

AICUZ PROGRAM

The Department of Defense’s (DoD) Air Installations Compatible Use Zones (AICUZ) Program balances the needs of military operations with community concerns by promoting compatible use of lands in the vicinity of military installations. This is done to protect public health, safety, and welfare without degrading operational safety and mission requirements. AICUZ studies analyze the effects of military operational noise, aircraft accident potential, and land development on present and future neighbors of United States military installations.

This brochure summarizes the Wright Patterson Air Force Base (WPAFB) 2022 AICUZ Study. The 2022 AICUZ Study provides an update to the 1995 WPAFB Study. The update documents changes in aircraft at WPAFB and provides compatible land use guidelines for land areas surrounding WPAFB. Some land close to WPAFB will experience high noise levels. Without compatible land use controls, development in the surrounding areas could result in incompatible uses that create conflicts between military operation and landowners.

Wright Patterson AFB History and Mission

Wright-Patterson AFB (WPAFB) is headquarters for a vast, worldwide logistics system and a world-class laboratory research function; it is also the foremost acquisition and development center in the Air Force. The 88th Air Base Wing (ABW), the host unit for WPAFB, operates the airfield, maintains all infrastructure, and provides security, communications, air traffic control, public affairs, and many other services. The 88th ABW’s mission includes mission support and aid to a myriad of units and military capabilities, emphasizing teamwork and coordination as well as promoting shared knowledge and growth.

The 445th Airlift Wing is the main flying tenant at WPAFB and is under the Air Force Reserve Command. Its mission is to attain and maintain operational readiness; provide strategic transport of personnel and equipment; provide aeromedical evacuation; and recruit and train toward these goals. Most of the 445th Airlift Wing members are reservists who serve in the military on a part-time basis.

WPAFB was established as a military installation during World War I, although its aviation history began in 1905 when Wilbur and Orville Wright developed and practiced flying the first practical airplane on land that is now part of the WPAFB. WPAFB has followed an overall historical pattern of expanding operations, personnel, and structures during wartime and contracting them during times of peace. World War II profoundly altered WPAFB by increasing the workforce from 3,700 to over 50,000 people and implementing massive construction projects to build new work centers, housing complexes, and laboratory structures. Wright Field expanded significantly from 40 buildings in 1941 to over 300 in 1944. After WWII ended in 1945, Wright Field’s operations returned to research and development. Since that time, WPAFB has played a role in supporting every major military event involving the U.S.

Economic Impact

The military provides direct, indirect, and induced economic benefits to local communities through jobs and wages. Benefits include employment opportunities and increases in local business revenue, property sales, and tax revenue. WPAFB is largest single-site employer in the State of Ohio, with 31,292 total personnel directly and indirectly employed by WPAFB in 2019. WPAFB boasts an annual federal payroll of \$2.77 billion, with a final output of \$5.65 billion. The base annually generates approximately \$1.64 billion in indirect and induced jobs/payroll, with a total of \$16.75 billion in total annual economic impact. That makes the base’s economic footprint enormously important for both the region and state.

Noise Zones and Noise Metric

Under the AICUZ Program, the DoD provides noise zones to define noise exposure. Noise exposure is measured using the Day-night Average Sound Level (DNL), which is the standard metric used by many government agencies (e.g., the U.S. Environmental Protection Agency, Federal Aviation Administration) to address aircraft noise. The DNL metric is based on the number of daily aircraft operations averaged over a year. A 10-decibel (dB) adjustment, or penalty, is included in the DNL metric for aircraft noise occurring between 10:00 p.m. and 7:00 a.m. because people are more sensitive to noise at night.

Noise exposure contours are based on typical operations and flight tracks. Note that flight tracks are not roadways in the sky. Weather conditions, pilot technique, and other air traffic can cause some lateral deviation within the traffic pattern around a runway.

Clear Zones and Accident Potential Zones

The DoD provides Clear Zones and Accident Potential Zones (APZs) for Class A and Class B Runways as planning tools for local agencies. Clear Zones and APZs define the areas where an aircraft accident is likely to occur, if one were to occur. Class B Runway Clear Zones and APZs are described as:

- ▶ **Clear Zone:** a 3,000-foot square area centered on the end of the runway.
- ▶ **APZ I:** a 3,000-foot-wide by 5,000-foot-long area beyond the Clear Zone and along the extended runway centerline.
- ▶ **APZ II:** a 3,000-foot-wide by 7,000-foot-long area beyond APZ I and along the extended runway centerline.

