

MAGNETIC DECLINATION  
 - 6° 10' 51"  
 ANNUAL MAGNETIC DEVIATION  
 - 0' 3' 54"  
 AUGUST 2013



STA. 10+00 (LOW POINT)  
 N. 39° 41' 17.631"  
 W. 83° 59' 56.829"  
 EL. 913.9'

U.S.G.S. MONUMENT  
 GREENPORT  
 N. 619174.03  
 E. 1547542.75  
 ELEV. 924.93'  
 STA. 21+56.68  
 OFFSET 310.39' LT

U.S.G.S. MONUMENT  
 GREENPORT AZ MK  
 N. 620486.68  
 E. 1550814.29  
 ELEV. 946.96'  
 STA. 56+72.64  
 OFFSET 57.28' LT

STA. 55+00 (HIGH POINT)  
 N. 39° 41' 37.772"  
 W. 83° 59' 05.501"  
 EL. 948.3'

ARP STA. 32+50.035  
 N. 39° 41' 27.7025"  
 W. 83° 59' 31.1661"  
 EL. 929.3'

STA. 32+50.035  
 RUNWAY 07 TOUCHDOWN ZONE  
 EL. 939.07'

**BUILDINGS/FACILITIES**

NUMBER	DESCRIPTION	ELEVATION
1	TERMINAL	942.20
2	FBO HANGAR	951.59
3	HANGAR	947.40
4	HANGAR	947.52
5	T-HANGAR	943.00
6	T-HANGAR	943.01
7	T-HANGAR	946.70
8	T-HANGAR	947.98
9	T-HANGAR	945.69
10	PAPI 07	N/A
11	SUPP. WINDCONE	N/A
12	WINDCONE	937.69
13	BEACON	954.40
14	AWOS III	976.57
15	PAPI 25	N/A
16	FUEL TANKS	N/A

**RUNWAY DESIGN DIMENSIONS**

	EXISTING
RUNWAY	7-25
RUNWAY LENGTH	4,500'
RUNWAY WIDTH	75'
RUNWAY SHOULDER WIDTH (GRASS)	10'
RUNWAY SAFETY AREA (LENGTH & WIDTH)	5,100' x 150'
RUNWAY OBJECT FREE AREA (LENGTH & WIDTH)	5,100' x 500'
OBSTACLE FREE ZONE	200' x 250'
OBSTACLE FREE ZONE (INNER)	N/A

**TAXIWAY DESIGN DIMENSIONS**

	EXISTING
TAXIWAY WIDTH	35'
TAXIWAY SAFETY AREA WIDTH	79'
TAXIWAY OBJECT FREE AREA WIDTH	131'

**CLEARANCES**

RUNWAY C/L TO TAXIWAY C/L	240'
RUNWAY C/L TO HOLDLINE	200' W/SIGNAGE
TAXIWAY C/L TO FIXED OR MOVABLE OBJECT	65.5'

NOTE: THE BUILDING RESTRICTION LINE (BRL) IS BASED ON THE COMBINATION OF THE TAXIWAY AND RUNWAY OBJECT FREE AREAS AND THE RUNWAY PROTECTION ZONES.

FAA CONTRACT NO.	3-39-0094-1812
ODOT CONTRACT NO.	
JOB NO.	173608768
DRAWN BY:	B.K.C.
CHECKED BY:	J.R.K.
DATE:	01/24/13
SITE NUMBER:	17820.*A
LOCATION IDENT:	I19

**REVISIONS**

NO.	DESCRIPTION

**LEGEND**

EXISTING	ITEM
	RUNWAY PAVEMENT
	ROADWAY PAVEMENT
	FENCE
	REILS
	AIRPORT BUILDING
	AIRPORT PROPERTY LINE
	RUNWAY OBJECT FREE AREA
	RUNWAY SAFETY AREA
	RUNWAY PROTECTION ZONE
	RUNWAY APPROACH SURFACE
	TAXIWAY OBJECT FREE AREA
	AIRPORT REFERENCE POINT
	WOODS/TREES
	NON-AIRPORT BUILDING
	DRAINAGE DITCH
	WATER

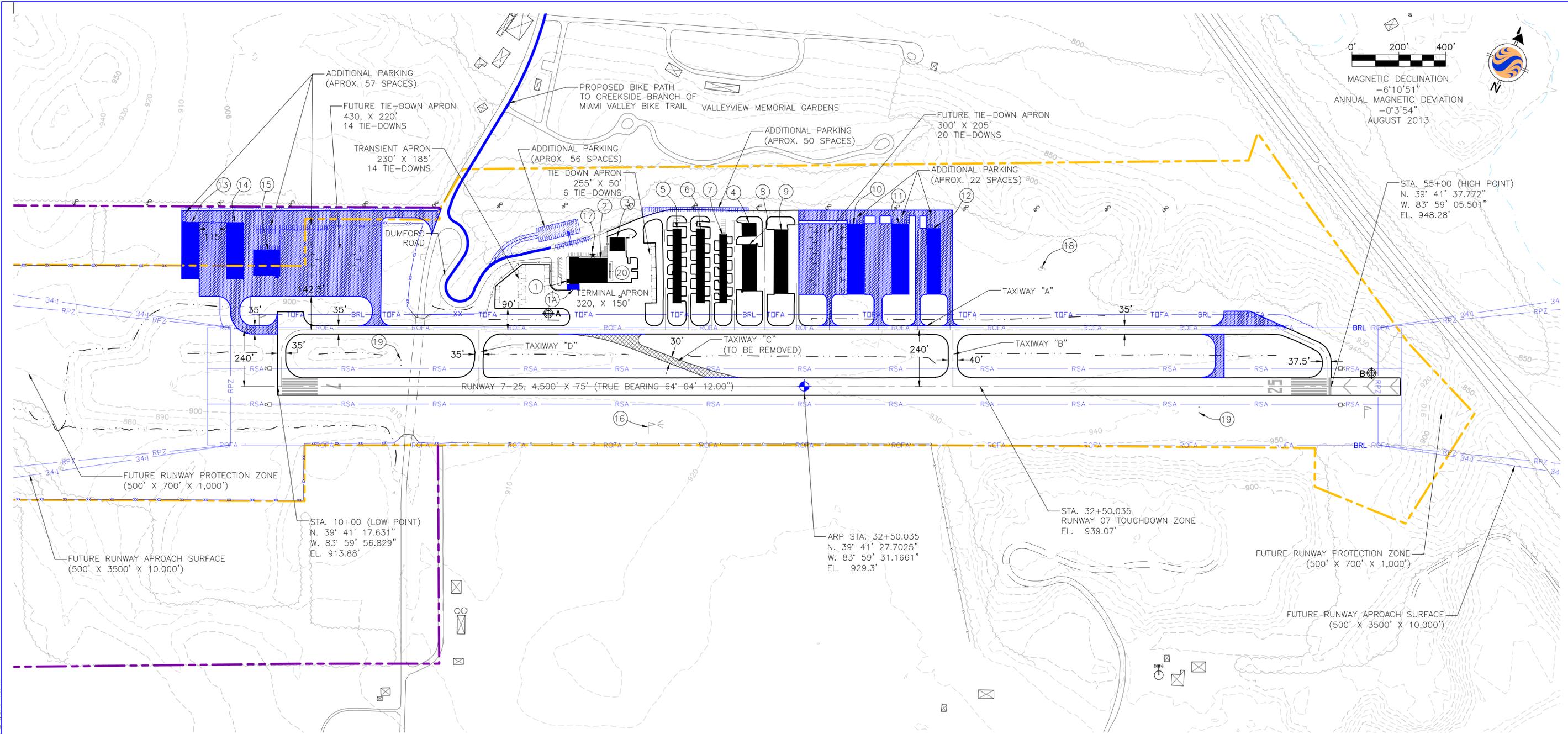
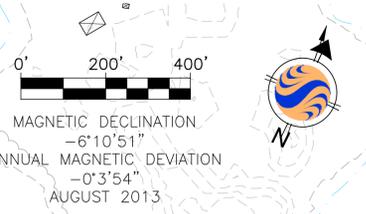
GREENE COUNTY-LEWIS A. JACKSON  
 REGIONAL AIRPORT  
 XENIA, OHIO

EXISTING AIRPORT LAYOUT PLAN

1500 LAKE SHORE DR., SUITE 100  
 COLUMBUS, OHIO 43204

SCALE: 1" = 200' DATE: 01/24/13 3/12

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**U.S.G.S. MONUMENTS**

- A:** GREENPORT  
N. 619174.03  
E. 1547542.70  
ELEV. 924.93'  
STA. 21+56.68  
OFFSET 310.39' LT
- B:** GREENPORT AZ MK  
N. 620486.68  
E. 1550814.29  
ELEV. 946.95'  
STA. 56+72.64  
OFFSET 57.28' LT

**BUILDINGS/FACILITIES**

NUMBER	DESCRIPTION	ELEVATION
1	TERMINAL	942.20
1A	FUTURE PAVILION	950.00
2	FBO HANGAR	951.59
3	HANGAR	947.40
4	HANGAR	947.52
5	T-HANGAR	943.00
6	T-HANGAR	943.01
7	T-HANGAR	946.70
8	T-HANGAR	947.98
9	T-HANGAR	945.69
10	FUTURE S.V. HANGAR	960
11	FUTURE S.V. HANGAR	960
12	FUTURE T-HANGAR	955
13	FUTURE S.V. HANGAR	945
14	FUTURE S.V. HANGAR	945
15	FUTURE WEST TERMINAL	940
16	WINDCONE	937.69
17	BEACON	954.40
18	AWOS III	976.57
19	PAPI (EXIST)	N/A
20	FUEL TANKS	N/A

**RUNWAY DESIGN DIMENSIONS**

	EXISTING	FUTURE
RUNWAY	7-25	7-25
RUNWAY LENGTH	4,500'	4,500'
RUNWAY WIDTH	75'	75'
RUNWAY SHOULDER WIDTH (GRASS)	10'	10'
RUNWAY SAFETY AREA (LENGTH & WIDTH)	5,100' x 150'	5,100' x 150'
RUNWAY OBJECT FREE AREA (LENGTH & WIDTH)	5,100' x 500'	5,100' x 500'
OBSTACLE FREE ZONE	200' X 250'	200' X 250'
OBSTACLE FREE ZONE (INNER)	N/A	N/A

**TAXIWAY DESIGN DIMENSIONS**

	EXISTING	FUTURE
TAXIWAY WIDTH	35'	35'
TAXIWAY SAFETY AREA WIDTH	79'	79'
TAXIWAY OBJECT FREE AREA WIDTH	131'	131'

**CLEARANCES**

RUNWAY C/L TO TAXIWAY C/L	240'	240'
RUNWAY C/L TO HOLDLINE	200'	200' W/SIGNAGE
TAXIWAY C/L TO FIXED OR MOVABLE OBJECT	65.5'	65.5'

**NOTE:** THE BUILDING RESTRICTION LINE (BRL) IS BASED ON THE COMBINATION OF THE TAXIWAY AND RUNWAY OBJECT FREE AREAS AND THE RUNWAY PROTECTION ZONES.

THE AIRPORT SPONSOR HAS REQUESTED THAT THIS PLAN DEPICT A 5,000 FOOT RUNWAY. IT SHOULD BE NOTED THAT WITH ITS CURRENT OPERATING FLEET, FAA ELEGIBILITY WOULD BE RESTRICTED TO THE CURRENT RUNWAY LENGTH OF 4,500 FEET. ALTERNATIVE FUNDING WOULD BE REQUIRED TO DEVELOPE THE ADDITIONAL 500 FEET.

**LEGEND**

EXISTING	FUTURE	ITEM
		RUNWAY PAVEMENT
		EXISTING PAVEMENT
		FENCE
		REILS
		AIRPORT BUILDING
		AIRPORT PAVEMENT
		BEACON
		AIRPORT PROPERTY LINE
		RUNWAY OBJECT FREE AREA
		RUNWAY SAFETY AREA
		RUNWAY PROTECTION ZONE
		RUNWAY APPROACH SURFACE
		TAXIWAY OBJECT FREE AREA
		AIRPORT REFERENCE POINT
		WOODS/TREES
		NON-AIRPORT BUILDING
		DRAINAGE DITCH
		WATER

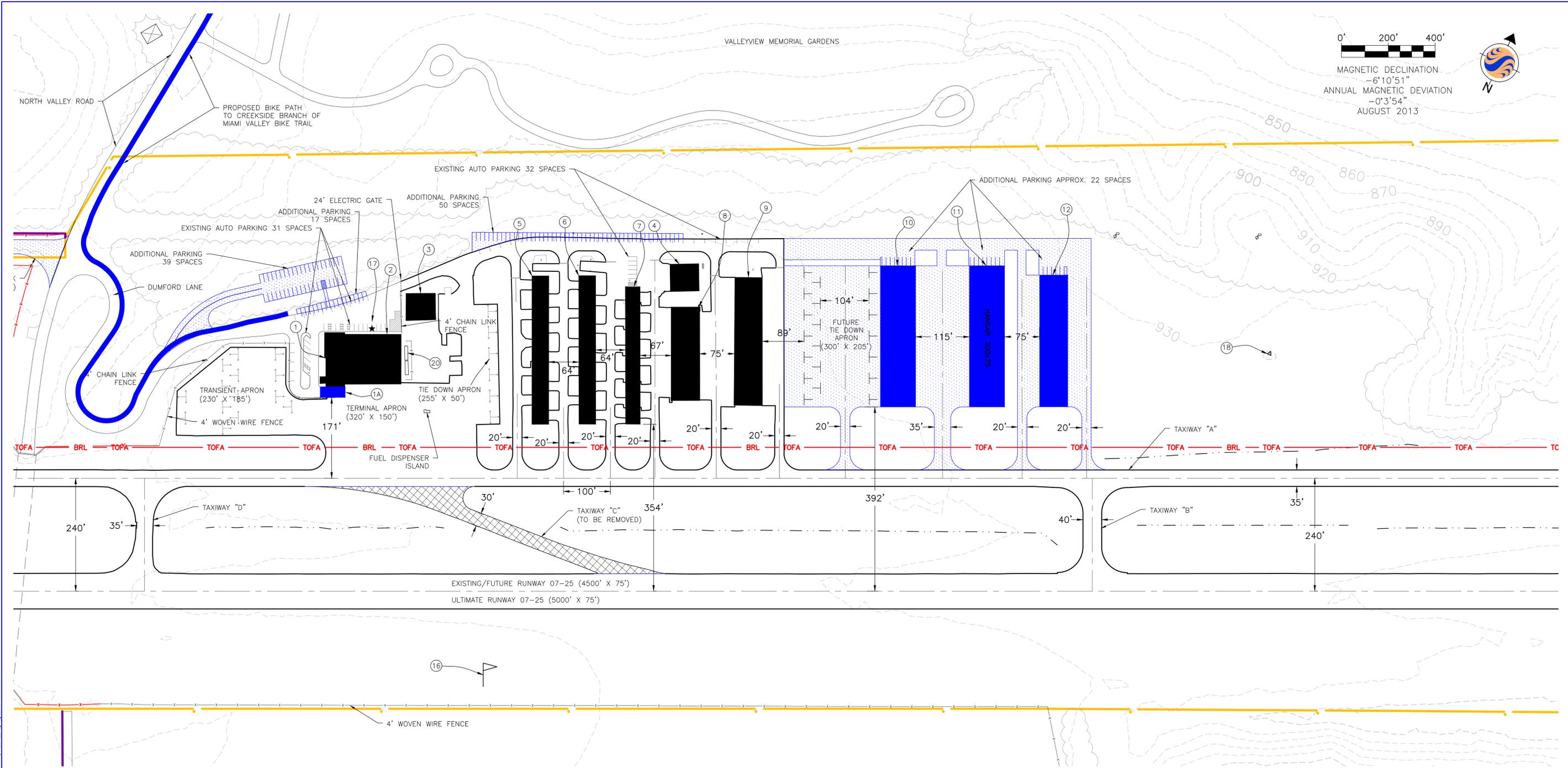
FAA CONTRACT NO.	3-39-0094-1812	REVISIONS	GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT XENIA, OHIO
ODOT CONTRACT NO.	-		FUTURE AIRPORT LAYOUT PLAN
JOB NO.	173608768		1500 LAKE SHORE DR., SUITE 100 COLUMBUS, OHIO 43204
DRAWN BY:	M.C.J.		SCALE: 1"=200'
CHECKED BY:	J.R.K.		DATE: 8/2/13
DATE:	-		4/12
SITE NUMBER:	17820.*A		
LOCATION IDENT:	119		

FILE NAME: I:\2015\2015\WORKING\PLANS\173608768\_PLD.DWG, LAST SAVED BY: BROSSER, LAST SAVED: 2/12/2015 8:49 AM, PLOTTED: 2/12/2015 10:39 AM



VALLEYVIEW MEMORIAL GARDENS

0' 200' 400'  
 MAGNETIC DECLINATION  
 -6°10'51"  
 ANNUAL MAGNETIC DEVIATION  
 -0°3'54"  
 AUGUST 2013



**BUILDINGS/FACILITIES**

NUMBER	DESCRIPTION	ELEVATION	OBSTRUCTION MARKING/LIGHTING	
			EXISTING	FUTURE/ULT.
1	TERMINAL	942.20	NONE	NONE
1A	FUTURE PAVILLION	950.00	NONE	NONE
2	FBO HANGAR	951.59	LIGHTED	LIGHTED
3	HANGAR	947.40	NONE	NONE
4	HANGAR	947.52	NONE	NONE
5	T-HANGAR	943.00	NONE	NONE
6	T-HANGAR	943.01	NONE	NONE
7	T-HANGAR	946.70	LIGHTED	LIGHTED
8	T-HANGAR	947.98	NONE	NONE
9	T-HANGAR	945.69	NONE	NONE
10	FUTURE S.V. HANGAR	960	NONE	NONE
11	FUTURE S.V. HANGAR	960	NONE	NONE
12	FUTURE T-HANGAR	955	NONE	NONE
13	FUTURE S.V. HANGAR	945	NONE	NONE
14	FUTURE S.V. HANGAR	945	NONE	NONE
15	FUTURE WEST TERMINAL	940	NONE	NONE
16	WINDCONE	937.69	LIGHTED	LIGHTED
17	BEACON	954.40	NONE	NONE
18	AWOS III	976.57	LIGHTED	LIGHTED
19	PAPI 07 (EXIST)	N/A	NONE	NONE
20	FUEL	N/A	NONE	NONE
21	PAPI 07 (FUTURE)	N/A	NONE	NONE

NOTE: THE BUILDING RESTRICTION LINE (BRL) IS BASED ON THE COMBINATION OF THE TAXIWAY AND RUNWAY OBJECT FREE AREAS AND THE RUNWAY PROTECTION ZONES.

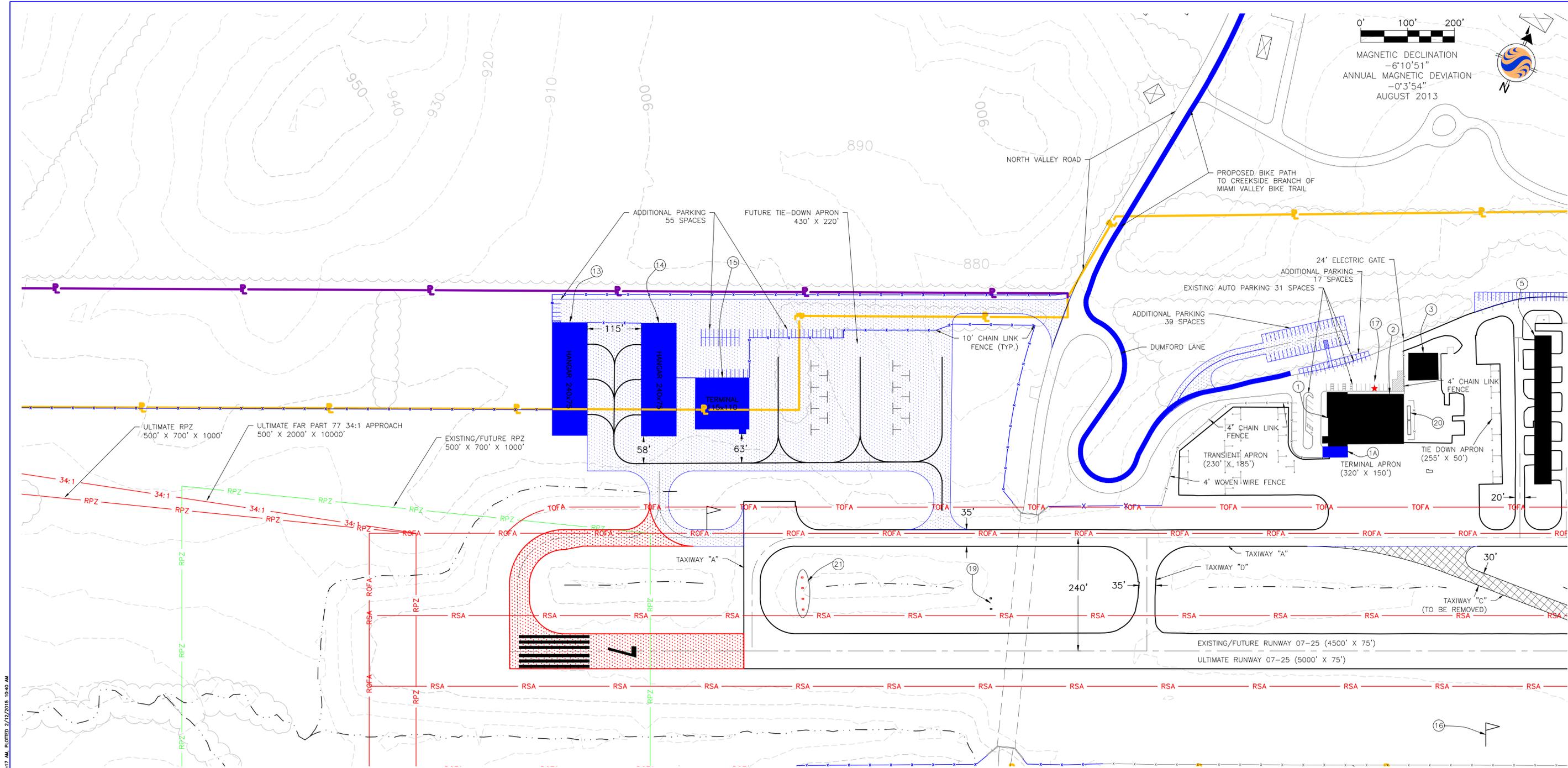
**LEGEND**

EXISTING	FUTURE	ULTIMATE	ITEM
			RUNWAY PAVEMENT
			EXISTING PAVEMENT
			FENCE
			AIRPORT BUILDING
			AIRPORT PAVEMENT
			BEACON
			AIRPORT PROPERTY LINE
			RUNWAY OBJECT FREE AREA
			RUNWAY SAFETY AREA
			TAXIWAY OBJECT FREE AREA
			WOODS/TREES
			NON-AIRPORT BUILDING
			DRAINAGE DITCH
			WATER

FAA CONTRACT NO.	3-39-0094-1812	REVISIONS	GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT XENIA, OHIO
ODOT CONTRACT NO.	-		
JOB NO.	173608768	<b>1500 LAKE SHORE DR., SUITE 100</b> <b>COLUMBUS, OHIO 43204</b>	TERMINAL AREA EAST PLAN
DRAWN BY:	M.C.J.		
CHECKED BY:	J.R.K.		
DATE:	1/24/13		
SITE NUMBER:	17820.*A		
LOCATION IDENT:	119		
SCALE:	1"=100'		DATE:

FILE NAME: 173608768\_TERMINAL PLANNING AREA PLANS 173608768\_PAP.DWG; LAST SAVED BY: MCHESLER; LAST SAVED: 2/12/2015 10:40 AM; PLOTTED: 2/12/2015 10:40 AM

0' 100' 200'  
 MAGNETIC DECLINATION  
 -6°10'51"  
 ANNUAL MAGNETIC DEVIATION  
 -0°3'54"  
 AUGUST 2013



**BUILDINGS/FACILITIES**

NUMBER	DESCRIPTION	ELEVATION	OBSTRUCTION MARKING/LIGHTING	
			EXISTING	FUTURE/ULT.
1	TERMINAL	942.20	NONE	NONE
1A	FUTURE PAVILLION	950.00	NONE	NONE
2	FBO HANGAR	951.59	LIGHTED	LIGHTED
3	HANGAR	947.40	NONE	NONE
4	HANGAR	947.52	NONE	NONE
5	T-HANGAR	943.00	NONE	NONE
6	T-HANGAR	943.01	NONE	NONE
7	T-HANGAR	946.70	LIGHTED	LIGHTED
8	T-HANGAR	947.98	NONE	NONE
9	T-HANGAR	945.69	NONE	NONE
10	FUTURE S.V. HANGAR	960	NONE	NONE
11	FUTURE S.V. HANGAR	960	NONE	NONE
12	FUTURE T-HANGAR	955	NONE	NONE
13	FUTURE S.V. HANGAR	945	NONE	NONE
14	FUTURE S.V. HANGAR	945	NONE	NONE
15	FUTURE WEST TERMINAL	940	NONE	NONE
16	WINDCONE	937.69	LIGHTED	LIGHTED
17	BEACON	954.40	NONE	NONE
18	AWOS III	976.57	LIGHTED	LIGHTED
19	PAPI 07 (EXIST)	N/A	NONE	NONE
20	FUEL	N/A	NONE	NONE
21	PAPI 07 (FUTURE)	N/A	NONE	NONE