Hazards to Aircraft Flight Zone (HAFZ)

Certain land uses and activities can pose potential hazards to flight. These land uses and activities may include:

- ▶ **Uses that would attract birds**, especially waterfowl;
- ▶ **Towers, structures, and vegetation** that penetrate navigable airspace or are to be constructed near the airfield;
- ▶ **Lighting (direct or reflected)** that would impair pilot vision;
- ▶ **Uses that would generate smoke**, steam, or dust; and
- ▶ **Electromagnetic interference** with aircraft communication, navigation, or other electrical systems.

Generalized Land Use Categories and Noise/Safety Compatibility<sup>1</sup>

Generalized Land Use Category	Noise Zone (dB DNL)						CZ	APZ I	APZ II
	<65	65-70	70-75	75-80	80-85	85+			
Residential	Yes	No <sup>2</sup>	No <sup>2</sup>	No	No	No	No	No	No <sup>3</sup>
Commercial	Yes	Yes	Yes <sup>4</sup>	Yes <sup>4</sup>	No	No	No	Yes <sup>4</sup>	Yes <sup>4</sup>
Industrial	Yes	Yes	Yes	Yes	Yes <sup>4</sup>	No	No	Yes <sup>4</sup>	Yes <sup>4</sup>
Public/Quasi-Public	Yes	Yes <sup>4</sup>	Yes <sup>4</sup>	Yes <sup>4</sup>	No	No	No	No	Yes <sup>4</sup>
Resource Production and Extraction	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Open/Agriculture/Low-Density	Yes	Yes <sup>4</sup>	Yes <sup>4</sup>	Yes <sup>4</sup>	Yes <sup>4</sup>	Yes <sup>4</sup>	No	Yes <sup>4</sup>	Yes <sup>4</sup>
Transportation/Communication/Utilities	Yes	Yes	Yes	Yes	Yes	No	No	Yes <sup>4</sup>	Yes
Vacant/Undeveloped	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Adapted from AFH 32-7084. Key: Compatible Compatible with restrictions Incompatible

Notes:

- <sup>1</sup> This generalized table demonstrates the land compatibility guidelines. Refer to Appendix A for use in determining land use compatibility.
- <sup>2</sup> Residential land uses within the greater than 65 dB DNL noise zone are considered incompatible. However, if residential uses are considered essential, noise-attenuation measures should be incorporated into the building structures.
- <sup>3</sup> Residential land uses in APZ II are considered incompatible, with the exception of density less than two dwellings per acre.
- <sup>4</sup> Compatible with restrictions.

The Air Force has identified a Hazards to Aircraft Flight Zone (HAFZ) within the imaginary surfaces of the runways to address these concerns. Unlike noise zones, Clear Zones, and APZs, the HAFZ does not have recommended land use compatibility (see the Compatible Development section). Instead, the HAFZ is a consultation zone within which the DoD requests that project applicants and local planning bodies consult with the DoD to ensure the project is compatible with installation operations.

Compatible Development

The AICUZ Program includes guidelines for land use within noise zones, Clear Zones, and APZs (see Table above ▲). In general, these guidelines recommend that noise-sensitive land uses be

placed outside of high noise zones and that people-intensive uses not be placed within APZs. Certain land uses are considered incompatible, while other land uses may be considered compatible, compatible with restrictions, or incompatible with exceptions.

WPAFB is in a developed area near the intersection of four Ohio counties and northeast of the Dayton metropolitan area. The airfield’s associated noise zones, CZs, and APZs also span developed areas of multiple towns and cities located around the installation. In addition, major transportation corridors are present in the areas surrounding WPAFB, including I-70 to the north and I-675 to the east, I-75 to the west, and U.S. Route 35 to the south, along with a variety of secondary roadways

that connect the cities, towns, and the installation. The map on the opposite side of this brochure shows WPAFB’s aircraft noise zones, Clear Zones, and APZs.

Land development should be compatible with noise zones, Clear Zones, and APZs around a military airfield. Although the military can serve in an advisory capacity, local and tribal governments, as well as private citizens control development beyond the boundaries of WPAFB.

BASED AND TRANSIENT AIRCRAFT UTILIZING WPAFB

Based Aircraft

Aircraft permanently based at WPAFB are the most common aircraft conducting flight operations at the installation. The only aircraft permanently assigned to WPAFB is the C17 Globemaster III.