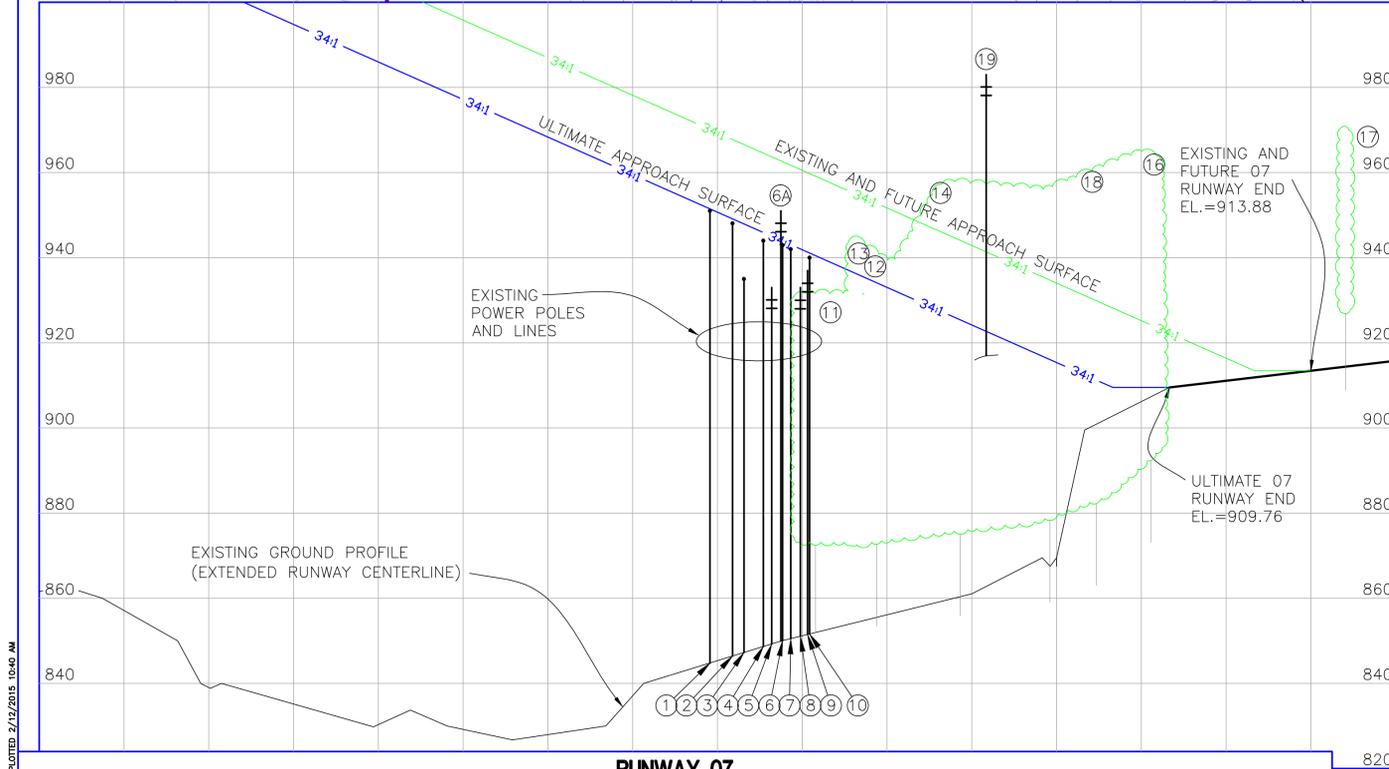
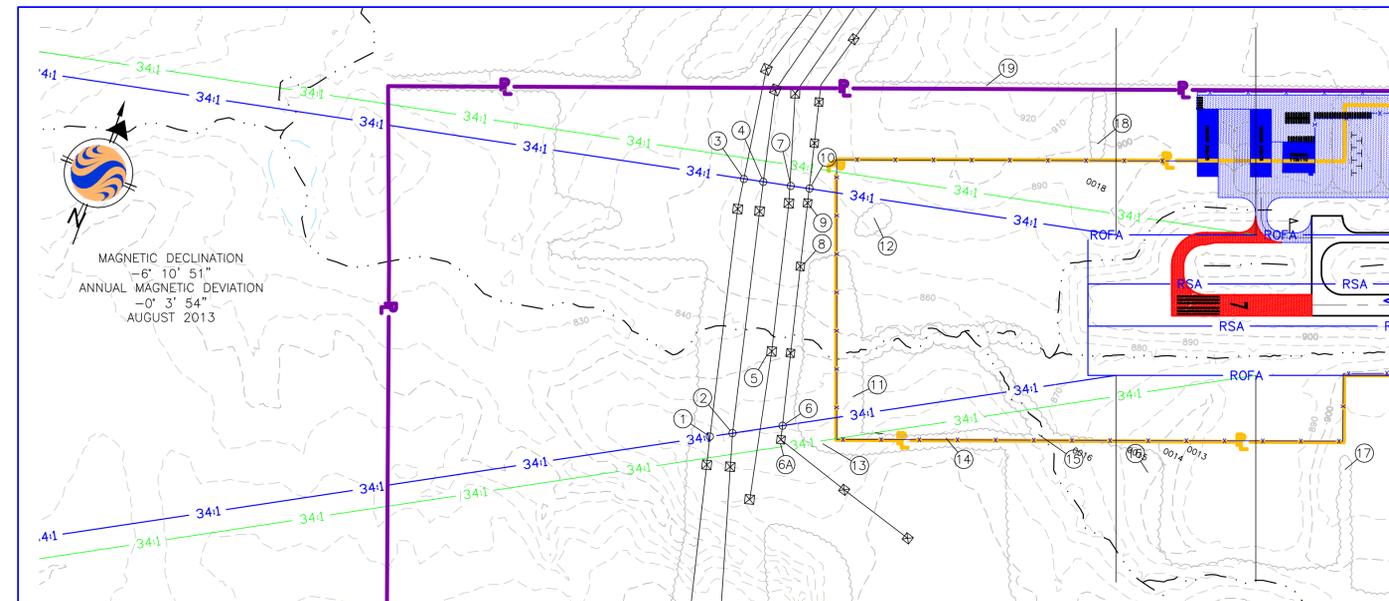
NOTE: THE BUILDING RESTRICTION LINE (BRL) IS BASED ON THE COMBINATION OF THE TAXIWAY AND RUNWAY OBJECT FREE AREAS AND THE RUNWAY PROTECTION ZONES.

**LEGEND**

EXISTING	FUTURE	ULTIMATE	ITEM
—	—	—	RUNWAY PAVEMENT
—	—	—	EXISTING PAVEMENT
-x-	-x-	-x-	FENCE
■	■	■	AIRPORT BUILDING
■	■	■	AIRPORT PAVEMENT
*	*	*	BEACON
- - -	- - -	- - -	AIRPORT PROPERTY LINE
- - -	- - -	- - -	RUNWAY OBJECT FREE AREA
- - -	- - -	- - -	RUNWAY SAFETY AREA
- - -	- - -	- - -	TAXIWAY OBJECT FREE AREA
■	■	■	WOODS/TREES
■	■	■	NON-AIRPORT BUILDING
- - -	- - -	- - -	DRAINAGE DITCH
- - -	- - -	- - -	WATER

FAA CONTRACT NO.	3-39-0094-1812	REVISIONS	GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT XENIA, OHIO
ODOT CONTRACT NO.	-		
JOB NO.	173608768	<b>1500 LAKE SHORE DR., SUITE 100 COLUMBUS, OHIO 43204</b>	TERMINAL AREA WEST PLAN
DRAWN BY:	M.C.J.		
CHECKED BY:	J.R.K.		
DATE:	1/24/13		
SITE NUMBER:	17820.*A		
LOCATION IDENT:	119		
SCALE:	1"=100'		DATE:

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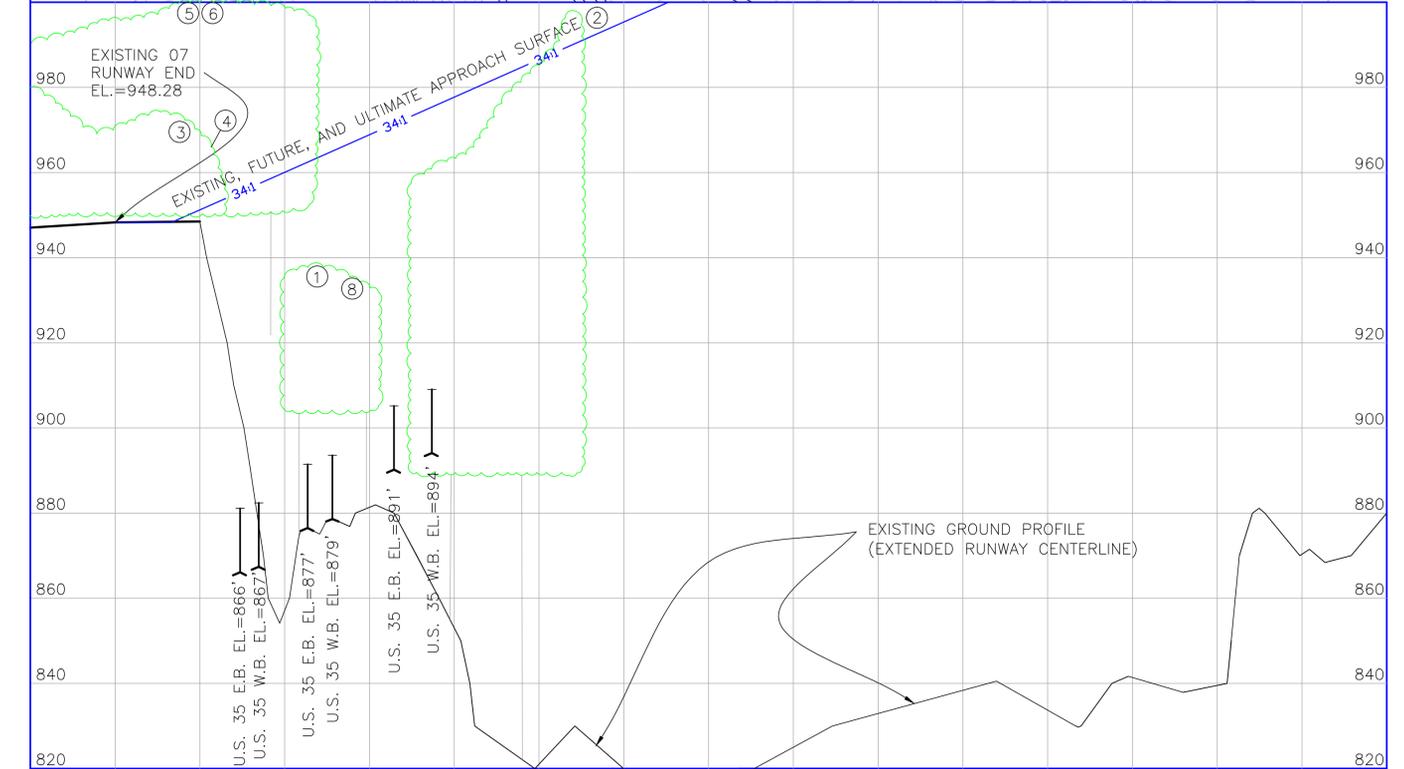
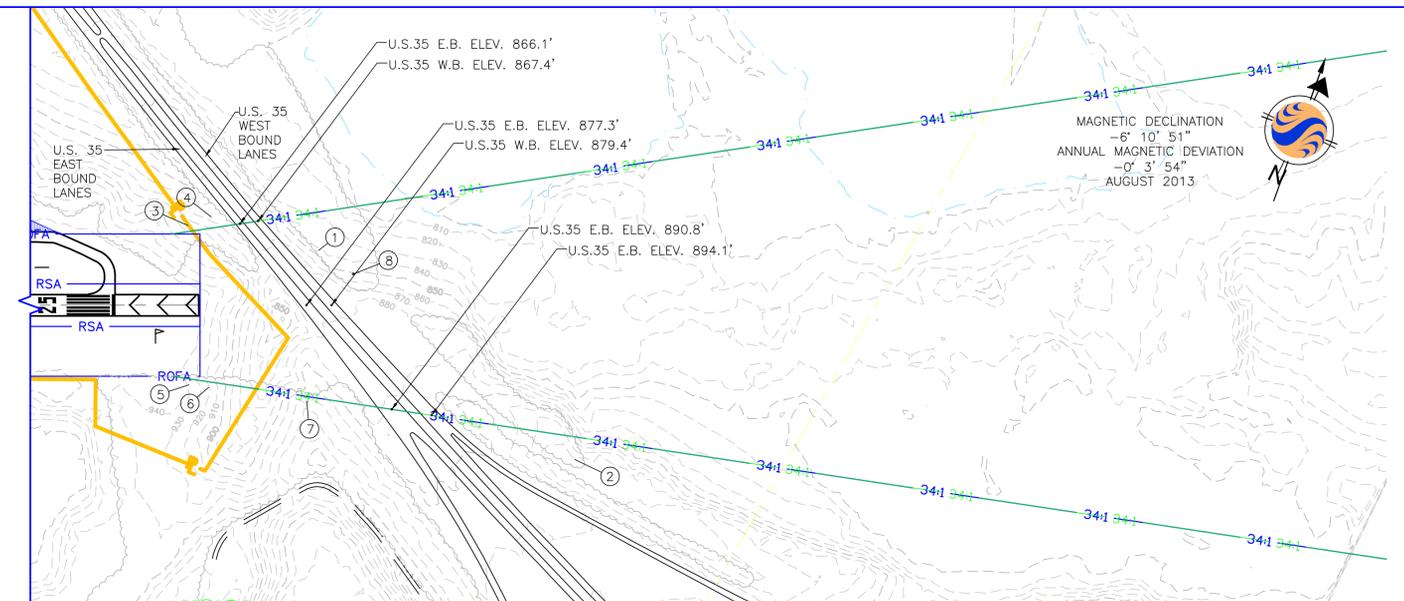


**RUNWAY 07**

NO.	DESCRIPTION	TOP ELEV.	MAX ALLOWABLE ELEVATION		PENETRATION		PROPOSED DISPOSITION		TRIGGERING EVENT		DATE FOR REMOVAL		SURFACE PENETRATED	
			EXIST./FU.	ULTIMATE	EXIST./FU.	ULTIMATE	EXIST./FU.	ULTIMATE	EXIST./FU.	ULTIMATE	EXIST./FU.	ULTIMATE	EXIST./FU.	ULTIMATE
1	POWERLINES	951.00	970.10	951.46	-	-	REMAINS	REMAINS	-	-	-	-	-	-
2	POWERLINES	948.00	967.70	949.06	-	-	REMAINS	REMAINS	-	-	-	-	-	-
3	POWERLINES	935.00	962.55	943.91	-	-	REMAINS	REMAINS	-	-	-	-	-	-
4	POWERLINES	944.00	964.53	945.89	-	-	REMAINS	REMAINS	-	-	-	-	-	-
5	POLE	938.00	963.67	945.03	-	-	REMAINS	REMAINS	-	-	-	-	-	-
6	POWERLINES	944.00	963.64	945.00	-	-	REMAINS	REMAINS	-	-	-	-	-	-
6A	POLE	951.30	961.61	956.11	-	-	REMAINS	REMAINS	-	-	-	-	-	-
7	POWERLINES	942.00	961.68	943.04	-	-	REMAINS	REMAINS	-	-	-	-	-	-
8	POLE	935.00	960.68	942.04	-	-	REMAINS	REMAINS	-	-	-	-	-	-
9	POLE	939.00	959.93	941.29	-	-	REMAINS	REMAINS	-	-	-	-	-	-
10	POWERLINES	940.00	959.72	941.08	-	-	REMAINS	REMAINS	-	-	-	-	-	-
11	TREE	929.23	932.00	932.00	-	-	REMAINS	REMAINS	-	-	-	-	-	-
12	TREE	942.11	954.00	935.20	-	6.91	REMAINS	REMOVE/LOWER	-	NATURAL GROWTH	-	3-5 YEARS	-	APPROACH
13	TREE	944.72	961.46	952.50	-	-	REMAINS	REMAINS	-	-	-	-	-	-
14	TREE	958.94	954.56	949.46	4.38	9.48	REMAINS	REMAINS	-	-	-	-	-	TRANSITIONAL
15	TREE	958.44	950.35	942.40	8.09	16.04	REMAINS	REMAINS	-	-	-	-	-	TRANSITIONAL
16	TREE	965.47	966.86	958.92	-	6.55	REMAINS	REMAINS	-	-	-	-	-	TRANSITIONAL
17	TREE	971.09	961.87	957.74	9.22	13.35	REMAINS	REMAINS	-	-	-	-	-	TRANSITIONAL
18	TREE	960.63	964.70	956.57	-	4.05	REMAINS	REMAINS	-	-	-	-	-	TRANSITIONAL
19	POLE	982.73	997.31	989.19	-	-	REMAINS	REMAINS	-	-	-	-	-	-

**RUNWAY 25**

NO.	DESCRIPTION	TOP ELEV.	MAX ALLOWABLE ELEVATION		PENETRATION		PROPOSED DISPOSITION		TRIGGERING EVENT		DATE FOR REMOVAL		SURFACE PENETRATED	
			EXIST.	FU./ULT.	EXIST.	FU./ULT.	EXIST.	FU./ULT.	EXIST.	FU./ULT.	EXIST.	FU./ULT.	EXIST.	FU./ULT.
1	TREE	938.47	963.58	SAME	-	-	REMAINS	REMAINS	-	-	-	-	-	-
2	TREE	998.07	1001.48	SAME	-	-	REMAINS	REMAINS	-	-	-	-	-	-
3	TREE	972.03	951.94	SAME	20.09	-	REMAINS	REMAINS	-	-	-	-	TRANSITIONAL	TRANSITIONAL
4	TREE	966.23	958.18	SAME	8.05	-	REMAINS	REMAINS	-	-	-	-	TRANSITIONAL	TRANSITIONAL
5	TREE	1006.97	951.96	SAME	55.01	-	REMAINS	REMAINS	-	-	-	-	TRANSITIONAL	TRANSITIONAL
6	TREE	1000.15	952.76	SAME	47.39	-	REMAINS	REMAINS	-	-	-	-	TRANSITIONAL	TRANSITIONAL
7	TREE	995.72	962.11	SAME	33.61	-	REMAINS	REMAINS	-	-	-	-	TRANSITIONAL	TRANSITIONAL
8	TREE	934.53	967.17	SAME	-	-	REMAINS	REMAINS	-	-	-	-	-	-



SURVEY DATE: NOVEMBER 2, 2013

**LEGEND**

EXISTING	FUTURE	ULTIMATE	ITEM
			RUNWAY PAVEMENT
			EXISTING PAVEMENT
			FENCE
			REILS
			AIRPORT BUILDING
			AIRPORT PAVEMENT
			BEACON
			AIRPORT PROPERTY LINE
			RUNWAY OBJECT FREE AREA
			RUNWAY SAFETY AREA
			RUNWAY APPROACH SURFACE
			TAXIWAY OBJECT FREE AREA
			WOODS/TREES
			NON-AIRPORT BUILDING
			DRAINAGE DITCH
			WATER

FAA CONTRACT NO.	3-39-0094-1812
ODOT CONTRACT NO.	-
JOB NO.	173608768
DRAWN BY:	M.C.J.
CHECKED BY:	J.R.K.
DATE:	1/24/13
SITE NUMBER:	17820.*A
LOCATION IDENT:	119

**REVISIONS**

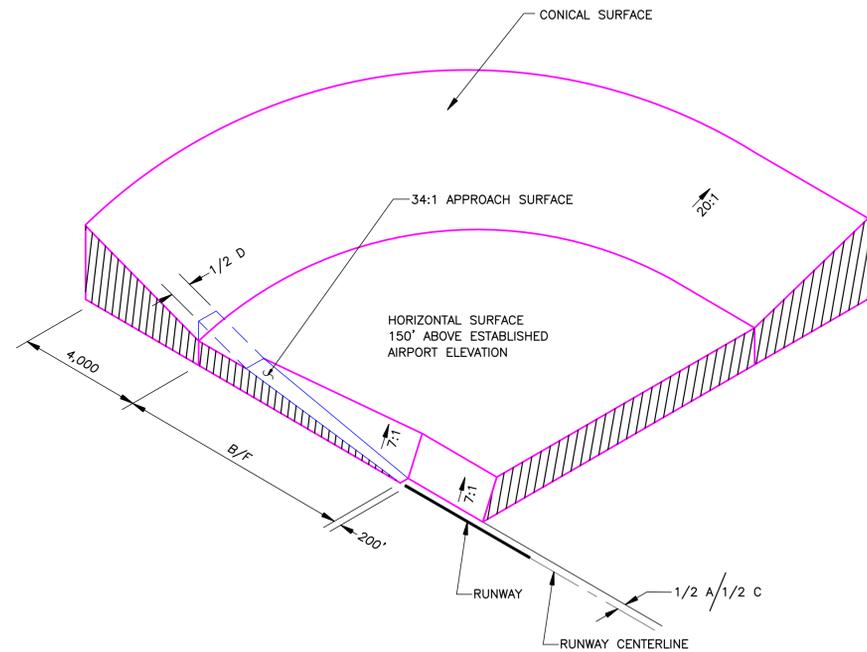

GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT  
XENIA, OHIO

RUNWAY 07-25 APPROACH PLAN

1500 LAKE SHORE DR., SUITE 100  
COLUMBUS, OHIO 43204

SCALE: 1"=300'    DATE: 08/02/13    8/12

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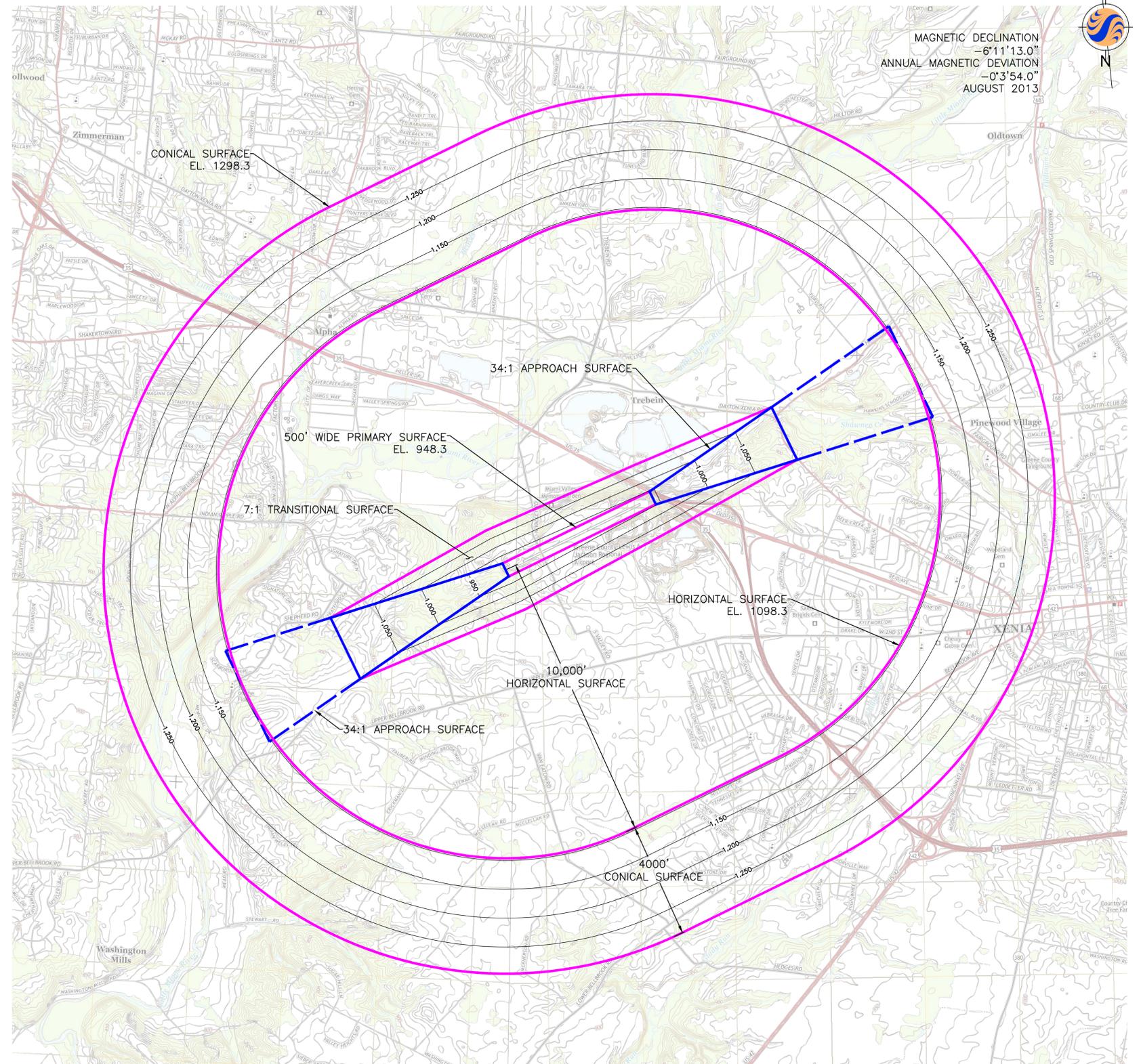


**FAR PART 77 ISOMETRIC VIEW**

DIMENSION	DESCRIPTION	NON-PRECISION INSTRUMENT RUNWAY STANDARD	
		RUNWAY 7	RUNWAY 25
A	WIDTH OF PRIMARY SURFACE	500'	500'
B	RADIUS OF HORIZONTAL SURFACE	10,000'	10,000'
C	INNER APPROACH SURFACE WIDTH	500'	500'
D	OUTER APPROACH SURFACE WIDTH	3,500'	3,500'
E	APPROACH SLOPE	34:1	34:1
F	APPROACH SURFACE LENGTH	10,000'	10,000'