C-17 Globemaster III

Transient Aircraft

In addition to those aircraft assigned to WPAFB, the base hosts a variety of transient aircraft. These include tactical, cargo and passenger transport, and refueling aircraft. Some of these include the following:



C-12 Huron



E-4B



C-21



C-130 Hercules



C-37



www.wpafb.af.mil  
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INSTAGRAM  
wrihtpattarfb

88abdw.pa.workflow@us.af.mil  
WPAFB posts information on the installation website, including alerts about upcoming aircraft and training operations that may be shared publicly.

or via email at:  
(937) 522-3252  
they can be reached by phone at:

WPAFB Public Affairs—

complaints:  
following with any noise  
encouraged to contact the  
Concerned citizens are

For More Information



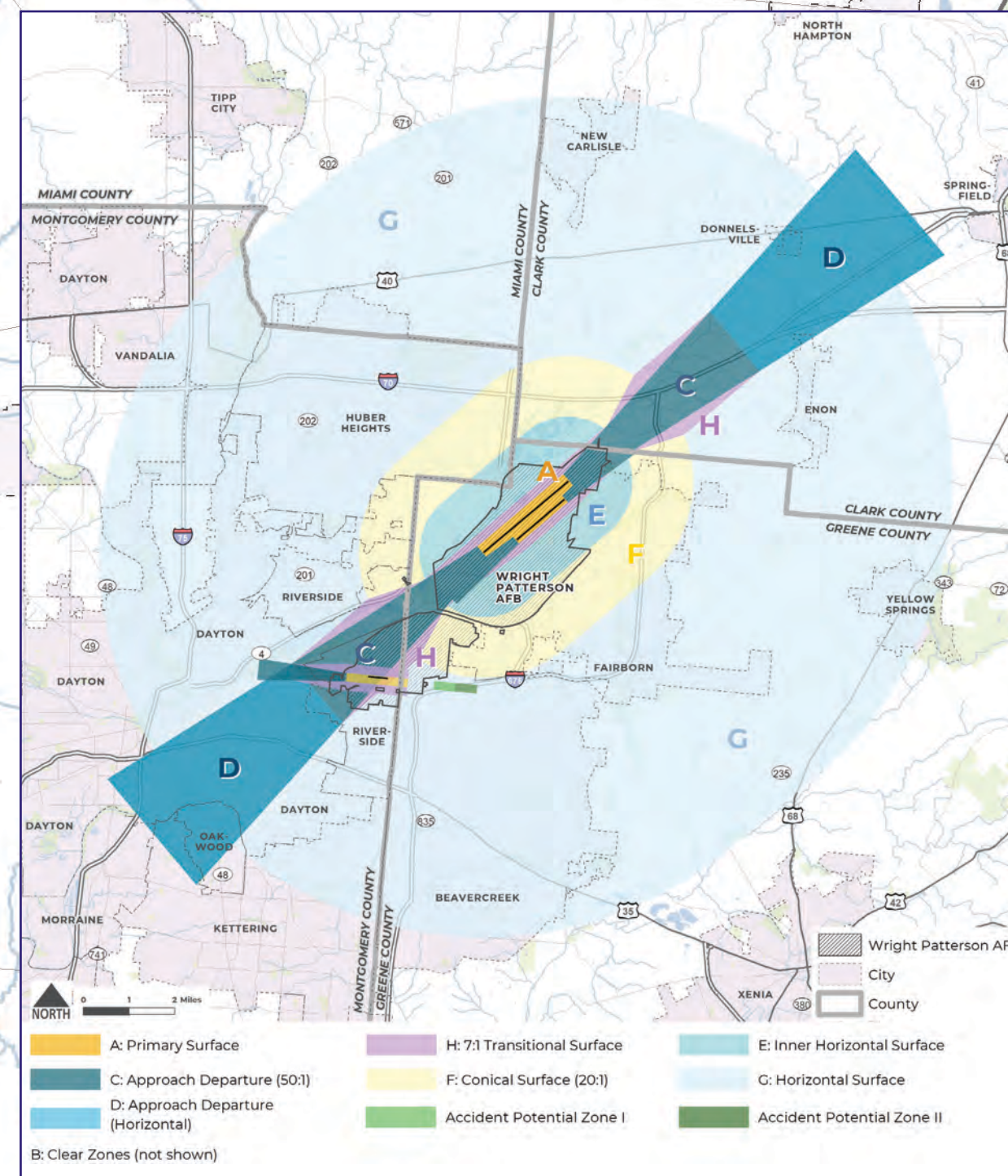
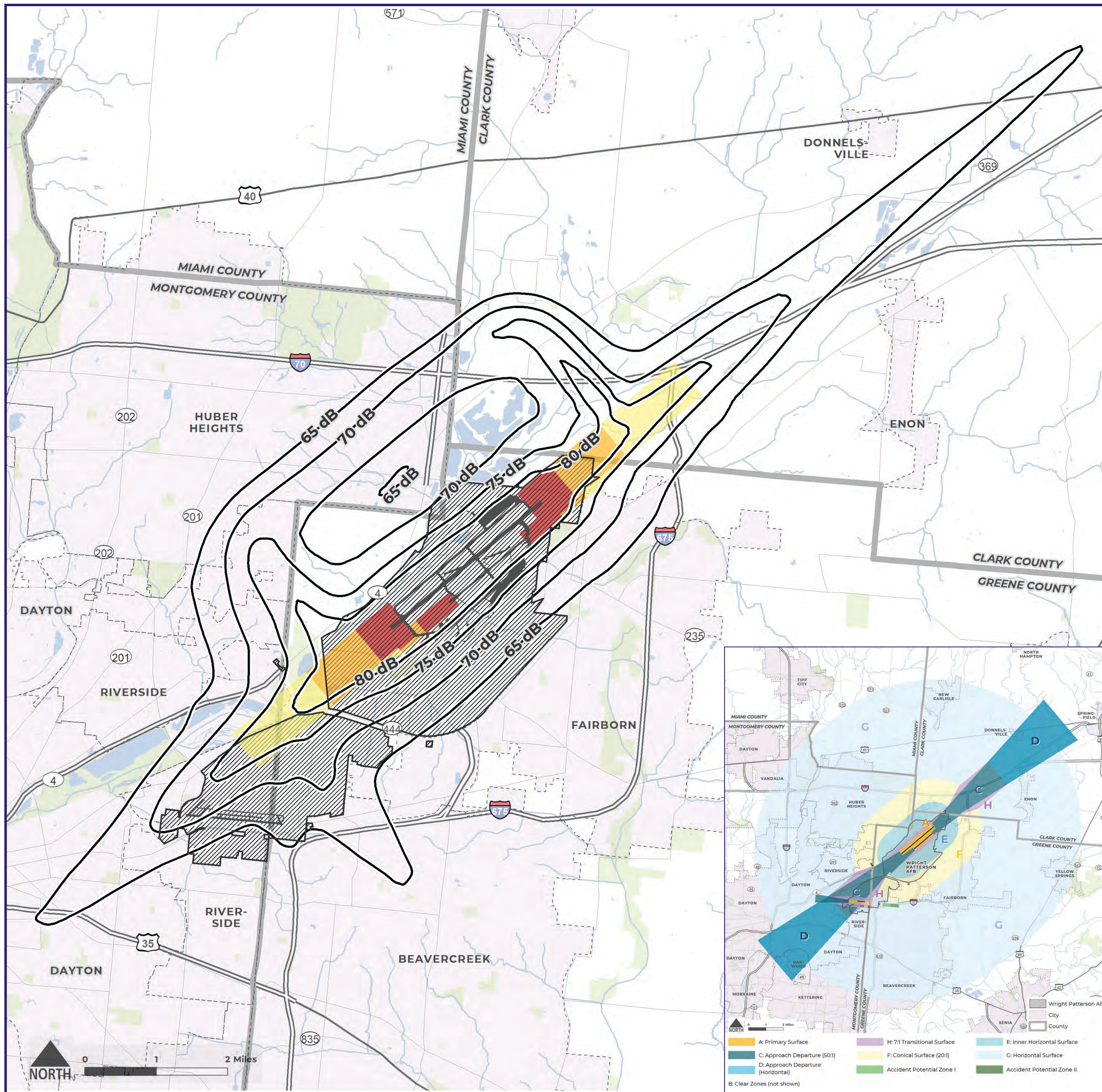
U.S. AIR FORCE

AIR INSTALLATIONS COMPATIBLE USE ZONES (AICUZ) BROCHURE

FOR  
WRIGHT PATTERSON  
AIR FORCE BASE  
(WPAFB), OHIO

2022





- Clear Zone (CZ)
- Accident Potential Zone I (APZ I)
- Accident Potential Zone II (APZ II)

2022 AICUZ DNL Noise Contours

- Wright Patterson AFB
- City
- County

## WPAFB COMPOSITE AICUZ MAP