**LEGEND**

- PART 77 SURFACES
- APPROACH BELOW PRIMARY SURFACE
- - - APPROACH ABOVE PRIMARY SURFACE
- OBSTRUCTIONS
- ▤ SCHOOL



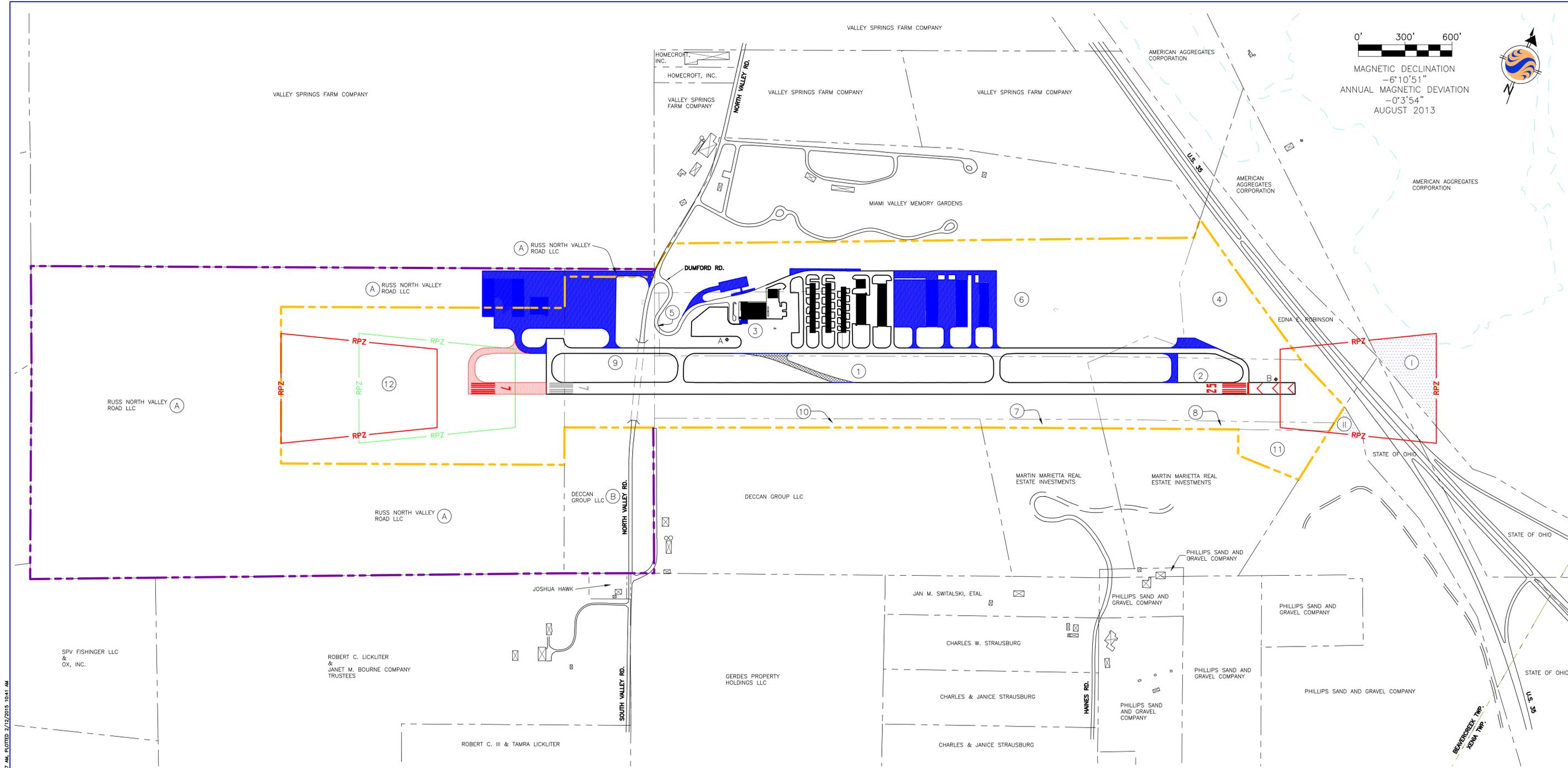
MAGNETIC DECLINATION  
-6°11'13.0"  
ANNUAL MAGNETIC DEVIATION  
-0°3'54.0"  
AUGUST 2013



FILE NAME: I:\173608768\AVIATION\PLANNING\PLAN\173608768\_P77.DWG, LAST SAVED BY: BROSSIER, LAST SAVED: 8/20/2014 10:56 AM, PLOTTED: 2/12/2015 10:41 AM

FAA CONTRACT NO.	3-39-0094-1812	REVISIONS	GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT XENIA, OHIO
ODOT CONTRACT NO.	-		
JOB NO.	173608768		PART 77 SURFACES
DRAWN BY:	M.C.J.		<b>1500 LAKE SHORE DR., SUITE 100 COLUMBUS, OHIO 43204</b>
CHECKED BY:	J.R.K.		
DATE:	1/24/13		
SITE NUMBER:	17820.*A		
LOCATION IDENT:	119		
		SCALE: 1"=2000'	DATE: 08/02/13





0' 300' 600'

MAGNETIC DECLINATION  
-6°10'51"  
ANNUAL MAGNETIC DEVIATION  
-0°3'54"  
AUGUST 2013

\* PARTIAL REIMBURSEMENT FOR PARCEL NO.'S 1, 2, 3, 4, 5, AND 6 COMPLETED UNDER AIP PROJECT 3-39-0094-03.

\*\* REIMBURSEMENT FOR PARCEL 12 COMPLETED UNDER AIP PROJECTS 3-39-0094-0803 AND 0904.

**AIRPORT PROPERTY**

FEDERAL PROJECT NO.	PARCEL	GRANTOR	TITLE	VOL.-PAGE	DATE	ACRES
AIP 3-39-0094-03*	1	HIMES GUERNSEY FARMS	FS	0402-0464	3/30/1967	25.848
AIP 3-39-0094-03*	2	EDNA E. ROBINSON	FS	0402-0464	3/30/1967	13.452
AIP 3-39-0094-03*	3	HIMES GUERNSEY FARMS	FS	0407-0656	7/13/1967	10.744
AIP 3-39-0094-03*	4	EDNA E. ROBINSON	FS	0422-0082	7/10/1968	8.475
AIP 3-39-0094-03*	5	HIMES GUERNSEY FARMS	FS	0425-0119	9/18/1968	0.275
AIP 3-39-0094-03	6	HIMES GUERNSEY FARMS	FS	0430-0682	2/19/1969	43.450
AIP 3-39-0094-01	7	EDNA E. ROBINSON	FS	0213-0889	4/24/1984	0.885
AIP 3-39-0094-01	8	EDNA E. ROBINSON	FS	0213-0889	4/24/1984	1.663
AIP 3-39-0094-01	9	JOHN W. SAUNDERS	FS	0231-0731	10/31/1984	12.384
AIP 3-39-0094-01	10	ALICE R. SAUNDERS	FS	0231-0731	10/31/1984	2.409
AIP 3-39-0094-03	11	EDNA E. ROBINSON	FS	0298-0580	7/23/1986	2.578
**	12	FRITX J. RUSS	FS	0962-0703	12/26/1995	41.322

**AIRPORT AVIGATION EASEMENTS**

REASON FOR ACQUISITION	PARCEL	GRANTOR	TITLE	VOL.-PAGE	DATE	ACRES
RPZ PROTECTION	I	AMERICAN AGGREGATES CORP	-	-	-	3.12
RPZ PROTECTION	II	PHILLIPS SAND AND GRAVEL CO	-	-	-	0.43

**PROPERTY OF INTEREST**

REASON FOR ACQUISITION	PARCEL	GRANTOR	TITLE	VOL.-PAGE	DATE	ACRES
FUTURE DEVELOPMENT	A	RUSS NORTH VALLEY ROAD LLC	-	-	-	113.46
FUTURE DEVELOPMENT	B	DECCAN GROUP LLC	-	-	-	12.45

**AVIGATION EASEMENTS OF INTEREST**

REASON FOR ACQUISITION	PARCEL	GRANTOR	TITLE	VOL.-PAGE	DATE	ACRES
RPZ PROTECTION	I	AMERICAN AGGREGATES CORP	-	-	-	3.12
RPZ PROTECTION	II	PHILLIPS SAND AND GRAVEL CO	-	-	-	0.43

**U.S.G.S. MONUMENTS**

A: GREENPORT  
N. 619174.03  
E. 1547542.70  
ELEV. 924.93'  
STA. 21+56.68  
OFFSET 310.39' LT

B: GREENPORT AZ MK  
N. 620486.68  
E. 1550814.29  
ELEV. 946.95'  
STA. 56+72.64  
OFFSET 57.28' LT

**LEGEND**

EXISTING	FUTURE	ULTIMATE	ITEM
—	—	—	AVIGATION EASEMENT
—	—	—	RUNWAY PAVEMENT
—	—	—	EXISTING PAVEMENT
-x-	-xx-	-xx-	FENCE
□	□	□	REILS
■	■	■	AIRPORT BUILDING
■	■	■	AIRPORT PAVEMENT
—	—	—	AIRPORT PROPERTY LINE
—	—	—	RUNWAY PROTECTION ZONE
—	—	—	WOODS/TREES
—	—	—	NON-AIRPORT BUILDING
—	—	—	DRAINAGE DITCH
—	—	—	WATER

FAA CONTRACT NO. 3-39-0094-1812  
ODOT CONTRACT NO. —  
JOB NO. 173608768  
DRAWN BY: M.C.J.  
CHECKED BY: J.R.K.  
DATE: 1/24/13  
SITE NUMBER: 17820.\*A  
LOCATION IDENT: I19

**REVISIONS**

GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT  
XENIA, OHIO

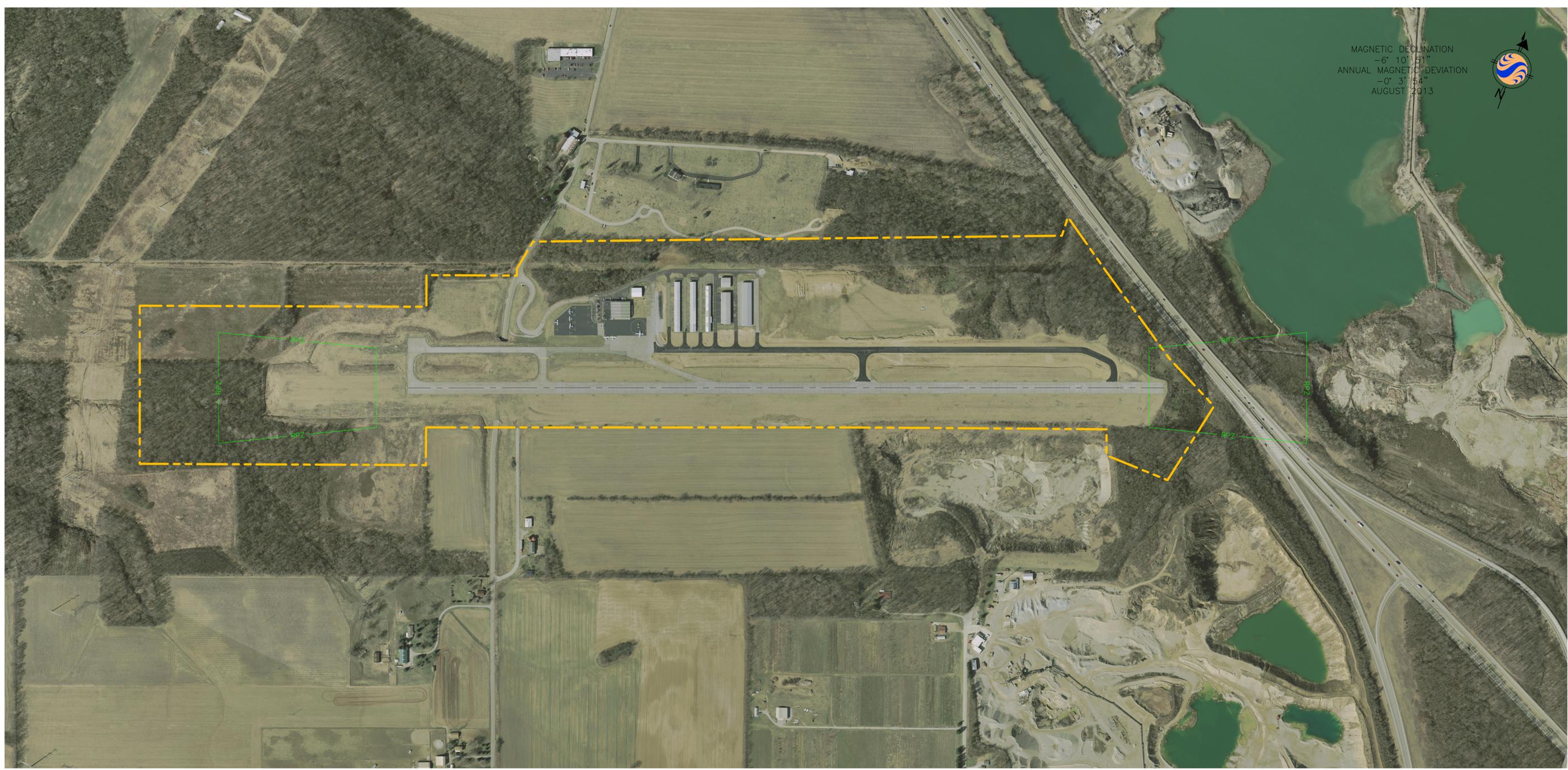
PROPERTY MAP

1500 LAKE SHORE DR., SUITE 100  
COLUMBUS, OHIO 43204

SCALE: 1"=300' DATE: 08/02/13

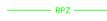
FILE NAME: I:\2008\2015\AIRPORT\PROJECTS\AVIGATION\AVIGATION.PLT DATE: 08/02/2015 10:37 AM PLOTTED: 2/12/2015 10:41 AM

MAGNETIC DECLINATION  
 -6° 10' 15"  
 ANNUAL MAGNETIC DEVIATION  
 -0° 3' 54"  
 AUGUST 2013



DATE OF PHOTO: 11/15/12

**LEGEND**

- | EXISTING  | ITEM                   |
|---|------------------------|
|  | AIRPORT PROPERTY LINE  |
|  | RUNWAY PROTECTION ZONE |

FILE NAME: \\173608768\WORKING\DRAWINGS\PLANS\173608768\_AIRP.DWG, LAST SAVED BY: BICROSER, LAST SAVED: 2/12/2015 10:41 AM, PLOTTED: 2/12/2015 10:41 AM

FAA CONTRACT NO.	3-39-0094-1812	REVISIONS	GREENE COUNTY-LEWIS A. JACKSON REGIONAL AIRPORT XENIA, OHIO
ODOT CONTRACT NO.	-		
JOB NO.	173608768		AERIAL PHOTOGRAPH
DRAWN BY:	M.C.J.		 <b>1500 LAKE SHORE DR., SUITE 100 COLUMBUS, OHIO 43204</b>
CHECKED BY:	J.R.K.		
DATE:	1/24/13		
SITE NUMBER:	17820.A		
LOCATION IDENT:	119		
		SCALE: 1"=300'	DATE: 08/02/13 12/2



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Detroit Airports District Office  
Metro Airport Center  
11677 S. Wayne Road, Ste. 107  
Romulus, MI 48174

Mr. William H. VonGunten, President  
Green County Regional Airport Authority  
140 N. Valley Road  
Xenia, OH 45385

Dear Mr. VonGunten:

Lewis A. Jackson Regional Airport  
Airport Layout Plan (ALP) Approval  
Airspace Case Number 2014-AGL-7183-NRA

Enclosed is a conditionally approved copy of the Airport Layout Plan (ALP) for the Lewis A. Jackson Regional Airport dated February 2014. This letter cancels or supersedes all prior ALP approvals. The ALP approval is based on recognition of and adherence to the following:

The approval is not to be considered a commitment of Federal funding for the proposed development. The FAA has concurred with the proposed development for planning purposes only based on current safety, utility, and efficiency standards. Actual development should comply with approved standards applicable at the time of construction. The sponsor must provide the FAA with justification of need before seeking FAA financial participation in the development projects depicted on this ALP.

Design standard modifications have not been requested or granted as part of this ALP approval.

If any of the design critical aircraft or aircraft groups change, this ALP must be reevaluated by the FAA. This ALP was reviewed in accordance with B-II design standards based on the current and future critical design aircraft.

Based on the information contained in the May 2014 Master Plan Update Report, the FAA concurs with the report findings that any future runway extension (from the existing runway length of 4,500' to an ultimate runway length of 5,000') is not justified at this time, and therefore not eligible for FAA funding participation. Future requests for reconsideration of the eligibility for FAA funding participation in a runway extension project will need to be adequately demonstrated through a justification study which will be the sole responsibility of the airport sponsor.

Sheet 11 entitled *Property Map* has been included for informational purposes only and does not replace the required Exhibit A for grant assurance purposes.

Our approval does not infer or imply that the land in the airport vicinity is considered compatible with airport operations. Federal requirements stipulate:

1. All development programs should be reasonably consistent with the plans of local and state planning agencies for the development in the airport vicinity.
2. That fair consideration has been given to the interest of communities in or near the airport.

3. That development programs provide for the protection and enhancement of the environment.

The FAA offers no objections to the proposed ultimate airspace utilization as depicted on the ALP based on considerations of safe and efficient use of airspace. The ALP has the status of "Plan on File" for the purpose of 14 CFR 77, *Obstruction Evaluations*, and 14 CFR 152, *Airport Aid Program*. A review of the airside landing area development was conducted according to the following 14 CFR's: -77, -152, -and -157, *Notice of Construction, Alteration, Activation, and Deactivation of Airports* (reference Aeronautical Study Number 2014-AGL-7183-NRA). It should be noted that FAA cannot prevent erection of any structure near an airport. Airport environs can only be protected through state and local zoning ordinances, building regulations, and like requirements. To avoid conflicts with future development, we recommend that you utilize the ALP when preparing leases. We further recommend that you provide copies to state and local planning and zoning boards as well as county and city officials. We recommend that you encourage them to adopt compatible land use criteria in and around the airport. Copies should also be distributed to Fixed Base Operators and airport users.

All development depicted on this ALP must comply with the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190) and have FAA environmental approval prior to construction. This applies to development, even if no FAA funding is involved. Additional requirements concerning FAA NEPA approval can be found in FAA Order 5050.4B, *"National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions."*

The Airport and Airway Improvement Act (49 USC 47107(a)(16)(D)) requires the sponsor to eliminate any adverse effects on Federal facilities, or bear all costs to relocate those facilities, that are a result of an airport change. However, if AIP eligible construction/development items adversely affect FAA facilities, the cost of relocating the facilities may be eligible under AIP.

This approval does not include a detailed evaluation of actual construction. Prior to constructing any development on the airport, notice (FAA Form 7460-1) consistent with 14 CFR 77 must be filed with this office. This approval does not include approval for temporary construction equipment which may be used during actual construction, e.g., cranes, equipment staging areas, site access routes, etc. A separate construction safety/phasing plan for any project should be reviewed by the FAA no less than 60 days prior to beginning any project. The airport must take all measures necessary during construction to ensure there are no runway incursions.

If development is planned without aviation trust fund investments that will change the status or geometrics of runways, taxiways, aprons, or other operating airport surfaces, notice (FAA Form 7480-1) must be filed with this office consistent with 14 CFR 157.

We trust this letter provides a clear explanation of the conditions and terms of our approval. If you desire further clarification, please contact our office at 734.229.2900.

Sincerely,

John L. Mayfield, Jr.  
Manager  
Detroit Airports District Office

cc: Ohio Department of Transportation – Office of Aviation



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Detroit Airports District Office  
Metro Airport Center  
11677 S. Wayne Road, Ste. 107  
Romulus, MI 48174

February 12, 2015

Mr. William H. VonGunten, President  
Green County Regional Airport Authority  
140 N. Valley Road  
Xenia, OH 45385

Dear Mr. VonGunten:

Lewis A. Jackson Regional Airport  
Airspace Case Number 2014-AGL-7183-NRA  
Airspace Approval

We have completed an aeronautical study of the proposed Airport Layout Plan (ALP) dated February 2014. Based on that study, the ALP is approved from an airspace utilization standpoint.

We provide the following for informational purposes:

1. The connector Taxiway C does not meet current FAA design standards for a non-towered general aviation airport. Paragraph 409a of FAA Advisory Circular 150/5300-13A (Airport Design) states that an exit taxiway should “avoid designs that encourage use of an acute angle exit taxiway as a runway entrance or runway crossing point, as this does not provide a pilot with the best view of the runway in both directions”. The ADO understands that taxiway C will be removed as part of the future runway 7/25 rehabilitation project. The ALP set should show the taxiway to be removed on all future sheets in the ALP set.
2. The Future Airport Layout Plan (Sheet 4/12) has an incorrect labeling of the runway as 5,000’. The future runway length remains at 4,500’. The Ultimate Airport Layout Plan correctly labels the ultimate runway length as 5,000’.
3. Several sheets in the ALP set (4, 5, and 8) do not have do not include any marking of the runway ends. Please update these sheets to reflect the end of useable pavement, chevron unusable pavement, and runway numbering.
4. Air Traffic offers the following: No objection with provision. All structures listed on the Airport Part 77 report for Greene County-Lewis A. Jackson Regional Airport generated on 10/23/2014 were checked for impact. The VFR traffic patterns were reviewed for CAT C. There are a number of obstacles on pages 8 and 9 of the ALP set that would exceed various Part 77 surfaces for the proposed runway 7/25 extension. Those obstacles need to be studied to determine impact and mitigation before the runway is upgraded. If they have not been studied as OE or NRA cases they will need to be filed. Additionally, any other structures that have not been studied but meet filing criteria will have to be filed and studied at a later date.
5. Tech Ops offers the following: No Objection.

6. The Central Services Flight Procedures Office (CSA FPO) offers the following: No IFR effect. This ALP update identifies an ultimate desire to extend the runway to 5000 FT. The runway 7 Instrument Flight Procedures (IFP) will require amending: RNAV (GPS) RWY 7, VOR runway 7, and the runway 25 Takeoff and Departure Procedure (ODP). Please provide the proposed runway engineering data for runway 7 at least 18 months prior to the expected opening of the runway so that the amendment of IFPs can be accomplished to coincide with the planned opening date. A new airport/obstacle survey that meets the criteria for Runways with Vertical Guidance outlined in AC 150/5300-18B must be re-accomplished for runway 7 and then validated by the FAA GIS and NFDC offices prior to any IFP development. This study does not constitute a formal request for IFP development. A formal request for IFP development must be submitted via the AeroNav Products IFP request website ([http://www.faa.gov/air\\_traffic/flight\\_info/aeronav/ifpinitiation/](http://www.faa.gov/air_traffic/flight_info/aeronav/ifpinitiation/)) prior to any procedure development.

If you desire further clarification of these comments, please contact Brad Davidson, of this office, at (734) 229-2916. When all comments from this airspace approval letter and subsequent phone conversations have been incorporated onto the final ALP please submit electronic copies for ADO concurrence the changes are acceptable. Once the ADO concurs with the changes as presented please forward 5 signed copies of the revised ALP showing the revisions on all applicable pages, for ALP approval.

Sincerely,



Brad Davidson, P.E.  
Detroit Airports District Office

cc: Mr. Dave Dennis (Ohio Department of Transportation)

## **Appendix A**

### **Chapter 5: Environmental Overview Supporting Documents**

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# Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

**Ohio Division of Wildlife**  
*Scott Zody, Chief*  
2045 Morse Rd., Bldg. G  
Columbus, OH 43229-6693

January 14, 2014

Caroline Ammerman  
Stantec Consulting Services, Inc.  
11687 Lebanon Road  
Cincinnati, OH 45241-2012

Dear Ms. Ammerman

After reviewing the Natural Heritage Database, I find the Division of Wildlife has no records of rare or endangered species in the Lewis Jackson Airport Master Plan Update project area, including a one mile buffer, in Beaver Creek Township, Greene County, Ohio. The site is about 0.5 miles south of the Little Miami State Scenic River. We are unaware of any additional unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one mile radius of the project area. We also have no records for Indiana Bat (*Myotis sodalis*) capture locations within a five mile radius or hibernacula within a ten mile radius of the project site.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although we inventory all types of plant communities, we only maintain records on the highest quality areas.

This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Please contact me at 614-265-6452 if I can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "Greg Schneider".

Greg Schneider, Administrator  
Ohio Natural Heritage Database Program

**Greene County - Lewis A. Jackson Airport**

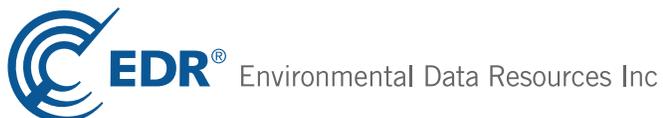
140 N. Valley Road

Xenia, OH 45385

Inquiry Number: 3827918.2s

January 10, 2014

# The EDR Radius Map™ Report



440 Wheelers Farms Road  
Milford, CT 06461  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

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Government Records Searched/Data Currency Tracking .....	GR-1

## GEOCHECK ADDENDUM

GeoCheck - Not Requested

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

140 N. VALLEY ROAD  
XENIA, OH 45385

#### COORDINATES

Latitude (North): 39.6915000 - 39° 41' 29.40"  
Longitude (West): 83.9918000 - 83° 59' 30.48"  
Universal Transverse Mercator: Zone 17  
UTM X (Meters): 243446.9  
UTM Y (Meters): 4397588.0  
Elevation: 929 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 39083-F8 XENIA, OH  
Most Recent Revision: 1994  
  
West Map: 39084-F1 BELLBROOK, OH  
Most Recent Revision: 1991

### AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year: 2011  
Source: USDA

### TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

<u>Site</u>	<u>Database(s)</u>	<u>EPA ID</u>
LEWIS A JACKSON REGIONAL AIRPORT 140 N VALLEY RD XENIA, OH 45385	OH NPDES	N/A
GREENE COUNTY REGIONAL AIRPORT 140 NORTH VALLEY ROAD XENIA, OH 45385	OH UIC	N/A
GREENE CO REG AIRPORT AUTH 140 N VALLEY RD XENIA, OH	FINDS	N/A

# EXECUTIVE SUMMARY

140 N VALLEY RD  
140 N VALLEY RD  
XENIA, OH

OH RGA LUST

N/A

## **DATABASES WITH NO MAPPED SITES**

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## **STANDARD ENVIRONMENTAL RECORDS**

### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

### ***Federal CERCLIS list***

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System  
FEDERAL FACILITY..... Federal Facility Site Information listing

### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators

### ***Federal institutional controls / engineering controls registries***

US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls  
LUCIS..... Land Use Control Information System

### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

## EXECUTIVE SUMMARY

### **State- and tribal - equivalent CERCLIS**

OH SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

### **State and tribal landfill and/or solid waste disposal site lists**

OH SWF/LF..... Licensed Solid Waste Facilities

### **State and tribal leaking storage tank lists**

OH UNREG LTANKS..... Ohio Leaking UST File  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### **State and tribal registered storage tank lists**

INDIAN UST..... Underground Storage Tanks on Indian Land  
FEMA UST..... Underground Storage Tank Listing

### **State and tribal institutional control / engineering control registries**

OH ENG CONTROLS..... Sites with Engineering Controls  
OH INST CONTROL..... Sites with Institutional Engineering Controls  
OH HIST ENG CONTROLS... Operation & Maintenance Agreements Database  
OH HIST INST CONTROLS.. Institutional Controls Database

### **State and tribal voluntary cleanup sites**

OH VCP..... Voluntary Action Program Sites  
INDIAN VCP..... Voluntary Cleanup Priority Listing

### **State and tribal Brownfields sites**

OH BROWNFIELDS..... Ohio Brownfield Inventory

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### **Local Brownfield lists**

US BROWNFIELDS..... A Listing of Brownfields Sites

#### **Local Lists of Landfill / Solid Waste Disposal Sites**

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations  
ODI..... Open Dump Inventory  
OH HIST LF..... Old Solid Waste Landfill  
OH SWRCY..... Recycling Facility Listing  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

#### **Local Lists of Hazardous waste / Contaminated Sites**

US CDL..... Clandestine Drug Labs  
OH CDL..... Clandestine Drug Lab Locations

## EXECUTIVE SUMMARY

US HIST CDL..... National Clandestine Laboratory Register

### **Local Land Records**

LIENS 2..... CERCLA Lien Information

### **Records of Emergency Release Reports**

HMIRS..... Hazardous Materials Information Reporting System  
OH SPILLS..... Emergency Response Database  
OH SPILLS 90..... SPILLS 90 data from FirstSearch  
OH SPILLS 80..... SPILLS 80 data from FirstSearch

### **Other Ascertainable Records**

RCRA NonGen / NLR..... RCRA - Non Generators  
DOT OPS..... Incident and Accident Data  
DOD..... Department of Defense Sites  
FUDS..... Formerly Used Defense Sites  
CONSENT..... Superfund (CERCLA) Consent Decrees  
ROD..... Records Of Decision  
UMTRA..... Uranium Mill Tailings Sites  
US MINES..... Mines Master Index File  
TRIS..... Toxic Chemical Release Inventory System  
TSCA..... Toxic Substances Control Act  
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)  
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing  
SSTS..... Section 7 Tracking Systems  
ICIS..... Integrated Compliance Information System  
PADS..... PCB Activity Database System  
RADINFO..... Radiation Information Database  
RAATS..... RCRA Administrative Action Tracking System  
RMP..... Risk Management Plans  
OH TOWNGAS..... DERR Towngas Database  
OH DRYCLEANERS..... Drycleaner Facility Listing  
OH AIRS..... Title V Permits Listing  
OH USD..... Urban Setting Designation Sites  
OH HIST USD..... Urban Setting Designations Database  
INDIAN RESERV..... Indian Reservations  
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing  
OH Financial Assurance..... Financial Assurance Information Listing  
OH COAL ASH..... Coal Ash Disposal Site Listing  
OH CRO..... Cessation of Regulated Operations Facility Listing  
LEAD SMELTERS..... Lead Smelter Sites  
2020 COR ACTION..... 2020 Corrective Action Program List  
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List  
PRP..... Potentially Responsible Parties  
EPA WATCH LIST..... EPA WATCH LIST  
COAL ASH DOE..... Steam-Electric Plant Operation Data  
PCB TRANSFORMER..... PCB Transformer Registration Database  
US FIN ASSUR..... Financial Assurance Information

### **EDR HIGH RISK HISTORICAL RECORDS**

#### **EDR Exclusive Records**

EDR MGP..... EDR Proprietary Manufactured Gas Plants

# EXECUTIVE SUMMARY

EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations

## SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal CERCLIS NFRAP site List***

CERC-NFRAP: Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

A review of the CERC-NFRAP list, as provided by EDR, and dated 04/26/2013 has revealed that there is 1 CERC-NFRAP site within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>SYSTEMS TECHNOLOGY SYSTECH</i></b>	<b><i>245 N VALLEY RD</i></b>	<b><i>WNW 1/4 - 1/2 (0.421 mi.)</i></b>	<b><i>C11</i></b>	<b><i>13</i></b>

### ***Federal RCRA generators list***

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 09/10/2013 has revealed that there is 1 RCRA-CESQG site within approximately 0.75 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>SYSTEMS TECHNOLOGY SYSTECH</i></b>	<b><i>245 N VALLEY RD</i></b>	<b><i>WNW 1/4 - 1/2 (0.421 mi.)</i></b>	<b><i>C11</i></b>	<b><i>13</i></b>

## EXECUTIVE SUMMARY

### **State- and tribal - equivalent CERCLIS**

OH DERR: The DERR database is an index of sites for which Ohio EPA maintains files. It includes sites with known or suspected contamination, but a site's inclusion in the database does not mean that it is now or has ever been contaminated.

A review of the OH DERR list, as provided by EDR, and dated 08/14/2013 has revealed that there are 2 OH DERR sites within approximately 1.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>SYSTEMS TECHNOLOGY SYSTECH</b> VALLEY ASPHALT CORP XENIA, VAL Activity: SA	<b>245 N VALLEY RD</b> VALLEY RD	<b>WNW 1/4 - 1/2 (0.421 mi.)</b> NNW 1/2 - 1 (0.738 mi.)	<b>C11</b> 15	<b>13</b> 20

### **State and tribal leaking storage tank lists**

OH LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Commerce Division of State Fire Marshal's List of Reported Petroleum Underground Storage Tank Release Incidents.

A review of the OH LUST list, as provided by EDR, and dated 11/18/2013 has revealed that there is 1 OH LUST site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>PHILLIPS SAND &amp; GRAVEL</b> FR Status: Inactive FR Status: NFA: No Further Action Facility Status: Inactive FR Status: NFA: No Further Action	<b>30 HAINES RD</b>	<b>ESE 1/4 - 1/2 (0.434 mi.)</b>	<b>B12</b>	<b>17</b>

### **State and tribal registered storage tank lists**

OH UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Commerce Division of State Fire Marshal's Facility File.

A review of the OH UST list, as provided by EDR, and dated 11/18/2013 has revealed that there is 1 OH UST site within approximately 0.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>PHILLIPS SAND &amp; GRAVEL</b>	<b>30 HAINES RD</b>	<b>ESE 1/4 - 1/2 (0.434 mi.)</b>	<b>B12</b>	<b>17</b>

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### **Local Lists of Registered Storage Tanks**

## EXECUTIVE SUMMARY

OH ARCHIVE UST: Underground storage tank records that have been removed from the Underground Storage Tank database.

A review of the OH ARCHIVE UST list, as provided by EDR, and dated 11/18/2013 has revealed that there is 1 OH ARCHIVE UST site within approximately 0.75 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>Not reported</i>	<b>30 HAINES RD</b>	<b>ESE 1/4 - 1/2 (0.434 mi.)</b>	<b>B13</b>	<b>18</b>

### ***Other Ascertainable Records***

MLTS: The Material Licensing Tracking System is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and are subject to NRC licensing requirements.

A review of the MLTS list, as provided by EDR, and dated 07/22/2013 has revealed that there is 1 MLTS site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SYSTECH CORP.	245 NORTH VALLEY ROAD	WNW 1/4 - 1/2 (0.421 mi.)	C9	12

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 03/08/2013 has revealed that there is 1 FINDS site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
HEMECROFT INC	245 NORTH VALLEY ROAD	WNW 1/4 - 1/2 (0.421 mi.)	C8	12

OH UIC: A listing of underground injection well locations.

A review of the OH UIC list, as provided by EDR, and dated 10/09/2013 has revealed that there is 1 OH UIC site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SYSTECH CORP	245 NORTH VALLEY DR	WNW 1/4 - 1/2 (0.421 mi.)	C10	13

## EXECUTIVE SUMMARY

OH NPDES: General information regarding NPDES (National Pollutant Discharge Elimination System) permits.

A review of the OH NPDES list, as provided by EDR, and dated 11/11/2013 has revealed that there is 1 OH NPDES site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
LEWIS A JACKSON AIRPORT, GREEN	104 N VALLEY RD	WSW 1/4 - 1/2 (0.316 mi.)	5	9

US AIRS: The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

A review of the US AIRS list, as provided by EDR, and dated 10/23/2013 has revealed that there is 1 US AIRS site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
PHILLIPS SAND & GRAVEL CO.	30 HAINES RD.	ESE 1/4 - 1/2 (0.420 mi.)	B7	9

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR US Hist Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Cleaners list, as provided by EDR, has revealed that there is 1 EDR US Hist Cleaners site within approximately 0.75 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
BOSTON BARGAIN STORE	132 N VALLEY RD	WSW 1/4 - 1/2 (0.326 mi.)	6	9

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

OH RGA LUST: The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a

## EXECUTIVE SUMMARY

list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists.

A review of the OH RGA LUST list, as provided by EDR, has revealed that there are 2 OH RGA LUST sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>Not reported</i>	<i>30 HAINES RD</i>	<i>ESE 1/4 - 1/2 (0.434 mi.)</i>	<i>B13</i>	<i>18</i>
Not reported	46 HAINES RD	SE 1/4 - 1/2 (0.465 mi.)	14	20

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

<u>Site Name</u>	<u>Database(s)</u>
VALLEY ASPHALT CORP - PLANT #11 (0	FINDS, US AIRS
VALLEY ASPHALT CORP (SIA)	CERC-NFRAP, RCRA NonGen / NLR
BEAVERCREEK WETLAND ASSOC	RCRA-SQG, FINDS
OHIO DEPT OF TRANSPORTATION	RCRA-SQG, FINDS
COLUMBIA GAS TRANSMISSION CORP	RCRA NonGen / NLR, FINDS
ODOT HIGHWAY BRIDGE	RCRA NonGen / NLR, FINDS
GREENE CO SR 35 1184 PROJECT	RCRA NonGen / NLR, FINDS
VERIZON WIRELESS - WEST XENIA	FINDS
GREENE COUNTY GARAGE	FINDS
SKYDIVE GREENE COUNTY INC	FINDS
DONLEY OIL BULK PLANT	OH UNREG LTANKS, OH SPILLS
GREENE CO CONTRACTOR	OH SPILLS
GREEN COUNTY LANDMARK	OH SPILLS
GREENE LANDMARK	OH SPILLS
XENIA WATER TREATMENT PLANT	ICIS
WGNZ RADIO TOWERS	OH NPDES
WRIGHT CYCLE ESTATES SECTION 8	OH NPDES
WRIGHT CYCLE ESTATES SECTIONS 9 10	OH NPDES
WRIGHT CYCLE ESTATES SECTION 14 (6	OH NPDES
WRIGHT CYCLE ESTATES SECTION 12	OH NPDES

# OVERVIEW MAP - 3827918.2s



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Manufactured Gas Plants

■ National Priority List Sites

■ Dept. Defense Sites

■ Indian Reservations BIA

--- Power transmission lines

— Oil & Gas pipelines from USGS

▨ 100-year flood zone

▨ 500-year flood zone

■ National Wetland Inventory

■ State Wetlands

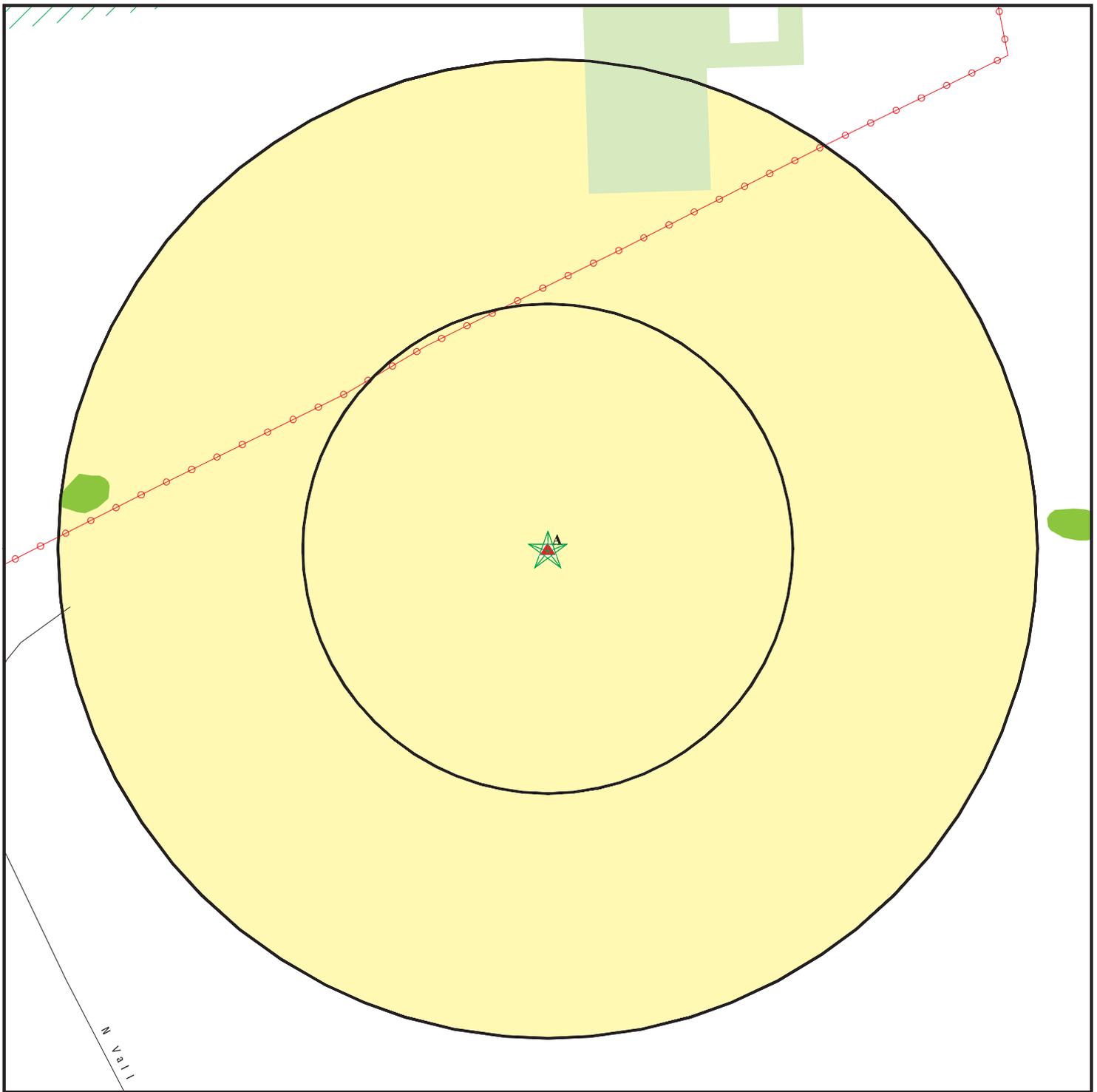


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Greene County - Lewis A. Jackson Airport  
 ADDRESS: 140 N. Valley Road  
 Xenia OH 45385  
 LAT/LONG: 39.6915 / 83.9918

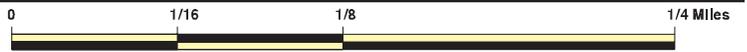
CLIENT: Stantec  
 CONTACT: Caroline Ammerman  
 INQUIRY #: 3827918.2s  
 DATE: January 10, 2014 2:31 pm

# DETAIL MAP - 3827918.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- ▨ 100-year flood zone
- ▨ 500-year flood zone
- National Wetland Inventory
- State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Greene County - Lewis A. Jackson Airport  
 ADDRESS: 140 N. Valley Road  
 Xenia OH 45385  
 LAT/LONG: 39.6915 / 83.9918

CLIENT: Stantec  
 CONTACT: Caroline Ammerman  
 INQUIRY #: 3827918.2s  
 DATE: January 10, 2014 2:32 pm

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.500		0	0	0	0	0	0
Proposed NPL	1.500		0	0	0	0	0	0
NPL LIENS	0.500		0	0	0	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.500		0	0	0	0	0	0
<b><i>Federal CERCLIS list</i></b>								
CERCLIS	1.000		0	0	0	0	NR	0
FEDERAL FACILITY	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERC-NFRAP	1.000		0	0	1	0	NR	1
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.500		0	0	0	0	0	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.750		0	0	0	0	NR	0
RCRA-SQG	0.750		0	0	0	0	NR	0
RCRA-CESQG	0.750		0	0	1	0	NR	1
<b><i>Federal institutional controls / engineering controls registries</i></b>								
US ENG CONTROLS	1.000		0	0	0	0	NR	0
US INST CONTROL	1.000		0	0	0	0	NR	0
LUCIS	1.000		0	0	0	0	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	0.500		0	0	0	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
OH SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
OH DERR	1.500		0	0	1	1	0	2
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
OH SWF/LF	1.000		0	0	0	0	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
OH LUST	1.000		0	0	1	0	NR	1
OH UNREG LTANKS	1.000		0	0	0	0	NR	0
INDIAN LUST	1.000		0	0	0	0	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b><i>State and tribal registered storage tank lists</i></b>								
OH UST	0.750		0	0	1	0	NR	1
INDIAN UST	0.750		0	0	0	0	NR	0
FEMA UST	0.750		0	0	0	0	NR	0
<b><i>State and tribal institutional control / engineering control registries</i></b>								
OH ENG CONTROLS	1.000		0	0	0	0	NR	0
OH INST CONTROL	1.000		0	0	0	0	NR	0
OH HIST ENG CONTROLS	1.000		0	0	0	0	NR	0
OH HIST INST CONTROLS	1.000		0	0	0	0	NR	0
<b><i>State and tribal voluntary cleanup sites</i></b>								
OH VCP	1.000		0	0	0	0	NR	0
INDIAN VCP	1.000		0	0	0	0	NR	0
<b><i>State and tribal Brownfields sites</i></b>								
OH BROWNFIELDS	1.000		0	0	0	0	NR	0
<b><u>ADDITIONAL ENVIRONMENTAL RECORDS</u></b>								
<b><i>Local Brownfield lists</i></b>								
US BROWNFIELDS	1.000		0	0	0	0	NR	0
<b><i>Local Lists of Landfill / Solid Waste Disposal Sites</i></b>								
DEBRIS REGION 9	1.000		0	0	0	0	NR	0
ODI	1.000		0	0	0	0	NR	0
OH HIST LF	1.000		0	0	0	0	NR	0
OH SWRCY	1.000		0	0	0	0	NR	0
INDIAN ODI	1.000		0	0	0	0	NR	0
<b><i>Local Lists of Hazardous waste / Contaminated Sites</i></b>								
US CDL	0.500		0	0	0	NR	NR	0
OH CDL	0.500		0	0	0	NR	NR	0
US HIST CDL	0.500		0	0	0	NR	NR	0
<b><i>Local Lists of Registered Storage Tanks</i></b>								
OH ARCHIVE UST	0.750		0	0	1	0	NR	1
<b><i>Local Land Records</i></b>								
LIENS 2	0.500		0	0	0	NR	NR	0
<b><i>Records of Emergency Release Reports</i></b>								
HMIRS	0.500		0	0	0	NR	NR	0
OH SPILLS	0.500		0	0	0	NR	NR	0
OH SPILLS 90	0.500		0	0	0	NR	NR	0
OH SPILLS 80	0.500		0	0	0	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.750		0	0	0	0	NR	0
DOT OPS	0.500		0	0	0	NR	NR	0
DOD	1.500		0	0	0	0	0	0
FUDS	1.500		0	0	0	0	0	0
CONSENT	1.500		0	0	0	0	0	0
ROD	1.500		0	0	0	0	0	0
UMTRA	1.000		0	0	0	0	NR	0
US MINES	0.750		0	0	0	0	NR	0
TRIS	0.500		0	0	0	NR	NR	0
TSCA	0.500		0	0	0	NR	NR	0
FTTS	0.500		0	0	0	NR	NR	0
HIST FTTS	0.500		0	0	0	NR	NR	0
SSTS	0.500		0	0	0	NR	NR	0
ICIS	0.500		0	0	0	NR	NR	0
PADS	0.500		0	0	0	NR	NR	0
MLTS	0.500		0	0	1	NR	NR	1
RADINFO	0.500		0	0	0	NR	NR	0
FINDS	0.500	1	0	0	1	NR	NR	2
RAATS	0.500		0	0	0	NR	NR	0
RMP	0.500		0	0	0	NR	NR	0
OH TOWNGAS	1.500		0	0	0	0	0	0
OH UIC	0.500	1	0	0	1	NR	NR	2
NY MANIFEST	0.250		0	0	NR	NR	NR	0
OH DRYCLEANERS	0.750		0	0	0	0	NR	0
OH NPDES	0.500	1	0	0	1	NR	NR	2
OH AIRS	0.500		0	0	0	NR	NR	0
OH USD	1.000		0	0	0	0	NR	0
OH HIST USD	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.500		0	0	0	0	0	0
SCRD DRYCLEANERS	1.000		0	0	0	0	NR	0
OH Financial Assurance	0.500		0	0	0	NR	NR	0
OH COAL ASH	1.000		0	0	0	0	NR	0
OH CRO	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.500		0	0	0	NR	NR	0
2020 COR ACTION	0.750		0	0	0	0	NR	0
COAL ASH EPA	1.000		0	0	0	0	NR	0
PRP	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	0.500		0	0	0	NR	NR	0
COAL ASH DOE	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.500		0	0	0	NR	NR	0
US AIRS	0.500		0	0	1	NR	NR	1
US FIN ASSUR	0.500		0	0	0	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### **EDR Exclusive Records**

EDR MGP	1.500		0	0	0	0	0	0
EDR US Hist Auto Stat	0.750		0	0	0	0	NR	0

## MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>&lt; 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>&gt; 1</u>	<u>Total Plotted</u>
EDR US Hist Cleaners	0.750		0	0	1	0	NR	1
<b><u>EDR RECOVERED GOVERNMENT ARCHIVES</u></b>								
<b><i>Exclusive Recovered Govt. Archives</i></b>								
OH RGA LUST	1.000	1	0	0	2	0	NR	3

**NOTES:**

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Site

Database(s)

EDR ID Number  
EPA ID Number

**A1**      **LEWIS A JACKSON REGIONAL AIRPORT**  
**Target**    **140 N VALLEY RD**  
**Property**   **XENIA, OH 45385**

**OH NPDES**    **S110637699**  
**N/A**

**Site 1 of 4 in cluster A**

**Actual:**  
**929 ft.**

OH NPDES:  
 Issue Date:            08/18/2010  
 Township:              Not reported  
 Facility Npdes Permit: 1GC03718\*AG  
 Applicant Name:        PHILLIPS COMPANIES  
 Applicant Address:     620 PHILLIPS DR BEAVERCREEK; OH 45434

Issue Date:            08/12/2011  
 Township:              Not reported  
 Facility Npdes Permit: 1GC04060\*AG  
 Applicant Name:        PHILLIPS COMPANIES  
 Applicant Address:     620 PHILLIPS DR BEAVERCREEK; OH 45434

**A2**      **GREENE COUNTY REGIONAL AIRPORT**  
**Target**    **140 NORTH VALLEY ROAD**  
**Property**   **XENIA, OH 45385**

**OH UIC**      **S109499871**  
**N/A**

**Site 2 of 4 in cluster A**

**Actual:**  
**929 ft.**

UIC:  
 Facility Status:            Active  
 UIC Number:              Not reported  
 Type Of UIC Well:        Large Capacity Sanitary System  
 Well Status:              Not reported  
 AUT Status:                Rule Authorized Permit  
 Latitude:                  Not reported  
 Longitude:                 Not reported  
 Number Of UIC Wells:    Not reported  
 Well Site:                 Class V  
 Type Description:         Not reported

**A3**      **GREENE CO REG AIRPORT AUTH**  
**Target**    **140 N VALLEY RD**  
**Property**   **XENIA, OH**

**FINDS**      **1007652570**  
**N/A**

**Site 3 of 4 in cluster A**

**Actual:**  
**929 ft.**

FINDS:  
 Registry ID:                110006319215

Environmental Interest/Information System

The OH-CORE (Ohio - Core) database contains information commonly shared among the Ohio EPA environmental programs. The information is facility-based, general in nature, and used to support specific programmatic systems while simultaneously maintaining an inventory of common facility-related data. Specific programmatic details are maintained in programmatic databases.

MAP FINDINGS

Map ID			EDR ID Number
Direction			EPA ID Number
Distance			
Elevation	Site	Database(s)	

---

<b>A4</b>		<b>OH RGA LUST</b>	<b>S114133049</b>
<b>Target</b>	<b>140 N VALLEY RD</b>		<b>N/A</b>
<b>Property</b>	<b>XENIA, OH</b>		

**Site 4 of 4 in cluster A**

<b>Actual:</b>	RGA LUST:				
<b>929 ft.</b>		1999	GREENE CO AIRPORT	140 N VALLEY RD	
		1998	GREENE CO AIRPORT	140 N VALLEY RD	

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<b>5</b>	<b>LEWIS A JACKSON AIRPORT, GREENE CO AIRPORT</b>	<b>OH NPDES</b>	<b>S110637697</b>
<b>WSW</b>	<b>104 N VALLEY RD</b>		<b>N/A</b>
<b>1/4-1/2</b>	<b>XENIA, OH 45385</b>		
<b>0.316 mi.</b>			
<b>1667 ft.</b>			

<b>Relative:</b>	OH NPDES:				
<b>Lower</b>	Issue Date:	08/18/2010			
	Township:	Not reported			
<b>Actual:</b>	Facility Npdes Permit:	1GC03716*AG			
<b>908 ft.</b>	Applicant Name:	ICONSTRUCT LLC			
	Applicant Address:	PO BOX 355 ENON; OH 45323			

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<b>6</b>	<b>BOSTON BARGAIN STORE</b>	<b>EDR US Hist Cleaners</b>	<b>1009145348</b>
<b>WSW</b>	<b>132 N VALLEY RD</b>		<b>N/A</b>
<b>1/4-1/2</b>	<b>DAYTON, OH</b>		
<b>0.326 mi.</b>			
<b>1722 ft.</b>			

<b>Relative:</b>	EDR Historical Cleaners:				
<b>Lower</b>	Name:	BOSTON BARGAIN STORE			
	Year:	1922			
<b>Actual:</b>	Type:	DRY CLEANER AND DYER PRESSING AND			
<b>891 ft.</b>					

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<b>B7</b>	<b>PHILLIPS SAND &amp; GRAVEL CO.</b>	<b>US AIRS</b>	<b>1014905054</b>
<b>ESE</b>	<b>30 HAINES RD.</b>		<b>N/A</b>
<b>1/4-1/2</b>	<b>ALPHA, OH 45301</b>		
<b>0.420 mi.</b>			
<b>2220 ft.</b>	<b>Site 1 of 3 in cluster B</b>		

<b>Relative:</b>	AIRS (AFS):				
<b>Higher</b>					
<b>Actual:</b>	Airs Minor Details:				
<b>931 ft.</b>	EPA plant ID:	110008629948			
	Plant name:	PHILLIPS SAND & GRAVEL CO.			
	Plant address:	30 HAINES RD.			
		ALPHA, OH 45301			
	County:	GREENE			
	Region code:	05			
	Dunn & Bradst #:	Not reported			
	Air quality cntrl region:	173			
	Sic code:	Not reported			
	Sic code desc:	Not reported			
	North Am. industrial classf:	212321			
	NAIC code description:	Construction Sand and Gravel Mining			

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PHILLIPS SAND & GRAVEL CO. (Continued)**

**1014905054**

Default compliance status: IN COMPLIANCE - INSPECTION  
Default classification: POTENTIAL UNCONTROLLED EMISSIONS < 100 TONS/YEAR  
Govt facility: ALL OTHER FACILITIES NOT OWNED OR OPERATED BY A FEDERAL, STATE, OR LOCAL GOVERNMENT  
Current HPV: Not reported

Compliance and Enforcement Major Issues:

Air program: Not reported  
National action type: Not reported  
Date achieved: Not reported  
Penalty amount: Not reported

Air program: Not reported  
National action type: Not reported  
Date achieved: Not reported  
Penalty amount: Not reported

Air program: Not reported  
National action type: Not reported  
Date achieved: Not reported  
Penalty amount: Not reported

Historical Compliance Minor Sources:

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1201  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1202  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1104  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1104  
Air prog code hist file: NSPS

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1201  
Air prog code hist file: NSPS

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1202  
Air prog code hist file: NSPS

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1203  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1203  
Air prog code hist file: NSPS

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PHILLIPS SAND & GRAVEL CO. (Continued)**

**1014905054**

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1204  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1204  
Air prog code hist file: NSPS

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1301  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1301  
Air prog code hist file: NSPS

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1302  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1302  
Air prog code hist file: NSPS

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1303  
Air prog code hist file: SIP SOURCE

State compliance status: IN COMPLIANCE - INSPECTION  
Hist compliance date: 1303  
Air prog code hist file: NSPS

Compliance & Violation Data by Minor Sources:

Air program code: NSPS  
Plant air program pollutant: TOTAL PARTICULATE MATTER  
Default pollutant classification: POTENTIAL UNCONTROLLED EMISSIONS < 100 TONS/YEAR  
Def. poll. compliance status: IN COMPLIANCE - INSPECTION  
Def. attainment/non atnmnt: ATTAINMENT AREA FOR GIVEN POLLUTANT  
Repeat violator date: Not reported  
Turnover compliance: Not reported

Air program code: SIP SOURCE  
Plant air program pollutant: Not reported  
Default pollutant classification: POTENTIAL UNCONTROLLED EMISSIONS < 100 TONS/YEAR  
Def. poll. compliance status: IN COMPLIANCE - INSPECTION  
Def. attainment/non atnmnt: ATTAINMENT AREA FOR GIVEN POLLUTANT  
Repeat violator date: Not reported  
Turnover compliance: Not reported

MAP FINDINGS

Map ID			EDR ID Number
Direction			EPA ID Number
Distance			
Elevation	Site	Database(s)	

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<b>C8</b> <b>WNW</b> <b>1/4-1/2</b> <b>0.421 mi.</b> <b>2221 ft.</b>	<b>HEMECROFT INC</b> <b>245 NORTH VALLEY ROAD</b> <b>XENIA, OH</b>  <b>Site 1 of 4 in cluster C</b>	<b>FINDS</b>	<b>1016133187</b> <b>N/A</b>
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**Relative:** FINDS:  
**Lower** Registry ID: 110004608032

**Actual:** Environmental Interest/Information System  
**814 ft.** RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

The OH-CORE (Ohio - Core) database contains information commonly shared among the Ohio EPA environmental programs. The information is facility-based, general in nature, and used to support specific programmatic systems while simultaneously maintaining an inventory of common facility-related data. Specific programmatic details are maintained in programmatic databases.

<b>C9</b> <b>WNW</b> <b>1/4-1/2</b> <b>0.421 mi.</b> <b>2221 ft.</b>	<b>SYSTECH CORP.</b> <b>245 NORTH VALLEY ROAD</b> <b>XENIA, OH 45385</b>  <b>Site 2 of 4 in cluster C</b>	<b>MLTS</b>	<b>1006333023</b> <b>N/A</b>
--	---	-------------	---------------------------------

**Relative:** MLTS:  
**Lower** License Number: 34-18925-01  
 First License Date: Not reported  
 License Date: 08/06/85  
 Lic. Expiration Date: 08/31/90  
 Contact Name: SHAWN E MCMULLEN  
 Contact Phone: 513-372-8077  
 Institution Code: 18925  
 Department/Bldg: Not reported  
 States Allowing Use: Not reported  
 Store Material Use: No  
 Redistribution Use: No  
 Incinerate Use: No  
 Burial Use: No  
 Last Inspection Date: 10/01/90  
 Next Inspection Date: Not reported  
 Licensee Contact: REG.OPER.MGR  
 Inspector Name: Not reported

MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Site

Database(s)

EDR ID Number  
EPA ID Number

**C10**  
**WNW**  
**1/4-1/2**  
**0.421 mi.**  
**2221 ft.**

**SYSTECH CORP**  
**245 NORTH VALLEY DR**  
**XENIA, OH 45385**

**Site 3 of 4 in cluster C**

**OH UIC**    **S109503391**  
**N/A**

**Relative:**  
**Lower**

**UIC:**  
Facility Status:                    Active  
UIC Number:                        Not reported  
Type Of UIC Well:                Large Capacity Sanitary System  
Well Status:                        Not reported  
AUT Status:                         Rule Authorized Permit  
Latitude:                            Not reported  
Longitude:                         Not reported  
Number Of UIC Wells:            Not reported  
Well Site:                          Class V  
Type Description:                 Not reported

**Actual:**  
**814 ft.**

**C11**  
**WNW**  
**1/4-1/2**  
**0.421 mi.**  
**2221 ft.**

**SYSTEMS TECHNOLOGY SYSTECH**  
**245 N VALLEY RD**  
**XENIA, OH 45385**

**Site 4 of 4 in cluster C**

**CERC-NFRAP**    **1000398082**  
**RCRA-CESQG**   **OHD030939219**  
**OH DERR**  
**NY MANIFEST**

**Relative:**  
**Lower**

**CERC-NFRAP:**  
Site ID:                                0504317  
Federal Facility:                    Not a Federal Facility  
**NPL Status:**                        Not on the NPL  
**Non NPL Status:**                 NFRAP-Site does not qualify for the NPL based on existing information

**Actual:**  
**814 ft.**

**CERCLIS-NFRAP Assessment History:**

Action:                                DISCOVERY  
Date Started:                        / /  
Date Completed:                    04/01/79  
Priority Level:                        Not reported

Action:                                ARCHIVE SITE  
Date Started:                        / /  
Date Completed:                    06/30/87  
Priority Level:                        Not reported

Action:                                PRELIMINARY ASSESSMENT  
Date Started:                        / /  
Date Completed:                    06/30/87  
Priority Level:                        NFRAP-Site does not qualify for the NPL based on existing information

**RCRA-CESQG:**

Date form received by agency: 05/21/1997  
Facility name:                        SYSTECH ENVIRONMENTAL CORP  
Facility address:                    245 N VALLEY RD  
    XENIA, OH 45385  
  
EPA ID:                                 OHD030939219  
Contact:                                BRUCE PEDERSEN  
Contact address:                    245 N VALLEY RD  
    XENIA, OH 45385  
  
Contact country:                    US  
Contact telephone:                (937) 372-8077  
Contact email:                        Not reported  
EPA Region:                          05

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SYSTEMS TECHNOLOGY SYSTECH (Continued)**

**1000398082**

Land type: Private  
Classification: Conditionally Exempt Small Quantity Generator  
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name: SYSTECH CORP STC ASSOCIATES  
Owner/operator address: 1508 HAVEN HILL RD  
DAYTON, OH 45459  
Owner/operator country: Not reported  
Owner/operator telephone: (513) 434-6200  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: NAME NOT REPORTED  
Owner/operator address: ADDRESS NOT REPORTED  
CITY NOT REPORTED, AK 99998  
Owner/operator country: Not reported  
Owner/operator telephone: (312) 555-1212  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SYSTEMS TECHNOLOGY SYSTECH (Continued)**

**1000398082**

Hazardous Waste Summary:

Waste code: D001  
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKEY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002  
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: F002  
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003  
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F005  
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Facility Has Received Notices of Violations:

Regulation violated: SR - 3745-52-34(D)(5)  
Area of violation: Generators - Pre-transport  
Date violation determined: 01/19/1993  
Date achieved compliance: 05/27/1993

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SYSTEMS TECHNOLOGY SYSTECH (Continued)**

**1000398082**

Violation lead agency: State  
Enforcement action: WRITTEN INFORMAL  
Enforcement action date: 02/08/1993  
Enf. disposition status: Not reported  
Enf. disp. status date: Not reported  
Enforcement lead agency: State  
Proposed penalty amount: Not reported  
Final penalty amount: Not reported  
Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 11/30/1995  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Not reported  
Date achieved compliance: Not reported  
Evaluation lead agency: State

Evaluation date: 01/19/1993  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Generators - Pre-transport  
Date achieved compliance: 05/27/1993  
Evaluation lead agency: State

DERR:

DERR ID: 529000791  
District: SWDO  
Alias: Not reported  
Lat/Long: 39.6944 -83.9993  
EPA ID: OHD030939219  
**Program: Site Assessment**

NY MANIFEST:

EPA ID: OHD030939219  
Country: USA  
Mailing Name: SYSTECH ENVIRONMENTAL  
Mailing Contact: B A PEDERSON  
Mailing Address: 245 N VALLEY RD  
Mailing Address 2: Not reported  
Mailing City: XENIA  
Mailing State: OH  
Mailing Zip: 45385  
Mailing Zip4: Not reported  
Mailing Country: USA  
Mailing Phone: 513-372-8077

Document ID: NYB5592483  
Manifest Status: Completed copy  
Trans1 State ID: 91374STIL  
Trans2 State ID: Not reported  
Generator Ship Date: 921207  
Trans1 Recv Date: 921207  
Trans2 Recv Date: Not reported  
TSD Site Recv Date: 921208  
Part A Recv Date: 921222  
Part B Recv Date: 921217  
Generator EPA ID: OHD030939219

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SYSTEMS TECHNOLOGY SYSTECH (Continued)**

**1000398082**

Trans1 EPA ID: ILD099202681  
Trans2 EPA ID: Not reported  
TSDF ID: NYD049836679  
Waste Code: D002 - NON-LISTED CORROSIVE WASTES  
Quantity: 00110  
Units: G - Gallons (liquids only)\* (8.3 pounds)  
Number of Containers: 002  
Container Type: DF - Fiberboard or plastic drums (glass)  
Handling Method: T Chemical, physical, or biological treatment.  
Specific Gravity: 100  
Year: 92

Document ID: NYB4490874  
Manifest Status: Completed after the designated time period for a TSDF to get a copy to the DEC  
Trans1 State ID: 91374STIL  
Trans2 State ID: Not reported  
Generator Ship Date: 930706  
Trans1 Recv Date: 930706  
Trans2 Recv Date: Not reported  
TSD Site Recv Date: 930716  
Part A Recv Date: 930713  
Part B Recv Date: 930804  
Generator EPA ID: OHD030939219  
Trans1 EPA ID: ILD099202681  
Trans2 EPA ID: Not reported  
TSDF ID: NYD049836679  
Waste Code: D002 - NON-LISTED CORROSIVE WASTES  
Quantity: 00110  
Units: G - Gallons (liquids only)\* (8.3 pounds)  
Number of Containers: 002  
Container Type: DM - Metal drums, barrels  
Handling Method: T Chemical, physical, or biological treatment.  
Specific Gravity: 100  
Year: 93

**B12**  
**ESE**  
**1/4-1/2**  
**0.434 mi.**  
**2294 ft.**

**PHILLIPS SAND & GRAVEL**  
**30 HAINES RD**  
**XENIA, OH 45385**

**OH LUST** **U004205914**  
**OH UST** **N/A**

**Site 2 of 3 in cluster B**

**Relative:**  
**Higher**

**LUST:**  
Release Number: 29006982-N00001  
Release Date: 02/22/1993  
**Facility Status: Inactive**  
LTF Status: 6 Closure of regulated UST  
**FR Status: NFA: No Further Action**  
Priority: 3  
Review Date: 11/03/2004  
Class: Viable Responsible Party has been identified

**Actual:**  
**933 ft.**

**UST:**  
Facility Id: 29006982  
Facility Type: Commercial  
Owner Name: Not reported  
Owner Address: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**PHILLIPS SAND & GRAVEL (Continued)**

**U004205914**

Owner City/State/Zip: Not reported  
Tank Number: T00001  
Status: REM - Removed  
UST Capacity: 10000  
Tank Content: Diesel  
Installation Date: 02/01/1973  
Construction: CCPS - Coated/Cathodically Protected Steel

Tank Number: T00002  
Status: REM - Removed  
UST Capacity: 10000  
Tank Content: Gasoline  
Installation Date: 02/01/1973  
Construction: CCPS - Coated/Cathodically Protected Steel

**B13  
ESE  
1/4-1/2  
0.434 mi.  
2294 ft.**

**30 HAINES RD  
XENIA, OH  
Site 3 of 3 in cluster B**

**OH ARCHIVE UST U004098820  
OH RGA LUST N/A**

**Relative:  
Higher**

ARCHIVE UST:  
Facility Number: 29006982

**Actual:  
933 ft.**

Permit:  
Facility Id: 29006982  
Permit Id: P00001  
Permit Status: Expired  
Issued Date: 1/28/1994  
Lfd Permit Id: Not reported

Inspection:  
Facility Id: 29006982  
Code: 103  
Permit Number: P00001  
Inspection Type: Final

**Tanks:**

Tank ID: T00001  
**Tank Status: Removed**  
Tank Type: Steel;Cathodically Protected Steel  
Capacity: 10000  
Content: Diesel  
CAS #: 68334-30-5  
Regulated: Yes  
Overfill Device Installed: No  
Spill Device Installed: No  
Installation Date: 2/1/1973  
Date Removed: 1/25/1993  
Date Last Used: 1/25/1993  
Date Abandoned/Closed: Not reported  
Corrosion Protection Tank: Not reported  
Release Detection on Tank: Manual Tank Gauging;Statistical Inventory Reconciliation  
Corrosion Protection Piping: Not reported  
Piping Material: Galvanized Steel;Cathodically Pr

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

(Continued)

U004098820

Piping Type: Pressure  
Release Detection on Piping: Not reported

Tank ID: T00002  
**Tank Status: Removed**  
Tank Type: Steel;Cathodically Protected Steel  
Capacity: 10000  
Content: Gasoline  
CAS #: 8006-61-9  
Regulated: Yes  
Overfill Device Installed: No  
Spill Device Installed: No  
Installation Date: 2/1/1973  
Date Removed: 1/25/1993  
Date Last Used: 1/25/1993  
Date Abandoned/Closed: Not reported  
Corrosion Protection Tank: Not reported  
Release Detection on Tank: Manual Tank Gauging;Statistical Inventory Reconciliation  
Corrosion Protection Piping: Not reported  
Piping Material: Galvanized Steel;Cathodically Pr  
Piping Type: Pressure  
Release Detection on Piping: Not reported

RGA LUST:

2012	PHILLIPS SAND & GRAVEL	30 HAINES RD
2011	PHILLIPS SAND & GRAVEL	30 HAINES RD
2010	PHILLIPS SAND & GRAVEL	30 HAINES RD
2009	PHILLIPS SAND & GRAVEL	30 HAINES RD
2008	PHILLIPS SAND & GRAVEL	30 HAINES RD
2007	PHILLIPS SAND & GRAVEL	30 HAINES RD
2006	PHILLIPS SAND & GRAVEL	30 HAINES RD
2005	PHILLIPS SAND & GRAVEL	30 HAINES RD
2004	PHILLIPS SAND & GRAVEL	30 HAINES RD
2003	PHILLIPS SAND & GRAVEL	30 HAINES RD
2002	PHILLIPS SAND & GRAVEL	30 HAINES RD
2001	PHILLIPS SAND & GRAVEL	30 HAINES RD
2000	PHILLIPS SAND & GRAVEL	30 HAINES RD

MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Site

Database(s)

EDR ID Number  
 EPA ID Number

**14**  
**SE**  
**1/4-1/2**  
**0.465 mi.**  
**2454 ft.**

**46 HAINES RD**  
**XENIA, OH**

**OH RGA LUST**

**S114138648**  
**N/A**

**Relative:**  
**Higher**

RGA LUST:

1999	PHILLIPS GRAVEL PLANT	46 HAINES RD
1998	PHILLIPS GRAVEL PLANT	46 HAINES RD
1997	PHILLIPS GRAVEL PLANT	46 HAINES RD
1996	PHILLIPS GRAVEL PLANT	46 HAINES RD
1995	PHILLIPS GRAVEL PLANT	46 HAINES RD
1994	PHILLIPS GRAVEL PLANT	46 HAINES RD

**Actual:**  
**934 ft.**

**15**  
**NNW**  
**1/2-1**  
**0.738 mi.**  
**3898 ft.**

**VALLEY ASPHALT CORP XENIA, VALLEY RD**  
**VALLEY RD**  
**XENIA, OH 45385**

**OH DERR**

**1000282830**  
**N/A**

**Relative:**  
**Lower**

DERR:

DERR ID: 529000877  
 District: SWDO  
 Alias: Not reported  
 Lat/Long: 39.6983 -83.9867  
 EPA ID: OHD980281794  
 Program: **Site Assessment**

**Actual:**  
**791 ft.**

Count: 20 records.

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BEAVERCREEK	1005417406	BEAVERCREEK WETLAND ASSOC	BEAVER VALLEY RD	45434	RCRA-SQG, FINDS
XENIA	S101562516	DONLEY OIL BULK PLANT	S DETROIT ST	45385	OH UNREG LTANKS, OH SPILLS
XENIA	S108588155	WGNZ RADIO TOWERS	MOON DR NE OF US 42 & 35	45385	OH NPDES
XENIA	S106288337	GREENE CO CONTRACTOR	N/A		OH SPILLS
XENIA	S106283366	GREEN COUNTY LANDMARK	N/A		OH SPILLS
XENIA	S106280787	GREENE LANDMARK	N/A		OH SPILLS
XENIA	1000325093	OHIO DEPT OF TRANSPORTATION	S OF US I35 AND US 42		RCRA-SQG, FINDS
XENIA	1000425887	COLUMBIA GAS TRANSMISSION CORP	OLD US RTE 35		RCRA NonGen / NLR, FINDS
XENIA	1012213284	XENIA WATER TREATMENT PLANT	1831 U.S. ROUTE 68 NORTH XE	45385	ICIS
XENIA	S107762446	WRIGHT CYCLE ESTATES SECTION 8	US RT 42 & ORVILLE WAY / BEASO	45385	OH NPDES
XENIA	1001080204	ODOT HIGHWAY BRIDGE	US RT 42 SEC 239		RCRA NonGen / NLR, FINDS
XENIA	S108588352	WRIGHT CYCLE ESTATES SECTIONS 9 10	US RTE 42 & BEASON RD	45385	OH NPDES
XENIA	S108588351	WRIGHT CYCLE ESTATES SECTION 14 (6	US RTE 42 & ORVILLE WAY / BEAS	45385	OH NPDES
XENIA	S108588350	WRIGHT CYCLE ESTATES SECTION 12	US RTE 42 & ORVILLEWAY / BEASO	45385	OH NPDES
XENIA	1015831321	VERIZON WIRELESS - WEST XENIA	590 US RTE 42		FINDS
XENIA	1000207640	GREENE CO SR 35 1184 PROJECT	ST RTE 35	45385	RCRA NonGen / NLR, FINDS
XENIA	1005868107	GREENE COUNTY GARAGE	RURAL RTE NO 1		FINDS
XENIA	1016080975	VALLEY ASPHALT CORP - PLANT #11 (0	482 TREBEIN RD.		FINDS, US AIRS
XENIA	1014823565	SKYDIVE GREENE COUNTY INC	UNKNOWN		FINDS
XENIA	1015735805	VALLEY ASPHALT CORP (SIA)	VALLEY RD	45385	CERC-NFRAP, RCRA NonGen / NLR

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/09/2013	Telephone: N/A
Date Made Active in Reports: 07/10/2013	Last EDR Contact: 01/21/2014
Number of Days to Update: 62	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Quarterly

#### NPL Site Boundaries

##### Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/09/2013	Telephone: N/A
Date Made Active in Reports: 07/10/2013	Last EDR Contact: 01/09/2014
Number of Days to Update: 62	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Quarterly

#### NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal Delisted NPL site list***

### DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/09/2013	Telephone: N/A
Date Made Active in Reports: 07/10/2013	Last EDR Contact: 01/09/2014
Number of Days to Update: 62	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

### CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/29/2013	Telephone: 703-412-9810
Date Made Active in Reports: 08/09/2013	Last EDR Contact: 11/11/2013
Number of Days to Update: 72	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

### FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/31/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/08/2013	Telephone: 703-603-8704
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 10/11/2013
Number of Days to Update: 151	Next Scheduled EDR Contact: 01/20/2014
	Data Release Frequency: Varies

## ***Federal CERCLIS NFRAP site List***

### CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/29/2013	Telephone: 703-412-9810
Date Made Active in Reports: 08/09/2013	Last EDR Contact: 11/11/2013
Number of Days to Update: 72	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

## ***Federal RCRA CORRACTS facilities list***

### CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

## ***Federal RCRA non-CORRACTS TSD facilities list***

### **RCRA-TSDF: RCRA - Treatment, Storage and Disposal**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: 312-886-6186  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

## ***Federal RCRA generators list***

### **RCRA-LQG: RCRA - Large Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: 312-886-6186  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

### **RCRA-SQG: RCRA - Small Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: 312-886-6186  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

### **RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: 312-886-6186  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal institutional controls / engineering controls registries***

### **US ENG CONTROLS: Engineering Controls Sites List**

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/17/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/21/2013	Telephone: 703-603-0695
Date Made Active in Reports: 10/03/2013	Last EDR Contact: 12/09/2013
Number of Days to Update: 104	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Varies

### **US INST CONTROL: Sites with Institutional Controls**

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/17/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/21/2013	Telephone: 703-603-0695
Date Made Active in Reports: 10/03/2013	Last EDR Contact: 12/09/2013
Number of Days to Update: 104	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Varies

### **LUCIS: Land Use Control Information System**

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/20/2013	Source: Department of the Navy
Date Data Arrived at EDR: 08/23/2013	Telephone: 843-820-7326
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 11/18/2013
Number of Days to Update: 70	Next Scheduled EDR Contact: 03/03/2014
	Data Release Frequency: Varies

## ***Federal ERNS list***

### **ERNS: Emergency Response Notification System**

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/30/2013	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 10/01/2013	Telephone: 202-267-2180
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 12/30/2013
Number of Days to Update: 66	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Annually

## ***State- and tribal - equivalent CERCLIS***

### **SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.**

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A	Source: Ohio EPA
Date Data Arrived at EDR: N/A	Telephone: 614-644-2924
Date Made Active in Reports: N/A	Last EDR Contact: 11/08/2013
Number of Days to Update: N/A	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: N/A

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## DERR: Division of Emergency & Remedial Response's Database

The DERR listings contains sites from all of Ohio that are in the Division of Environmental Response and Revitalization (DERR) database, which is an index of sites for which our district offices maintain files. The database is NOT a record of contaminated sites or sites suspected of contamination. Not all sites in the database are contaminated, and a site's absence from the database does not imply that it is uncontaminated.

Date of Government Version: 08/14/2013	Source: Ohio EPA
Date Data Arrived at EDR: 08/16/2013	Telephone: 614-644-3538
Date Made Active in Reports: 09/23/2013	Last EDR Contact: 01/09/2014
Number of Days to Update: 38	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: Semi-Annually

## **State and tribal landfill and/or solid waste disposal site lists**

### SWF/LF: Licensed Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 10/29/2013	Source: Ohio Environmental Protection Agency
Date Data Arrived at EDR: 11/01/2013	Telephone: 614-644-2621
Date Made Active in Reports: 12/16/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 45	Next Scheduled EDR Contact: 01/27/2014
	Data Release Frequency: Annually

## **State and tribal leaking storage tank lists**

### LUST: Leaking Underground Storage Tank File

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 11/18/2013	Source: Department of Commerce
Date Data Arrived at EDR: 11/22/2013	Telephone: 614-752-8200
Date Made Active in Reports: 12/20/2013	Last EDR Contact: 11/22/2013
Number of Days to Update: 28	Next Scheduled EDR Contact: 03/03/2014
	Data Release Frequency: Quarterly

### UNREG LTANKS: Ohio Leaking UST File

A suspected or confirmed release of petroleum from a non-regulated UST.

Date of Government Version: 08/25/1999	Source: Department of Commerce
Date Data Arrived at EDR: 08/19/2003	Telephone: 614-752-7938
Date Made Active in Reports: 08/26/2003	Last EDR Contact: 08/01/2003
Number of Days to Update: 7	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012	Source: EPA Region 8
Date Data Arrived at EDR: 08/28/2012	Telephone: 303-312-6271
Date Made Active in Reports: 10/16/2012	Last EDR Contact: 10/28/2013
Number of Days to Update: 49	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Quarterly

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/06/2013  
Date Data Arrived at EDR: 11/07/2013  
Date Made Active in Reports: 12/06/2013  
Number of Days to Update: 29

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: Quarterly

**INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013  
Date Data Arrived at EDR: 03/01/2013  
Date Made Active in Reports: 04/12/2013  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: Quarterly

**INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land**  
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 08/20/2013  
Date Data Arrived at EDR: 08/23/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 70

Source: EPA, Region 5  
Telephone: 312-886-7439  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: Varies

**INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land**  
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013  
Date Data Arrived at EDR: 05/01/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 184

Source: EPA Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 11/01/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: Varies

**INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/01/2013  
Date Data Arrived at EDR: 08/02/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 91

Source: EPA Region 4  
Telephone: 404-562-8677  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: Semi-Annually

**INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011  
Date Data Arrived at EDR: 09/13/2011  
Date Made Active in Reports: 11/11/2011  
Number of Days to Update: 59

Source: EPA Region 6  
Telephone: 214-665-6597  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: Varies

**INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land**  
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 08/27/2013  
Date Data Arrived at EDR: 08/27/2013  
Date Made Active in Reports: 11/01/2013  
Number of Days to Update: 66

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: Varies

***State and tribal registered storage tank lists***

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## UST: Underground Storage Tank File

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 11/18/2013	Source: Department of Commerce
Date Data Arrived at EDR: 11/22/2013	Telephone: 614-752-8200
Date Made Active in Reports: 12/23/2013	Last EDR Contact: 11/22/2013
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/03/2014
	Data Release Frequency: Quarterly

## INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 09/28/2012	Source: EPA, Region 1
Date Data Arrived at EDR: 11/07/2012	Telephone: 617-918-1313
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 11/01/2014
Number of Days to Update: 156	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Varies

## INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/01/2013	Source: EPA Region 4
Date Data Arrived at EDR: 08/02/2013	Telephone: 404-562-9424
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 91	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Semi-Annually

## INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/20/2013	Source: EPA Region 5
Date Data Arrived at EDR: 08/23/2013	Telephone: 312-886-6136
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 70	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Varies

## INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011	Source: EPA Region 6
Date Data Arrived at EDR: 05/11/2011	Telephone: 214-665-7591
Date Made Active in Reports: 06/14/2011	Last EDR Contact: 10/28/2013
Number of Days to Update: 34	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Semi-Annually

## INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 12/31/2012	Source: EPA Region 7
Date Data Arrived at EDR: 02/28/2013	Telephone: 913-551-7003
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 43	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 07/29/2013	Source: EPA Region 8
Date Data Arrived at EDR: 08/01/2013	Telephone: 303-312-6137
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 92	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Quarterly

## INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 07/29/2013	Source: EPA Region 9
Date Data Arrived at EDR: 07/30/2013	Telephone: 415-972-3368
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 129	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Quarterly

## INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/05/2013	Source: EPA Region 10
Date Data Arrived at EDR: 02/06/2013	Telephone: 206-553-2857
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 10/28/2013
Number of Days to Update: 65	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Quarterly

## FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010	Source: FEMA
Date Data Arrived at EDR: 02/16/2010	Telephone: 202-646-5797
Date Made Active in Reports: 04/12/2010	Last EDR Contact: 10/17/2013
Number of Days to Update: 55	Next Scheduled EDR Contact: 01/27/2014
	Data Release Frequency: Varies

## ***State and tribal institutional control / engineering control registries***

### ENG CONTROLS: Sites with Engineering Controls

A database that tracks properties with engineering controls.

Date of Government Version: 08/14/2013	Source: Ohio EPA
Date Data Arrived at EDR: 08/16/2013	Telephone: 614-644-2306
Date Made Active in Reports: 09/23/2013	Last EDR Contact: 01/09/2014
Number of Days to Update: 38	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: Semi-Annually

### INST CONTROL: Sites with Institutional Engineering Controls

A database that tracks properties with institutional controls.

Date of Government Version: 08/14/2013	Source: Ohio Environmental Protection Agency
Date Data Arrived at EDR: 08/16/2013	Telephone: 614-644-2306
Date Made Active in Reports: 09/23/2013	Last EDR Contact: 01/09/2014
Number of Days to Update: 38	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## HIST INST CONTROLS: Institutional Controls Database

"Institutional control" is a restriction that is recorded in the same manner as a deed which limits access to or use of the property such that exposure to hazardous substances or petroleum are effectively and reliably eliminated or mitigated. Examples of institutional controls include land and water use restrictions. This database is no longer updated or maintained by the state agency.

Date of Government Version: 05/10/2005	Source: Ohio EPA
Date Data Arrived at EDR: 04/06/2006	Telephone: 614-644-2306
Date Made Active in Reports: 05/04/2006	Last EDR Contact: 06/02/2008
Number of Days to Update: 28	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## HIST ENG CONTROLS: Operation & Maintenance Agreements Database

Volunteers that complete a voluntary action that relies on the ongoing operation and maintenance (O&M) of an engineered control to make the site protective (e.g" cap systems and ground water treatment systems) must enter into a legally binding agreement with the Ohio EPA before the director issues a covenant not to sue. This O&M Agreement must describe how the remedy is constructed and how it will be monitored, maintained and repaired. It also lays out inspection opportunities for the agency. Companies must document that they have the financial capability to operate any remedy relied on, before the agency will agree to enter into the O&M Agreement. The statute requires that the agency be notified of any change in ownership. This database is no longer updated or maintained by the state agency.

Date of Government Version: 05/10/2005	Source: Ohio EPA
Date Data Arrived at EDR: 04/04/2006	Telephone: 614-644-2306
Date Made Active in Reports: 05/04/2006	Last EDR Contact: 06/02/2008
Number of Days to Update: 30	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## **State and tribal voluntary cleanup sites**

### VCP: Voluntary Action Program Sites

Site involved in the Voluntary Action Program.

Date of Government Version: 08/14/2013	Source: Ohio EPA, Voluntary Action Program
Date Data Arrived at EDR: 08/16/2013	Telephone: 614-728-1298
Date Made Active in Reports: 09/23/2013	Last EDR Contact: 01/09/2014
Number of Days to Update: 38	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: Semi-Annually

### INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/17/2013	Source: EPA, Region 1
Date Data Arrived at EDR: 10/01/2013	Telephone: 617-918-1102
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 01/03/2014
Number of Days to Update: 66	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Varies

### INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

## **State and tribal Brownfields sites**

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## BROWNFIELDS: Ohio Brownfield Inventory

A statewide brownfields inventory. A brownfield is an abandoned, idled or under-used industrial or commercial property where expansion or redevelopment is complicated by known or potential releases of hazardous substances and/or petroleum.

Date of Government Version: 09/17/2013  
Date Data Arrived at EDR: 09/18/2013  
Date Made Active in Reports: 11/05/2013  
Number of Days to Update: 48

Source: Ohio EPA  
Telephone: 614-644-3748  
Last EDR Contact: 12/18/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Varies

## ADDITIONAL ENVIRONMENTAL RECORDS

### **Local Brownfield lists**

#### US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/24/2013  
Date Data Arrived at EDR: 09/24/2013  
Date Made Active in Reports: 12/06/2013  
Number of Days to Update: 73

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 12/24/2013  
Next Scheduled EDR Contact: 04/07/2014  
Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

#### DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 02/11/2014  
Data Release Frequency: No Update Planned

#### ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### HIST LF: Old Solid Waste Landfill

A list of about 1200 old abandoned dumps or landfills. This database was developed from Ohio EPA staff notebooks and other information dating from the mid-1970s

Date of Government Version: 01/01/1980  
Date Data Arrived at EDR: 07/01/2003  
Date Made Active in Reports: 07/17/2003  
Number of Days to Update: 16

Source: Ohio EPA  
Telephone: 614-644-3749  
Last EDR Contact: 06/26/2003  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## SWRCY: Recycling Facility Listing

A listing of recycling facility locations.

Date of Government Version: 01/14/2013  
Date Data Arrived at EDR: 01/15/2013  
Date Made Active in Reports: 03/19/2013  
Number of Days to Update: 63

Source: Ohio EPA  
Telephone: 614-728-5357  
Last EDR Contact: 10/28/2013  
Next Scheduled EDR Contact: 01/27/2014  
Data Release Frequency: Varies

## INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 11/04/2013  
Next Scheduled EDR Contact: 02/17/2014  
Data Release Frequency: Varies

## **Local Lists of Hazardous waste / Contaminated Sites**

### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/06/2013  
Date Data Arrived at EDR: 09/11/2013  
Date Made Active in Reports: 10/03/2013  
Number of Days to Update: 22

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 12/05/2013  
Next Scheduled EDR Contact: 03/17/2014  
Data Release Frequency: Quarterly

### CDL: Clandestine Drug Lab Locations

A list of clandestine drug lab sites with environmental impact. This list is extracted from the SPILLS database based on the "product" type.

Date of Government Version: 11/13/2013  
Date Data Arrived at EDR: 11/15/2013  
Date Made Active in Reports: 12/17/2013  
Number of Days to Update: 32

Source: Ohio EPA  
Telephone: 614-644-2080  
Last EDR Contact: 11/11/2013  
Next Scheduled EDR Contact: 02/24/2014  
Data Release Frequency: Varies

### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007  
Date Data Arrived at EDR: 11/19/2008  
Date Made Active in Reports: 03/30/2009  
Number of Days to Update: 131

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 03/23/2009  
Next Scheduled EDR Contact: 06/22/2009  
Data Release Frequency: No Update Planned

## **Local Lists of Registered Storage Tanks**

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ARCHIVE UST: Archived Underground Storage Tank Sites

Underground storage tank records that have been removed from the Underground Storage Tank database.

Date of Government Version: 11/18/2013	Source: Department of Commerce, Division of State Fire Marshal
Date Data Arrived at EDR: 11/22/2013	Telephone: 614-752-7938
Date Made Active in Reports: 12/23/2013	Last EDR Contact: 11/22/2013
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/03/2014
	Data Release Frequency: Quarterly

## Local Land Records

### LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/06/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/25/2013	Telephone: 202-564-6023
Date Made Active in Reports: 05/10/2013	Last EDR Contact: 11/13/2013
Number of Days to Update: 15	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Varies

## Records of Emergency Release Reports

### HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/30/2013	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 10/01/2013	Telephone: 202-366-4555
Date Made Active in Reports: 12/16/2013	Last EDR Contact: 01/03/2014
Number of Days to Update: 76	Next Scheduled EDR Contact: 01/13/2014
	Data Release Frequency: Annually

### SPILLS: Emergency Response Database

Incidents reported to the Emergency Response Unit. The focus of the ER program is to minimize the impact on the environment from accidental releases, spills, and unauthorized discharges from any fixed or mobile sources. Incidents involving petroleum products, hazardous materials, hazardous waste, abandoned drums, or other materials which may pose as a pollution threat to the state's water, land, or air should be reported immediately. Not all incidents included in the database are actual SPILLS, they can simply be reported incidents.

Date of Government Version: 11/13/2013	Source: Ohio EPA
Date Data Arrived at EDR: 11/15/2013	Telephone: 614-644-2084
Date Made Active in Reports: 12/17/2013	Last EDR Contact: 11/11/2013
Number of Days to Update: 32	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: Varies

### SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 09/13/2012	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/27/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 55	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### SPILLS 80: SPILLS80 data from FirstSearch

Spills 80 includes those spill and release records available from FirstSearch databases prior to 1990. Typically, they may include chemical, oil and/or hazardous substance spills recorded before 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 80.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/24/2004  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 03/01/2013  
Number of Days to Update: 57

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## **Other Ascertainable Records**

### **RCRA NonGen / NLR: RCRA - Non Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/10/2013  
Date Data Arrived at EDR: 10/02/2013  
Date Made Active in Reports: 12/16/2013  
Number of Days to Update: 75

Source: Environmental Protection Agency  
Telephone: 312-886-6186  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Varies

### **DOT OPS: Incident and Accident Data**

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012  
Date Data Arrived at EDR: 08/07/2012  
Date Made Active in Reports: 09/18/2012  
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 11/06/2013  
Next Scheduled EDR Contact: 02/17/2014  
Data Release Frequency: Varies

### **DOD: Department of Defense Sites**

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 11/10/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 62

Source: USGS  
Telephone: 888-275-8747  
Last EDR Contact: 10/18/2013  
Next Scheduled EDR Contact: 01/27/2014  
Data Release Frequency: Semi-Annually

### **FUDS: Formerly Used Defense Sites**

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 02/26/2013  
Date Made Active in Reports: 03/13/2013  
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285  
Last EDR Contact: 12/13/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Varies

### **CONSENT: Superfund (CERCLA) Consent Decrees**

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2013  
Date Data Arrived at EDR: 08/07/2013  
Date Made Active in Reports: 10/03/2013  
Number of Days to Update: 57

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 12/26/2013  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 06/11/2013	Telephone: 703-416-0223
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 12/12/2013
Number of Days to Update: 143	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Annually

### UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010	Source: Department of Energy
Date Data Arrived at EDR: 10/07/2011	Telephone: 505-845-0011
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 11/26/2013
Number of Days to Update: 146	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Varies

### US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2013	Source: Department of Labor, Mine Safety and Health Administration
Date Data Arrived at EDR: 09/05/2013	Telephone: 303-231-5959
Date Made Active in Reports: 10/03/2013	Last EDR Contact: 12/06/2013
Number of Days to Update: 28	Next Scheduled EDR Contact: 03/17/2014
	Data Release Frequency: Semi-Annually

### TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011	Source: EPA
Date Data Arrived at EDR: 07/31/2013	Telephone: 202-566-0250
Date Made Active in Reports: 09/13/2013	Last EDR Contact: 11/27/2013
Number of Days to Update: 44	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Annually

### TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006	Source: EPA
Date Data Arrived at EDR: 09/29/2010	Telephone: 202-260-5521
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/26/2013
Number of Days to Update: 64	Next Scheduled EDR Contact: 04/07/2014
	Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act) FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 11/21/2013
Number of Days to Update: 25	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)**  
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 11/21/2014
Number of Days to Update: 25	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

**HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing**

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

**HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing**

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

**SSTS: Section 7 Tracking Systems**

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009	Source: EPA
Date Data Arrived at EDR: 12/10/2010	Telephone: 202-564-4203
Date Made Active in Reports: 02/25/2011	Last EDR Contact: 10/28/2013
Number of Days to Update: 77	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Annually

**ICIS: Integrated Compliance Information System**

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/10/2011	Telephone: 202-564-5088
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 10/09/2014
Number of Days to Update: 61	Next Scheduled EDR Contact: 01/27/2014
	Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013	Source: EPA
Date Data Arrived at EDR: 07/17/2013	Telephone: 202-566-0500
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 10/18/2013
Number of Days to Update: 107	Next Scheduled EDR Contact: 01/27/2014
	Data Release Frequency: Annually

## MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 08/02/2013	Telephone: 301-415-7169
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 12/09/2013
Number of Days to Update: 91	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Quarterly

## RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 09/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/09/2013	Telephone: 202-343-9775
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 10/09/2013
Number of Days to Update: 23	Next Scheduled EDR Contact: 01/20/2014
	Data Release Frequency: Quarterly

## FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/08/2013	Source: EPA
Date Data Arrived at EDR: 03/21/2013	Telephone: (312) 353-2000
Date Made Active in Reports: 07/10/2013	Last EDR Contact: 12/10/2013
Number of Days to Update: 111	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Quarterly

## RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## RMP: Risk Management Plans

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/25/2012	Telephone: 202-564-8600
Date Made Active in Reports: 07/10/2012	Last EDR Contact: 10/28/2013
Number of Days to Update: 46	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Varies

### BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011	Source: EPA/NTIS
Date Data Arrived at EDR: 02/26/2013	Telephone: 800-424-9346
Date Made Active in Reports: 04/19/2013	Last EDR Contact: 11/25/2013
Number of Days to Update: 52	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Biennially

### TOWNGAS: DERR Towngas Database

The database includes 82 very old sites (circa 1895) which produced gas from coal for street lighting. Most visual evidence of these sites has disappeared, however the potential for buried coal tar remains. The database is no longer in active use.

Date of Government Version: 07/28/1992	Source: Ohio EPA
Date Data Arrived at EDR: 02/21/2003	Telephone: 614-644-3749
Date Made Active in Reports: 03/05/2003	Last EDR Contact: 02/12/2003
Number of Days to Update: 12	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

### UIC: Underground Injection Wells Listing

A listing of underground injection well locations.

Date of Government Version: 10/09/2013	Source: Ohio EPA
Date Data Arrived at EDR: 11/15/2013	Telephone: 614-644-2752
Date Made Active in Reports: 12/18/2013	Last EDR Contact: 11/15/2013
Number of Days to Update: 33	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: Varies

### DRYCLEANERS: Drycleaner Facility Listing

A listing of drycleaner facility locations.

Date of Government Version: 10/10/2013	Source: Ohio EPA
Date Data Arrived at EDR: 10/16/2013	Telephone: 614-644-3469
Date Made Active in Reports: 11/05/2013	Last EDR Contact: 12/30/2013
Number of Days to Update: 20	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Varies

### NPDES: NPDES General Permit List

General information regarding NPDES (National Pollutant Discharge Elimination System) permits.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/11/2013  
Date Data Arrived at EDR: 11/15/2013  
Date Made Active in Reports: 12/26/2013  
Number of Days to Update: 41

Source: Ohio EPA  
Telephone: 614-644-2031  
Last EDR Contact: 11/15/2013  
Next Scheduled EDR Contact: 02/24/2014  
Data Release Frequency: Semi-Annually

## AIRS: Title V Permits Listing

A listing of Title V Permits issued by the Division of Air Pollution Control. It is a federal operating permit program adopted and implemented by the state. The basic program elements typically specify that major sources will submit an operating application to the specified state environmental regulatory agency according to a schedule.

Date of Government Version: 10/23/2013  
Date Data Arrived at EDR: 10/24/2013  
Date Made Active in Reports: 11/05/2013  
Number of Days to Update: 12

Source: Ohio EPA  
Telephone: 614-644-2270  
Last EDR Contact: 12/18/2013  
Next Scheduled EDR Contact: 04/07/2014  
Data Release Frequency: Varies

## USD: Urban Setting Designation Sites

A USD may be requested for properties participating in the VAP when there is no current or future use of the ground water by local residents for drinking, showering, bathing or cooking. In these areas, an approved USD would lower the cost of cleanup and promote economic redevelopment while still protecting public health and safety. If these USDs were to be approved, the ground water cleanup or response requirements for the areas could be lessened. The Ohio EPA director may approve a USD request based on a demonstration that the USD requirements are met and an evaluation of existing and future uses of ground water in the area. The Ohio EPA director's decision on approval or denial of the request is needed before cleanup requirements for the site can be determined.

Date of Government Version: 08/14/2013  
Date Data Arrived at EDR: 08/16/2013  
Date Made Active in Reports: 09/23/2013  
Number of Days to Update: 38

Source: Ohio EPA  
Telephone: 614-644-3749  
Last EDR Contact: 01/09/2014  
Next Scheduled EDR Contact: 02/24/2014  
Data Release Frequency: Varies

## HIST USD: Urban Setting Designations Database

A USD may be requested for properties participating in the VAP when there is no current or future use of the ground water by local residents for drinking, showering, bathing or cooking. In these areas, an approved USD would lower the cost of cleanup and promote economic redevelopment while still protecting public health and safety. If these USDs were to be approved, the ground water cleanup or response requirements for the areas could be lessened. The Ohio EPA director may approve a USD request based on a demonstration that the USD requirements are met and an evaluation of existing and future uses of ground water in the area. The Ohio EPA director's decision on approval or denial of the request is needed before cleanup requirements for the site can be determined. This database is no longer updated or maintained by the state agency.

Date of Government Version: 05/10/2005  
Date Data Arrived at EDR: 04/25/2006  
Date Made Active in Reports: 05/11/2006  
Number of Days to Update: 16

Source: Ohio EPA  
Telephone: 614-644-3749  
Last EDR Contact: 06/02/2008  
Next Scheduled EDR Contact: 09/01/2008  
Data Release Frequency: No Update Planned

## INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 12/08/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 34

Source: USGS  
Telephone: 202-208-3710  
Last EDR Contact: 10/18/2013  
Next Scheduled EDR Contact: 01/27/2014  
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2011	Telephone: 615-532-8599
Date Made Active in Reports: 05/02/2011	Last EDR Contact: 11/18/2013
Number of Days to Update: 54	Next Scheduled EDR Contact: 02/03/2014
	Data Release Frequency: Varies

## Financial Assurance: Financial Assurance Information Listing

Financial assurance information.

Date of Government Version: 10/11/2013	Source: Ohio EPA
Date Data Arrived at EDR: 10/16/2013	Telephone: 614-644-2955
Date Made Active in Reports: 11/05/2013	Last EDR Contact: 10/10/2013
Number of Days to Update: 20	Next Scheduled EDR Contact: 01/27/2014
	Data Release Frequency: Varies

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/29/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/14/2013	Telephone: 703-603-8787
Date Made Active in Reports: 02/27/2013	Last EDR Contact: 01/03/2014
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/21/2014
	Data Release Frequency: Varies

## LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust.

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

## 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/18/2012	Telephone: 703-308-4044
Date Made Active in Reports: 05/25/2012	Last EDR Contact: 11/15/2013
Number of Days to Update: 7	Next Scheduled EDR Contact: 02/24/2014
	Data Release Frequency: Varies

## FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 02/06/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 339

Source: U.S. Geological Survey  
Telephone: 888-275-8747  
Last EDR Contact: 10/18/2013  
Next Scheduled EDR Contact: 01/27/2014  
Data Release Frequency: N/A

## PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013  
Date Data Arrived at EDR: 07/03/2013  
Date Made Active in Reports: 09/13/2013  
Number of Days to Update: 72

Source: EPA  
Telephone: 202-564-6023  
Last EDR Contact: 01/02/2014  
Next Scheduled EDR Contact: 04/14/2014  
Data Release Frequency: Quarterly

## EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 06/30/2013  
Date Data Arrived at EDR: 08/13/2013  
Date Made Active in Reports: 09/13/2013  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: 617-520-3000  
Last EDR Contact: 11/15/2013  
Next Scheduled EDR Contact: 02/24/2014  
Data Release Frequency: Quarterly

## COAL ASH: Coal Ash Disposal Site Listing

A listing of coal ash disposal site locations.

Date of Government Version: 02/07/2012  
Date Data Arrived at EDR: 02/17/2012  
Date Made Active in Reports: 03/28/2012  
Number of Days to Update: 40

Source: Ohio EPA  
Telephone: 614-644-2134  
Last EDR Contact: 12/16/2013  
Next Scheduled EDR Contact: 01/27/2014  
Data Release Frequency: Varies

## CRO: Cessation of Regulated Operations Facility Listing

"Cessation of Regulated Operations" means the discontinuation or termination of regulated operations or the finalizing of any transaction or proceeding through which those operations are discontinued. "Regulated Operations" means the production, use, storage or handling of regulated substances.

Date of Government Version: 10/22/2013  
Date Data Arrived at EDR: 11/20/2013  
Date Made Active in Reports: 12/18/2013  
Number of Days to Update: 28

Source: Ohio EPA  
Telephone: 614-644-3065  
Last EDR Contact: 11/11/2013  
Next Scheduled EDR Contact: 02/24/2014  
Data Release Frequency: Varies

## COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 08/07/2009  
Date Made Active in Reports: 10/22/2009  
Number of Days to Update: 76

Source: Department of Energy  
Telephone: 202-586-8719  
Last EDR Contact: 12/10/2013  
Next Scheduled EDR Contact: 03/24/2014  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 10/28/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/29/2013	Telephone: 202-566-1917
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 11/18/2013
Number of Days to Update: 38	Next Scheduled EDR Contact: 03/03/2014
	Data Release Frequency: Quarterly

## COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/03/2011	Telephone: N/A
Date Made Active in Reports: 03/21/2011	Last EDR Contact: 12/13/2013
Number of Days to Update: 77	Next Scheduled EDR Contact: 03/24/2014
	Data Release Frequency: Varies

## US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/23/2013	Source: EPA
Date Data Arrived at EDR: 11/06/2013	Telephone: 202-564-5962
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 12/26/2013
Number of Days to Update: 30	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Annually

## US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/23/2013	Source: EPA
Date Data Arrived at EDR: 11/06/2013	Telephone: 202-564-5962
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 12/26/2013
Number of Days to Update: 30	Next Scheduled EDR Contact: 04/14/2014
	Data Release Frequency: Annually

## PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 11/01/2013
Number of Days to Update: 83	Next Scheduled EDR Contact: 02/11/2014
	Data Release Frequency: Varies

## **EDR HIGH RISK HISTORICAL RECORDS**

### ***EDR Exclusive Records***

#### EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: N/A  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: N/A  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## **EDR RECOVERED GOVERNMENT ARCHIVES**

### ***Exclusive Recovered Govt. Archives***

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 12/20/2013  
Number of Days to Update: 172

Source: EDR  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

### CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013  
Date Data Arrived at EDR: 08/19/2013  
Date Made Active in Reports: 10/03/2013  
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 11/22/2013  
Next Scheduled EDR Contact: 03/03/2014  
Data Release Frequency: Annually

### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 07/19/2012  
Date Made Active in Reports: 08/28/2012  
Number of Days to Update: 40

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 10/18/2013  
Next Scheduled EDR Contact: 01/27/2014  
Data Release Frequency: Annually

### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 11/01/2013  
Date Data Arrived at EDR: 11/07/2013  
Date Made Active in Reports: 11/18/2013  
Number of Days to Update: 11

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 11/07/2013  
Next Scheduled EDR Contact: 02/17/2014  
Data Release Frequency: Annually

### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 07/24/2013  
Date Made Active in Reports: 08/19/2013  
Number of Days to Update: 26

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 10/21/2013  
Next Scheduled EDR Contact: 02/03/2014  
Data Release Frequency: Annually

### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 06/21/2013  
Date Made Active in Reports: 08/05/2013  
Number of Days to Update: 45

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 11/25/2013  
Next Scheduled EDR Contact: 03/10/2014  
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## VT MANIFEST: Hazardous Waste Manifest Data Hazardous waste manifest information.

Date of Government Version: 11/12/2013  
Date Data Arrived at EDR: 11/20/2013  
Date Made Active in Reports: 12/11/2013  
Number of Days to Update: 21

Source: Department of Environmental Conservation  
Telephone: 802-241-3443  
Last EDR Contact: 10/21/2013  
Next Scheduled EDR Contact: 02/03/2014  
Data Release Frequency: Annually

## WI MANIFEST: Manifest Information Hazardous waste manifest information.

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 08/09/2013  
Date Made Active in Reports: 09/27/2013  
Number of Days to Update: 49

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 12/11/2013  
Next Scheduled EDR Contact: 03/31/2014  
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

## Electric Power Transmission Line Data

Source: Rextag Strategies Corp.  
Telephone: (281) 769-2247  
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

## AHA Hospitals:

Source: American Hospital Association, Inc.  
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

## Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services  
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

## Nursing Homes

Source: National Institutes of Health  
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

## Public Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

## Private Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

## Daycare Centers: Licensed Child Day Care Facilities

Source: Department of Job & Family Services  
Telephone: 614-466-6282

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory  
Source: Department of Natural Resources  
Telephone: 614-265-1044

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

### **STREET AND ADDRESS INFORMATION**

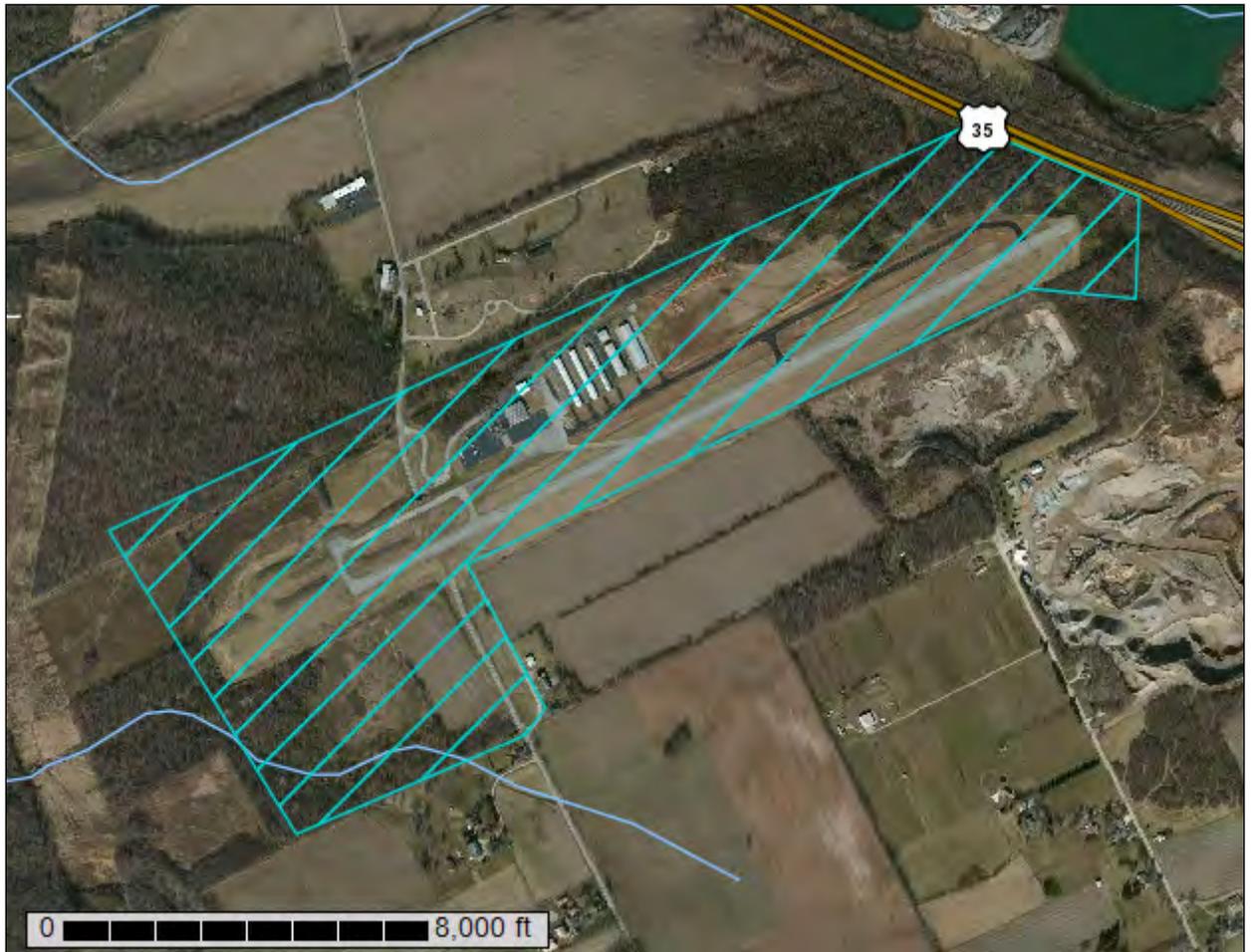
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A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Greene County, Ohio

## Greene County Airport



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://soils.usda.gov/sqi/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://soils.usda.gov/contact/state\\_offices/](http://soils.usda.gov/contact/state_offices/)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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# **How Soil Surveys Are Made**

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

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individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

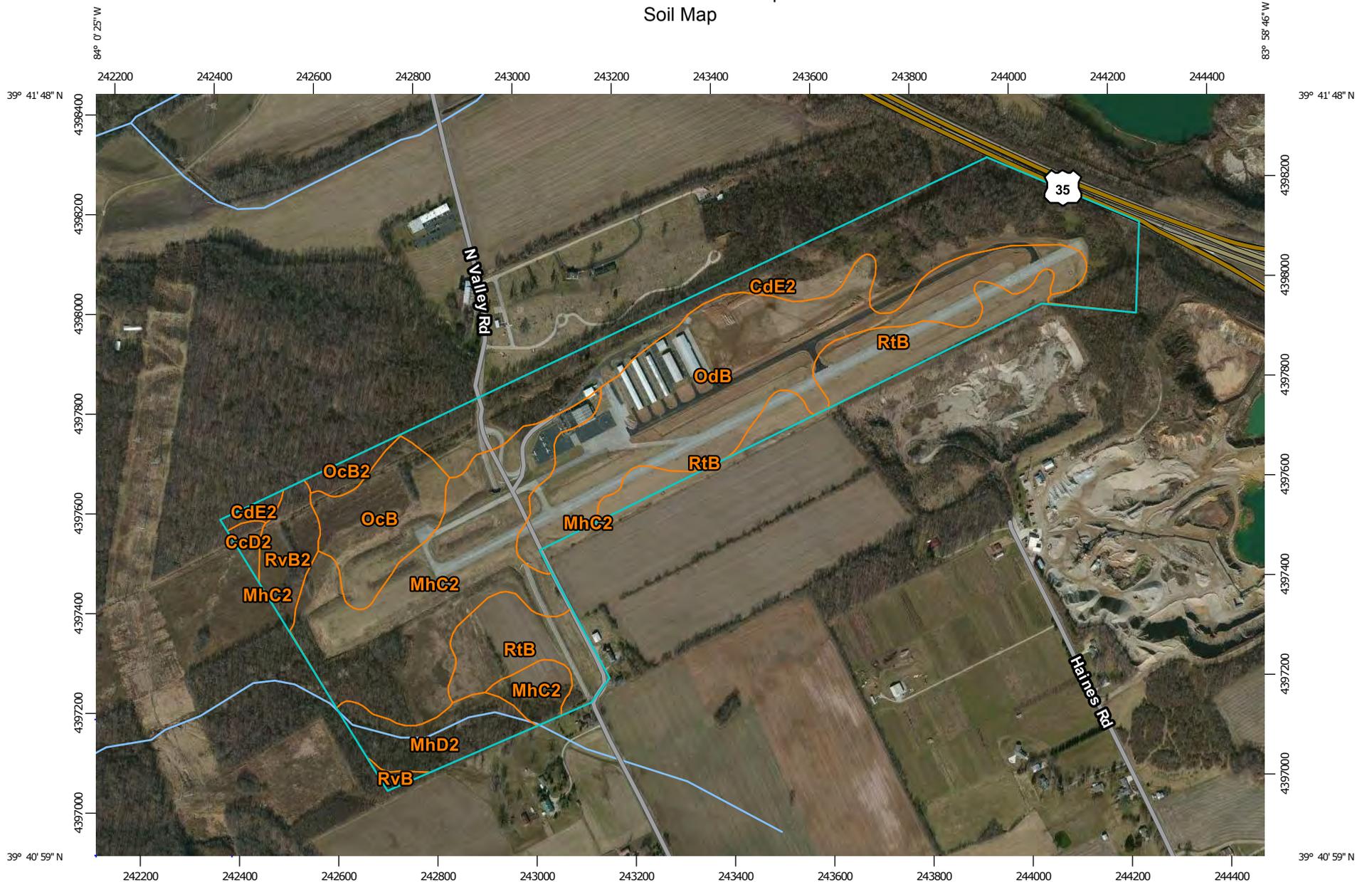
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

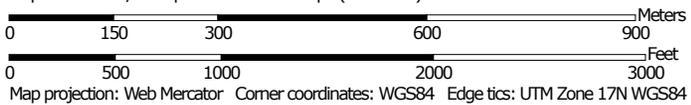
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Map Scale: 1:10,800 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio  
 Survey Area Data: Version 9, Jan 25, 2010

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CcD2	Casco-Eldean loams, 12 to 18 percent slopes, moderately eroded	1.1	0.6%
CdE2	Casco-Rodman loams, 18 to 50 percent slopes, moderately eroded	44.4	23.7%
MhC2	Miamian silt loam, 6 to 12 percent slopes, moderately eroded	40.7	21.7%
MhD2	Miamian silt loam, 12 to 18 percent slopes, moderately eroded	8.7	4.6%
OcB	Ockley silt loam, 2 to 6 percent slopes	13.1	7.0%
OcB2	Ockley silt loam, 2 to 6 percent slopes, moderately eroded	2.0	1.1%
OdB	Ockley-Urban land complex, undulating	47.2	25.1%
RtB	Rush silt loam, 2 to 6 percent slopes	24.3	12.9%
RvB	Russell-Miamian silt loams, 2 to 6 percent slopes	0.6	0.3%
RvB2	Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded	5.7	3.0%
<b>Totals for Area of Interest</b>		<b>187.8</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

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Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be

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made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Greene County, Ohio

### CcD2—Casco-Eldean loams, 12 to 18 percent slopes, moderately eroded

#### Map Unit Setting

*Elevation:* 340 to 1,500 feet

*Mean annual precipitation:* 28 to 40 inches

*Mean annual air temperature:* 46 to 57 degrees F

*Frost-free period:* 135 to 200 days

#### Map Unit Composition

*Casco and similar soils:* 50 percent

*Eldean and similar soils:* 35 percent

*Minor components:* 15 percent

#### Description of Casco

##### Setting

*Landform:* Outwash terraces, kames

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Riser

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy alluvium over sandy and gravelly outwash

##### Properties and qualities

*Slope:* 12 to 18 percent

*Depth to restrictive feature:* 10 to 24 inches to strongly contrasting textural stratification

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 25 percent

*Available water capacity:* Very low (about 2.4 inches)

##### Interpretive groups

*Farmland classification:* Farmland of local importance

*Land capability (nonirrigated):* 6e

*Hydrologic Soil Group:* B

##### Typical profile

*0 to 4 inches:* Loam

*4 to 20 inches:* Clay loam

*20 to 60 inches:* Error

#### Description of Eldean

##### Setting

*Landform:* Kames, outwash terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Riser

*Down-slope shape:* Linear

*Across-slope shape:* Linear

## Custom Soil Resource Report

*Parent material:* Loamy outwash over sandy and gravelly outwash

### Properties and qualities

*Slope:* 12 to 18 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 65 percent

*Available water capacity:* Low (about 5.5 inches)

### Interpretive groups

*Farmland classification:* Farmland of local importance

*Land capability (nonirrigated):* 4e

*Hydrologic Soil Group:* B

### Typical profile

*0 to 13 inches:* Loam

*13 to 33 inches:* Gravelly clay

*33 to 38 inches:* Very gravelly sandy loam

*38 to 60 inches:* Stratified sand to very gravelly loamy coarse sand

### Minor Components

#### Silt loam surface layer

*Percent of map unit:* 8 percent

#### Gravelly loam surface layer

*Percent of map unit:* 7 percent

## CdE2—Casco-Rodman loams, 18 to 50 percent slopes, moderately eroded

### Map Unit Setting

*Elevation:* 340 to 1,500 feet

*Mean annual precipitation:* 28 to 55 inches

*Mean annual air temperature:* 46 to 57 degrees F

*Frost-free period:* 130 to 200 days

### Map Unit Composition

*Casco and similar soils:* 50 percent

*Rodman and similar soils:* 35 percent

*Minor components:* 15 percent

### Description of Casco

#### Setting

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Backslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Riser  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Loamy alluvium over sandy and gravelly outwash

### Properties and qualities

*Slope:* 18 to 50 percent  
*Depth to restrictive feature:* 10 to 24 inches to strongly contrasting textural stratification  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 25 percent  
*Available water capacity:* Very low (about 2.4 inches)

### Interpretive groups

*Farmland classification:* Not prime farmland  
*Land capability (nonirrigated):* 7e  
*Hydrologic Soil Group:* B

### Typical profile

*0 to 4 inches:* Loam  
*4 to 20 inches:* Clay loam  
*20 to 60 inches:* Error

## Description of Rodman

### Setting

*Landform:* Terraces  
*Parent material:* Sandy and gravelly outwash

### Properties and qualities

*Slope:* 18 to 50 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 45 percent  
*Available water capacity:* Low (about 3.3 inches)

### Interpretive groups

*Farmland classification:* Not prime farmland  
*Land capability (nonirrigated):* 7s  
*Hydrologic Soil Group:* A

### Typical profile

*0 to 10 inches:* Gravelly loam  
*10 to 60 inches:* Stratified sand to very gravelly loamy coarse sand

## Minor Components

### Eroded areas with sand and gravel at the surface

*Percent of map unit:* 5 percent

**Eldean**

*Percent of map unit: 5 percent*

*Landform: End moraines, outwash terraces, kames*

**Silt loam surface layer**

*Percent of map unit: 3 percent*

**Gravelly loam surface layer**

*Percent of map unit: 2 percent*

**MhC2—Miamiian silt loam, 6 to 12 percent slopes, moderately eroded**

**Map Unit Setting**

*Elevation: 700 to 1,530 feet*

*Mean annual precipitation: 35 to 45 inches*

*Mean annual air temperature: 50 to 55 degrees F*

*Frost-free period: 151 to 180 days*

**Map Unit Composition**

*Miamiian and similar soils: 90 percent*

*Minor components: 10 percent*

**Description of Miamiian**

**Setting**

*Landform: Till plains, moraines*

*Landform position (two-dimensional): Shoulder, footslope*

*Landform position (three-dimensional): Side slope, crest*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Loess over loamy till*

**Properties and qualities**

*Slope: 6 to 12 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Well drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum content: 50 percent*

*Available water capacity: Moderate (about 7.7 inches)*

**Interpretive groups**

*Farmland classification: Farmland of local importance*

*Land capability (nonirrigated): 3e*

*Hydrologic Soil Group: C*

**Typical profile**

*0 to 7 inches:* Silt loam  
*7 to 38 inches:* Clay loam  
*38 to 60 inches:* Loam

**Minor Components**

**Celina**

*Percent of map unit:* 5 percent  
*Landform:* Till plains, moraines  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear

**Severely eroded areas**

*Percent of map unit:* 3 percent

**Shallow gullies**

*Percent of map unit:* 2 percent

**MhD2—Miamian silt loam, 12 to 18 percent slopes, moderately eroded**

**Map Unit Setting**

*Elevation:* 700 to 1,530 feet  
*Mean annual precipitation:* 35 to 45 inches  
*Mean annual air temperature:* 50 to 55 degrees F  
*Frost-free period:* 151 to 180 days

**Map Unit Composition**

*Miamian and similar soils:* 90 percent  
*Minor components:* 10 percent

**Description of Miamian**

**Setting**

*Landform:* Moraines, till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loess over loamy till

**Properties and qualities**

*Slope:* 12 to 18 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None

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*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 50 percent  
*Available water capacity:* Moderate (about 7.7 inches)

### Interpretive groups

*Farmland classification:* Farmland of local importance  
*Land capability (nonirrigated):* 4e  
*Hydrologic Soil Group:* C

### Typical profile

*0 to 7 inches:* Silt loam  
*7 to 38 inches:* Clay loam  
*38 to 60 inches:* Loam

### Minor Components

#### Hennepin

*Percent of map unit:* 5 percent  
*Landform:* Till plains

#### Russell

*Percent of map unit:* 5 percent  
*Landform:* Till plains

## OcB—Ockley silt loam, 2 to 6 percent slopes

### Map Unit Setting

*Elevation:* 400 to 1,000 feet  
*Mean annual precipitation:* 35 to 45 inches  
*Mean annual air temperature:* 46 to 55 degrees F  
*Frost-free period:* 130 to 180 days

### Map Unit Composition

*Ockley and similar soils:* 90 percent  
*Minor components:* 10 percent

### Description of Ockley

#### Setting

*Landform:* Stream terraces, outwash plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy outwash

#### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

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*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 40 percent  
*Available water capacity:* Moderate (about 7.7 inches)

### Interpretive groups

*Farmland classification:* All areas are prime farmland  
*Land capability (nonirrigated):* 2e  
*Hydrologic Soil Group:* B

### Typical profile

*0 to 10 inches:* Silt loam  
*10 to 22 inches:* Silty clay loam  
*22 to 45 inches:* Clay loam  
*45 to 60 inches:* Stratified gravelly coarse sand to gravelly sand

### Minor Components

#### Rush

*Percent of map unit:* 6 percent  
*Landform:* Terraces

#### Eldean

*Percent of map unit:* 4 percent  
*Landform:* End moraines, outwash terraces, kames

## OcB2—Ockley silt loam, 2 to 6 percent slopes, moderately eroded

### Map Unit Setting

*Elevation:* 400 to 1,000 feet  
*Mean annual precipitation:* 35 to 45 inches  
*Mean annual air temperature:* 46 to 55 degrees F  
*Frost-free period:* 130 to 180 days

### Map Unit Composition

*Ockley and similar soils:* 95 percent  
*Minor components:* 5 percent

### Description of Ockley

#### Setting

*Landform:* Outwash plains, stream terraces  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy outwash

#### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches

## Custom Soil Resource Report

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 40 percent

*Available water capacity:* Moderate (about 7.8 inches)

### Interpretive groups

*Farmland classification:* All areas are prime farmland

*Land capability (nonirrigated):* 2e

*Hydrologic Soil Group:* B

### Typical profile

*0 to 10 inches:* Silt loam

*10 to 22 inches:* Silty clay loam

*22 to 45 inches:* Clay loam

*45 to 60 inches:* Stratified gravelly coarse sand to gravelly sand

### Minor Components

#### Eldean

*Percent of map unit:* 5 percent

*Landform:* Kames, end moraines, outwash terraces

## OdB—Ockley-Urban land complex, undulating

### Map Unit Setting

*Elevation:* 400 to 1,000 feet

*Mean annual precipitation:* 35 to 45 inches

*Mean annual air temperature:* 46 to 55 degrees F

*Frost-free period:* 130 to 180 days

### Map Unit Composition

*Ockley and similar soils:* 45 percent

*Urban land:* 25 percent

*Minor components:* 30 percent

### Description of Ockley

#### Setting

*Landform:* Stream terraces, outwash plains

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Loess over loamy outwash

#### Properties and qualities

*Slope:* 2 to 6 percent

## Custom Soil Resource Report

*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 40 percent  
*Available water capacity:* Moderate (about 7.8 inches)

### Typical profile

*0 to 10 inches:* Silt loam  
*10 to 22 inches:* Clay loam  
*22 to 45 inches:* Clay loam  
*45 to 60 inches:* Stratified gravelly coarse sand to gravelly sand

### Minor Components

#### Fill areas

*Percent of map unit:* 20 percent

#### Eldean

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces, kames, end moraines

#### Rush

*Percent of map unit:* 5 percent  
*Landform:* Terraces

## RtB—Rush silt loam, 2 to 6 percent slopes

### Map Unit Setting

*Elevation:* 400 to 1,020 feet  
*Mean annual precipitation:* 28 to 45 inches  
*Mean annual air temperature:* 46 to 55 degrees F  
*Frost-free period:* 130 to 190 days

### Map Unit Composition

*Rush and similar soils:* 90 percent  
*Minor components:* 10 percent

### Description of Rush

#### Setting

*Landform:* Outwash plains, terraces  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy outwash

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 35 percent  
*Available water capacity:* High (about 9.0 inches)

### Interpretive groups

*Farmland classification:* All areas are prime farmland  
*Land capability (nonirrigated):* 2e  
*Hydrologic Soil Group:* B

### Typical profile

*0 to 13 inches:* Silt loam  
*13 to 38 inches:* Silty clay loam  
*38 to 60 inches:* Sandy clay loam  
*60 to 75 inches:* Stratified extremely gravelly coarse sand to sand

### Minor Components

#### Ockley

*Percent of map unit:* 5 percent  
*Landform:* Terraces

#### Moderately eroded areas

*Percent of map unit:* 5 percent

## RvB—Russell-Miamian silt loams, 2 to 6 percent slopes

### Map Unit Setting

*Elevation:* 500 to 1,530 feet  
*Mean annual precipitation:* 35 to 46 inches  
*Mean annual air temperature:* 50 to 55 degrees F  
*Frost-free period:* 150 to 190 days

### Map Unit Composition

*Russell and similar soils:* 55 percent  
*Miamian and similar soils:* 30 percent  
*Minor components:* 15 percent

### Description of Russell

#### Setting

*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve

## Custom Soil Resource Report

*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy till

### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 35 percent  
*Available water capacity:* Moderate (about 8.2 inches)

### Interpretive groups

*Farmland classification:* All areas are prime farmland  
*Land capability (nonirrigated):* 2e  
*Hydrologic Soil Group:* B

### Typical profile

*0 to 13 inches:* Silt loam  
*13 to 22 inches:* Silty clay loam  
*22 to 37 inches:* Clay loam  
*37 to 60 inches:* Loam

## Description of Miamian

### Setting

*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy till

### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 50 percent  
*Available water capacity:* Moderate (about 7.7 inches)

### Interpretive groups

*Farmland classification:* All areas are prime farmland  
*Land capability (nonirrigated):* 2e  
*Hydrologic Soil Group:* C

### Typical profile

*0 to 7 inches:* Silt loam  
*7 to 38 inches:* Clay loam  
*38 to 60 inches:* Loam

**Minor Components**

**Xenia**

*Percent of map unit: 5 percent*  
*Landform: Till plains*

**Moderately eroded areas**

*Percent of map unit: 5 percent*

**Limestone substratum soils**

*Percent of map unit: 5 percent*

**RvB2—Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded**

**Map Unit Setting**

*Elevation: 500 to 1,530 feet*  
*Mean annual precipitation: 35 to 46 inches*  
*Mean annual air temperature: 50 to 55 degrees F*  
*Frost-free period: 150 to 190 days*

**Map Unit Composition**

*Russell and similar soils: 50 percent*  
*Miamian and similar soils: 40 percent*  
*Minor components: 10 percent*

**Description of Russell**

**Setting**

*Landform: Till plains*  
*Landform position (two-dimensional): Summit*  
*Landform position (three-dimensional): Interfluve*  
*Down-slope shape: Convex*  
*Across-slope shape: Linear*  
*Parent material: Loess over loamy till*

**Properties and qualities**

*Slope: 2 to 6 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Well drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)*  
*Depth to water table: More than 80 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum content: 35 percent*  
*Available water capacity: Moderate (about 8.2 inches)*

## Custom Soil Resource Report

### Interpretive groups

*Farmland classification:* All areas are prime farmland  
*Land capability (nonirrigated):* 2e  
*Hydrologic Soil Group:* B

### Typical profile

*0 to 13 inches:* Silt loam  
*13 to 22 inches:* Silty clay loam  
*22 to 37 inches:* Clay loam  
*37 to 60 inches:* Loam

### Description of Miamian

#### Setting

*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy till

#### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 50 percent  
*Available water capacity:* Moderate (about 7.7 inches)

### Interpretive groups

*Farmland classification:* All areas are prime farmland  
*Land capability (nonirrigated):* 2e  
*Hydrologic Soil Group:* C

### Typical profile

*0 to 7 inches:* Silt loam  
*7 to 38 inches:* Clay loam  
*38 to 60 inches:* Loam

### Minor Components

#### Xenia

*Percent of map unit:* 10 percent  
*Landform:* Till plains

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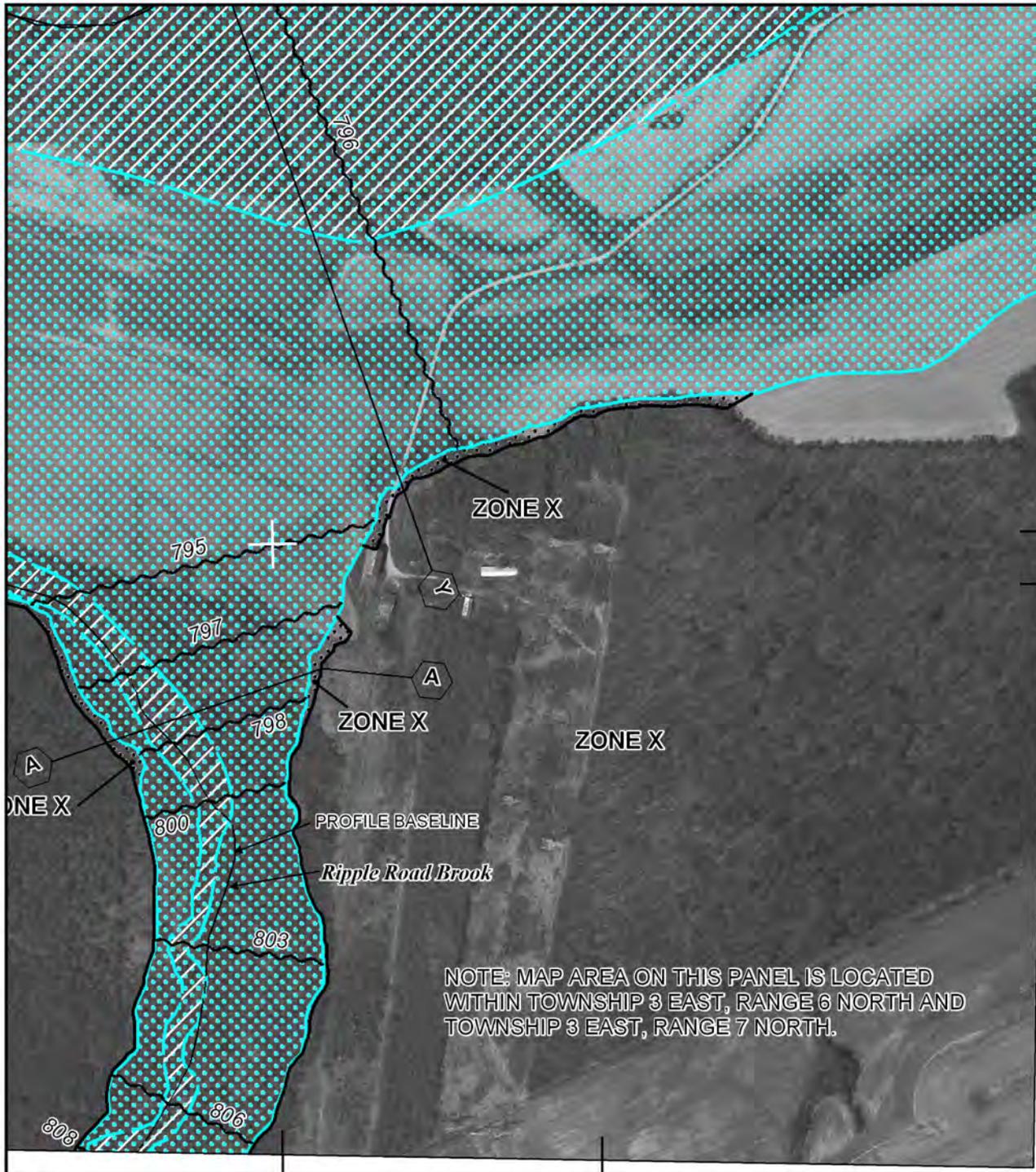
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## Custom Soil Resource Report

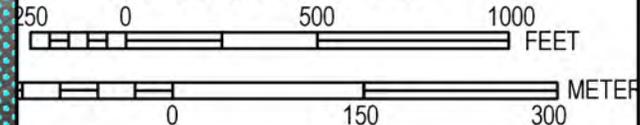
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NOTE: MAP AREA ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 3 EAST, RANGE 6 NORTH AND TOWNSHIP 3 EAST, RANGE 7 NORTH.



MAP SCALE 1" = 500'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0109D

**FIRM**  
 FLOOD INSURANCE RATE MAP  
 GREENE COUNTY,  
 OHIO  
 AND INCORPORATED AREAS

PANEL 109 OF 295  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BEAVERCREEK, CITY OF	390876	0109	D
GREENE COUNTY	390193	0109	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



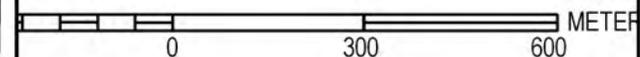
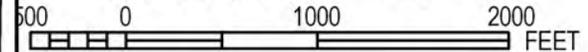
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 EFFECTIVE DATE  
 MARCH 17, 2011

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)



MAP SCALE 1" = 1000'



NFIP

PANEL 0120D

**FIRM**  
 FLOOD INSURANCE RATE MAP  
 GREENE COUNTY,  
 OHIO  
 AND INCORPORATED AREAS

PANEL 120 OF 295  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
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GREENE COUNTY	390193	0120	D

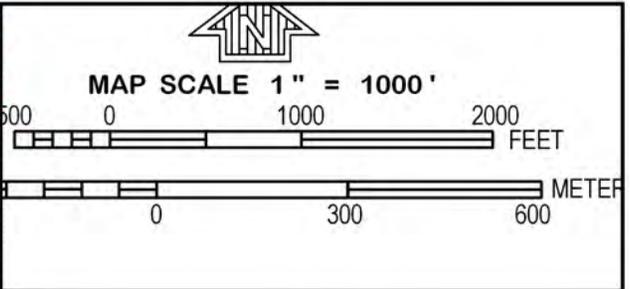
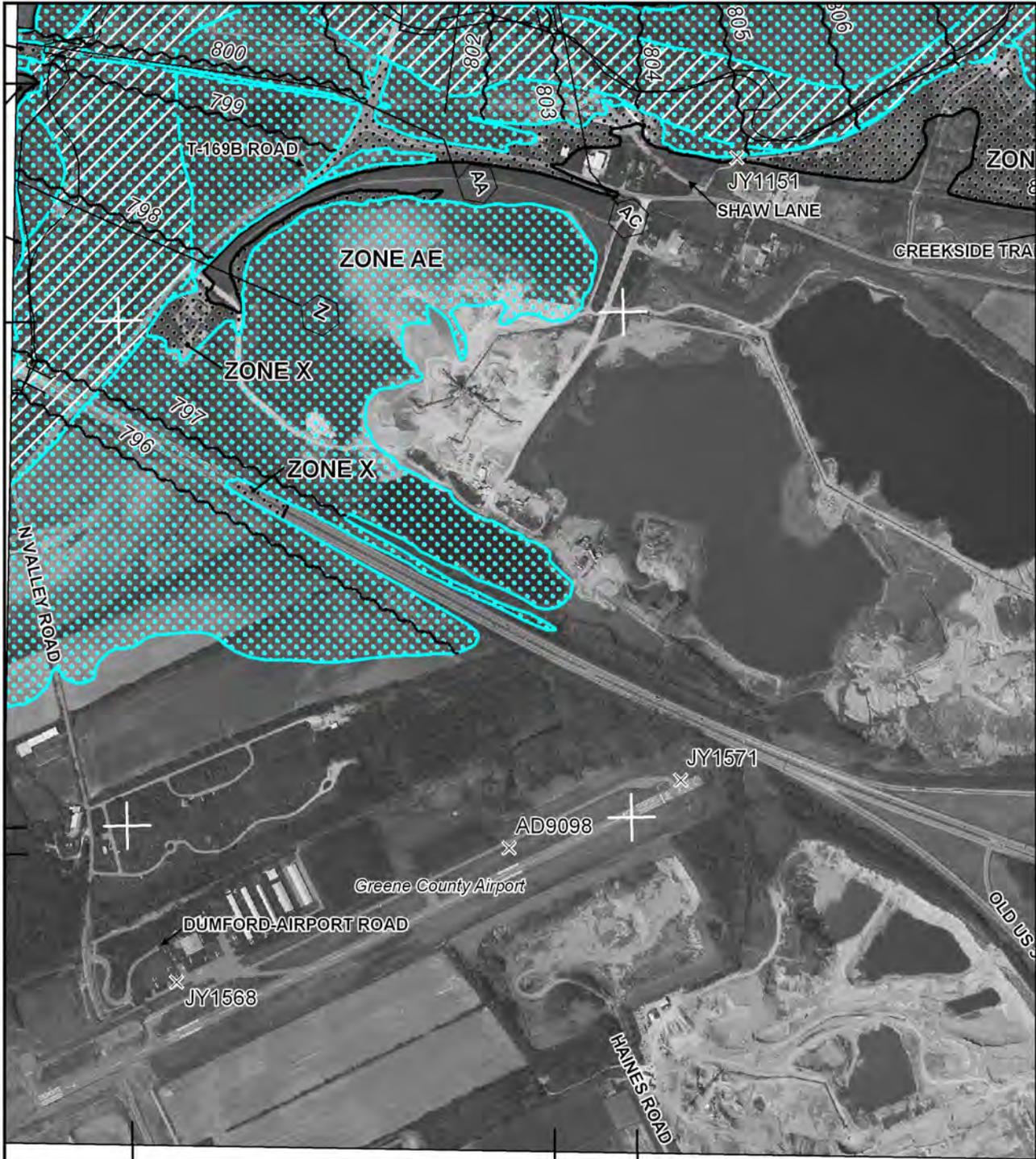
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MAP NUMBER  
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**NFIP**

**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0130D

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**GREENE COUNTY,**  
**OHIO**  
**AND INCORPORATED AREAS**

**PANEL 130 OF 295**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENE COUNTY	390193	0130	D
XENIA, CITY OF	390197	0130	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



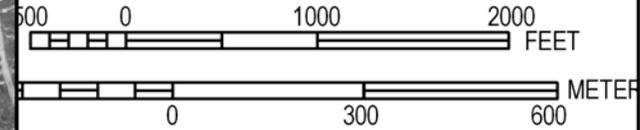
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**EFFECTIVE DATE**  
**MARCH 17, 2011**

Federal Emergency Management Agency

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MAP SCALE 1" = 1000'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0140D

**FIRM**  
 FLOOD INSURANCE RATE MAP  
 GREENE COUNTY,  
 OHIO  
 AND INCORPORATED AREAS

PANEL 140 OF 295  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENE COUNTY	390193	0140	D
XENIA, CITY OF	390197	0140	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



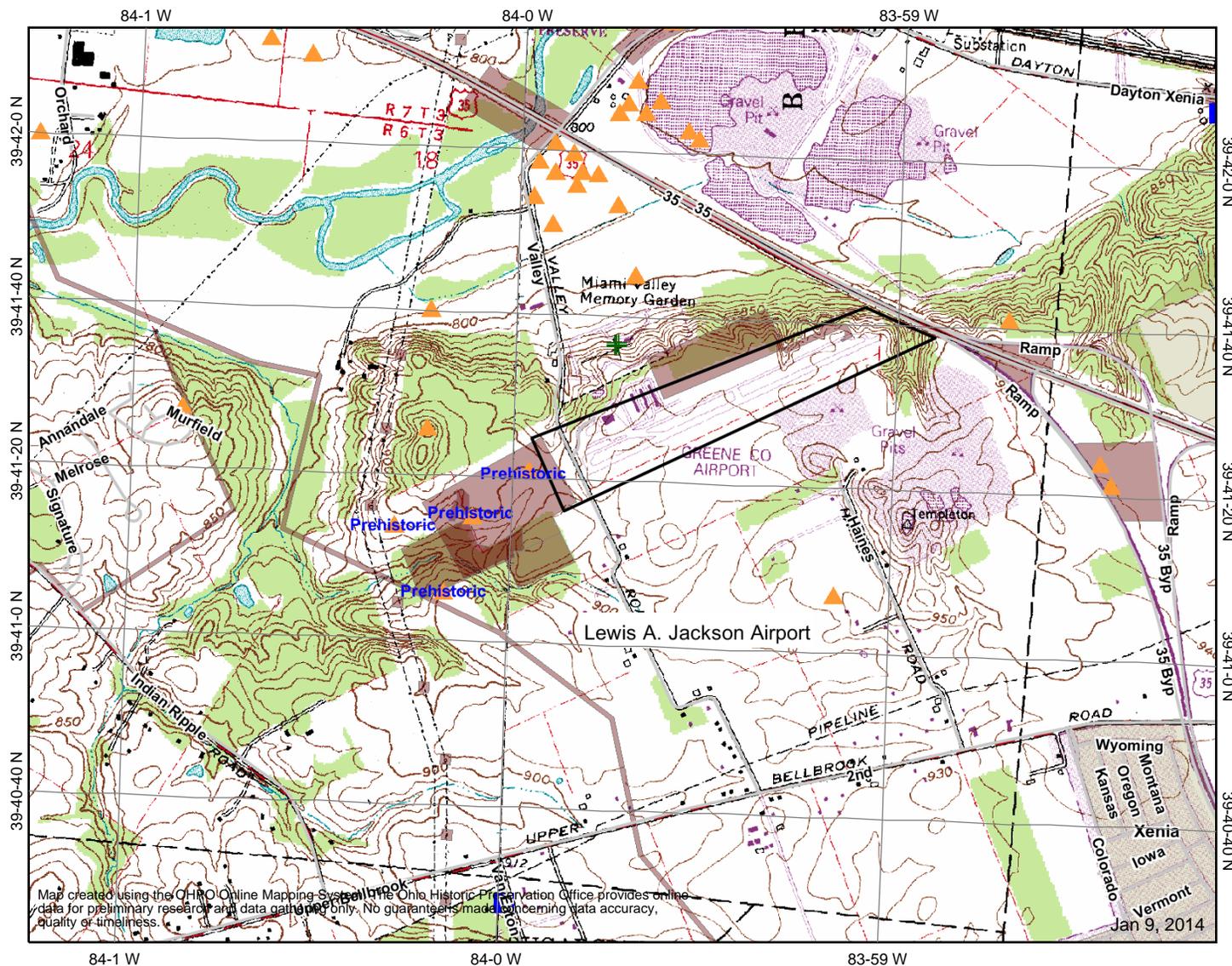
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**EFFECTIVE DATE**  
 MARCH 17, 2011

Federal Emergency Management Agency

City of Xenia  
 390197

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# Cultural Resources



### Legend

- NR Determinations of Eligibility
- National Road
- Highways
- Roads
- National Historic Landmarks
- National Register Listings
- Archaeological Sites
- Historic Structures
- OGS Cemeteries
- Phase 1
- Phase 2
- Phase 3
- National Register Boundaries
- Cities
- Wayne National Forest
- Counties

Map center: 243149, 4397295 (UTM 17N)

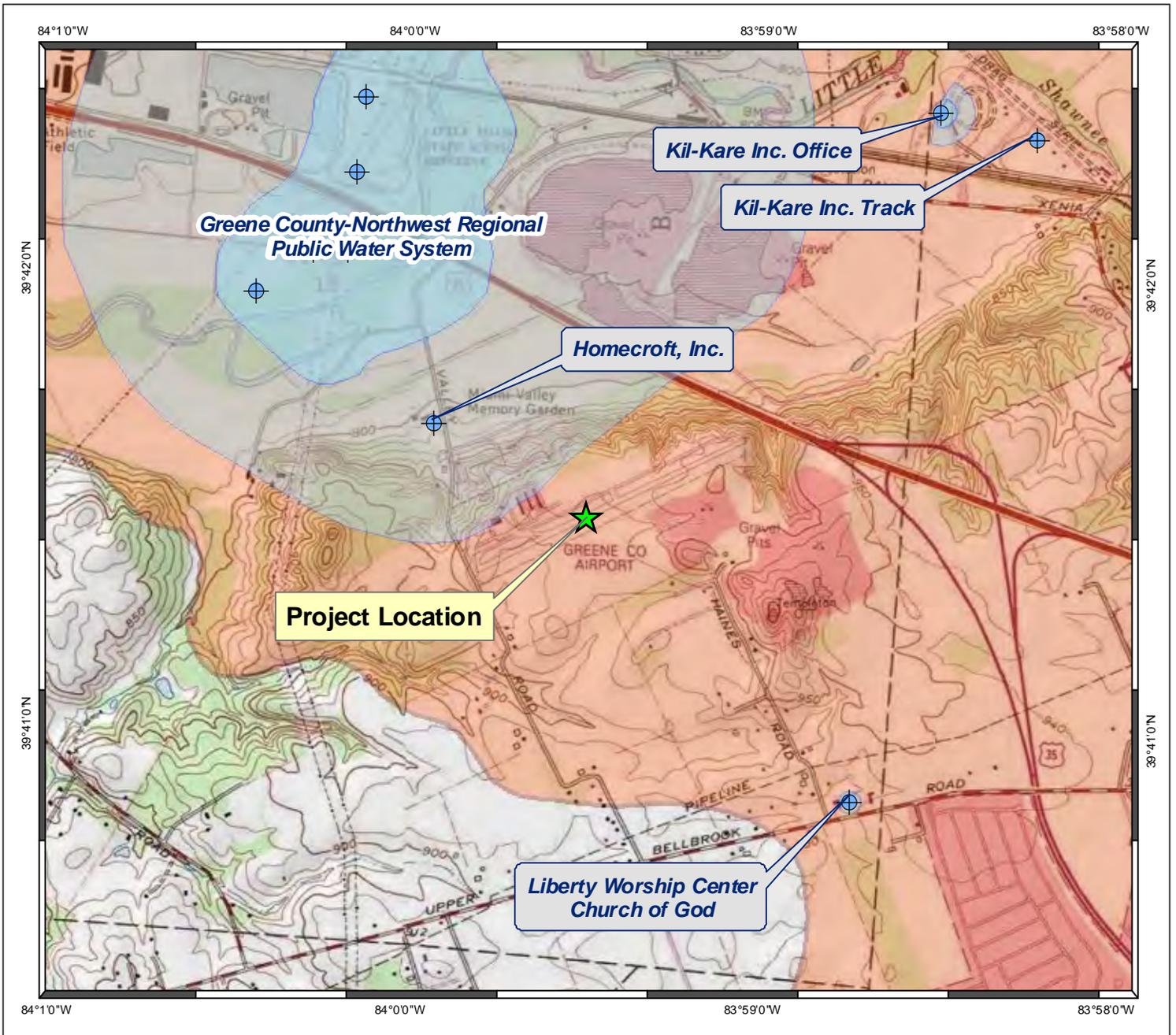
Scale: 1:24,000



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Map created using the OHIO Online Mapping System. The Ohio Historic Preservation Office provides online data for preliminary research and data gathering only. No guarantees made concerning data accuracy, quality or timeliness.

Jan 9, 2014



**Legend**

- Public Water System Wells
- Public Water System Intakes
- Ohio Sole Source Aquifers

**Source Water Protection Areas (ground water)**

- Inner Management Zone (1-year time of travel)
- Drinking Water Source Protection Area (5-year time of travel)

**Source Water Protection Areas (surface water)**

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| Emergency Management Zone             | Zone of High Concern - Ohio River    |
| Corridor Management Zone              | Source Water Area - Ohio River       |
| Source Water Area                     | Critical Area Zone - Lake Erie       |
| Zone of Critical Concern - Ohio River | Potential Influence Zone - Lake Erie |

**Project Request**

Drinking Water Source Protection Areas, Public Water System wells and intakes, and Sole Source Aquifers near the Greene Co. Lewis A. Jackson Airport, Xenia, Greene County, Ohio.

Requested by: Caroline, Ammerman, Stantec  
 Map completed by: Linda Slattery, DDAGW  
 Date: January 10, 2014

Disclaimer: Delineation of source water protection areas are ongoing. As a result, this map may not include all source water protection areas for public water systems in the area depicted.

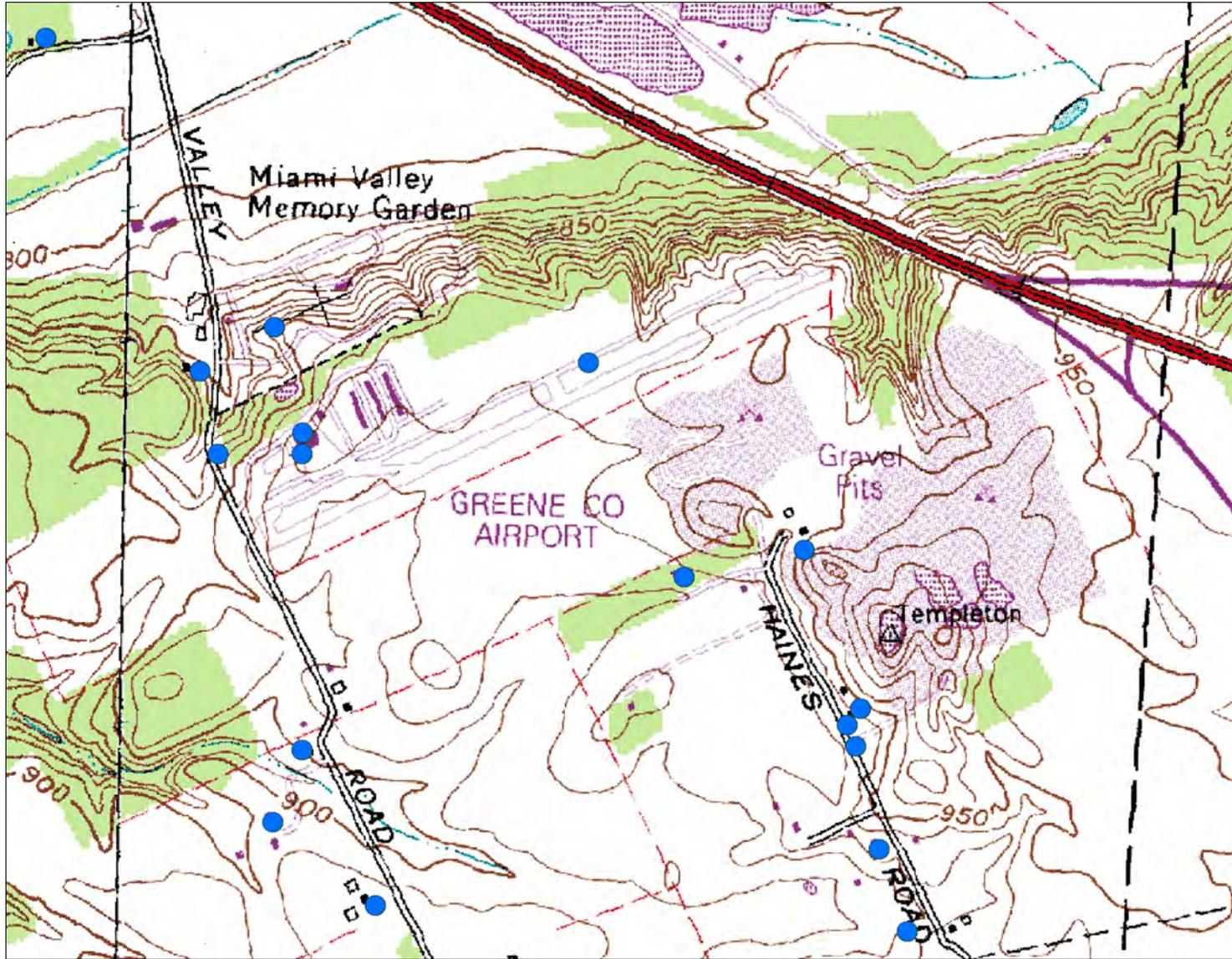


**Drinking Water Source Protection Areas**

<http://epa.ohio.gov/ddagw/swap.aspx>



## Wells in Vicinity of Lewis A. Jackson Airport



Notes:



Note: These locations represent records that have coordinates in the ODNR Well Log Database. Please go to <http://ohiodnr.com/water/maptechs/wellogs/appNew/Default.aspx> to search additional records.





# U.S. Fish and Wildlife Service National Wetlands Inventory

Lewis A. Jackson  
Airport

Jan 14, 2014



## Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

## Riparian

- Herbaceous
- Forested/Shrub

## Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks: