# Wright-Patterson AFB Compatibility Use Plan


*This plan was prepared under contract with the Wright-Patterson Regional Council of Governments, with financial support from the Office of Local Defense Community Cooperation (OLDCC), Department of Defense. The content reflects the views of the key CUP partners involved in the development of the plan and does not necessarily reflect the views of the OLDCC.*



# Compatibility Use Plan

## Final

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Prepared for:

WRIGHT-PATTERSON COUNCIL OF GOVERNMENTS

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## Wright-Patterson CUP Consultant Team

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# Acronyms

## A

| | |
|---|---|
| ADIZ | AIR DEFENSE IDENTIFICATION ZONE |
| AFB | AIR FORCE BASE |
| AFI | AIR FORCE INSTRUCTION |
| AFICC | AIR FORCE INSTALLATION CONTRACTING CENTER |
| AFIT | AIR FORCE INSTITUE OF TECHNOLOGY |
| AFLCMC | AIR FORCE LIFE CYCLE MANAGEMENT CENTER |
| AFM | AIR FORCE MANUAL |
| AFMC | AIR FORCE MATERIAL COMMAND |
| AFRC | AIR FORCE RESERVE COMMAND |
| AFRL | AIR FORCE RESEARCH LABORATORY |
| AGL | ABOVE GROUND LEVEL |
| AICUZ | AIR INSTALLATIONS COMPATIBLE USE ZONES |
| AMC | AIR MATERIAL COMMAND |
| ANG | AIR NATIONAL GUARD |
| APZ | ACCIDENT POTENTIAL ZONE |
| AT/FP | ANTI-TERRORISM/ FORCE PROTECTION |
| ATC | AIR TRAFFIC CONTROL |
| AQ | AIR QUALITY |

## B

| | |
|---|---|
| BASH | BIRD/WILDLIFE AIRCRAFT STRIKE HAZARD |
| BIO | BIOLOGICAL RESOURCES |
| BLM | BUREAU OF LAND MANAGEMENT |

## C

| | |
|---|---|
| CAA | CLEAN AIR ACT |
| CERCLA | COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT |
| CFA | CONTROLLED FIRING AREA |
| CFC | COMBINED FEDERAL CAMPAIGN |
| CFR | CODE OF FEDERAL REGULATIONS |
| COM | COMMUNICATION/ COORDINATION |
| CR | CULTURAL RESOURCES |
| CUP | COMPATIBILITY USE PLAN |
| CWA | CLEAN WATER ACT |
| CZ | CLEAR ZONE |

## D

| | |
|---|---|
| DAY | DAYTON INTERNATIONAL AIRPORT |
| DB | DECIBEL |
| DBA | A-WEIGHTED DECIBEL |
| DNL | DAY-NIGHT AVERAGE SOUND LEVEL |
| DOD | DEPARTMENT OF DEFENSE |
| DODI | DEPARTMENT OF DEFENSE INSTRUCTION |
| DOE | DEPARTMENT OF ENERGY |
| DSS | DUST/SMOKE/STEAM |
| DVFR | DEFENSE VISUAL FLIGHT RULES |

## E

| | |
|---|---|
| ED | ENERGY DEVELOPMENT |
| EERE | OFFICE OF ENERGY AND RENEWABLE ENERGY |
| EPA | ENVIRONMENTAL PROTECTION AGENCY |

## F

| | |
|---|---|
| FAA | FEDERAL AVIATION ADMINISTRATION |
| FCC | FEDERAL COMMUNICATIONS COMMISSION |
| FLPMA | FEDERAL LAND POLICY AND MANAGEMENT ACT |
| FLUM | FUTURE LAND USE MAP |
| FP | FORCE PROTECTION |
| FPCON | FORCE PROTECTION CONDITION |
| FSC | FREQUENCY SPECTRUM CAPACITY |
| FSI | FREQUENCY SPECTRUM IMPEDANCE/INTERFERENCE |

## H

| | |
|---|---|
| HA | HOUSING AVAILABILITY |
| HMA | HOUSING MARKET AREA |
| HPW | HUMAN PERFORMANCE WING |
| HUD | HOUSING AND URBAN DEVELOPMENT |

## I

| | |
|---|---|
| IE | INFRASTRUCTURE EXTENSIONS |
| IFR | INSTRUMENT FLIGHT RULES |
| INRMP | INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN |
| ISR | INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE |

## L

| | |
|---|---|
| LAANC | LOW ALTITUDE AUTHORIZATION AND NOTIFICATION CAPABILITY |
| LAA | LOCAL AIRPORT ADVISORY |
| LAS | LAND/AIRSPACE COMPETITION |
| LEG | LEGISLATIVE INITIATIES |
| LG | LIGHT AND GLARE |
| LU | LAND USE |

## M

| | |
|---|---|
| MOA | MILITARY OPERATING AREA |
| MSA | METROPOLITAN STATISTICAL AREA |
| MTR | MILITARY TRAINING ROUTE |
| MVRPC | MIAMI VALLEY REGIONAL PLANNING COMMISSION |

## N

| | |
|---|---|
| NAAQS | NATIONAL AMBIENT AIR QUALITY STANDARDS |
| NEPA | NATIONAL ENVIRONMENTAL POLICY ACT |
| NHPA | NATIONAL HISTORIC PRESERVATION ACT |
| NMFS | NATIONAL MARINE FISHERIES SERVICE |
| NOI | NOISE |
| NPDES | NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM |
| NSA | NATIONAL SECURITY AREA |

## O

| | |
|---|---|
| OE/AAA | OBSTRUCTION EVALUATION/AIRPORT AIRSPACE ANALYSIS |
| OLDCC | OFFICE OF LOCAL DEFENSE COMMUNITY COOPERATION |
| OSD | OFFICE OF THE SECRETARY OF DEFENSE |

## P

| | |
|---|---|
| PC | POLICY COMMITTEE |
| PS | PUBLIC SERVICES |
| PT | PUBLIC TRESPASSING |

## R

| | |
|---|---|
| RC | ROADWAY CAPACITY |
| RE | RESILIENCY |
| REPI | READINESS AND ENVIRONMENTAL PROTECTION INTEGRATION |

## S

| | |
|---|---|
| SA | SAFETY |
| SDWA | SAFE DRINKING WATER ACT |
| SNR | SCARCE NATURAL RESOURCES |
| STEM | SCIENCE, TECHNOLOGY, ENGINEERING, MATH |
| SUA | SPECIAL USE AIRSPACE |

## T

| | |
|---|---|
| T&E | THREATENED AND ENDANGERED |
| TC | TECHNICAL COMMITTEE |
| TFR | TEMPORARY FLIGHT RESTRICTION |
| TRSA | TERMINAL RADAR SERVICE AREA |

## U

| | |
|---|---|
| UAS | UNMANNED AERIAL SYSTEM |
| UFC | UNITED FACILITIES CRITERIA |
| US | UNITED STATES |
| USAHAS | UNITED STATES AVIAN HAZARD ADVISORY SYSTEM |
| USFWS | UNITED STATES FISH AND WILDLIFE SERVICE |

## V

| | |
|---|---|
| V | VIBRATION |
| VFR | VISUAL FLIGHT RULES |
| VO | VERTICAL OBSTRUCTION |

## W

| | |
|---|---|
| WPAFB | WRIGHT-PATTERSON AIR FORCE BASE |
| WQQ | WATER QUALITY/QUANTITY |

# Table of Contents

## Tables

## Figures


# 1 Introduction

Military installations generate thousands of jobs and billions of dollars in regional economic impact nationwide. The sustainment of these military installations and associated missions and facilities underpin the vitality of local communities, economies, and industries.

Ensuring compatibility between military bases and surrounding communities through partnership promotes military mission sustainment and continued presence in the local economy.

The WPAFB CUP proactively identifies existing and potential compatibility findings, provides solutions to protect military capabilities, and promotes compatible economic growth through strengthening coordination efforts between the installation and neighboring communities.

# 1.1 Why a Compatibility Use Plan?

Existing levels and types of encroachment (how an installation impacts a community and vice versa) are key factors evaluated by the Department of Defense (DoD) and other federal agencies when considering the strategic stationing of future missions or the realignment of military assets from one installation to another.

**Compatibility, in relation to military readiness, can be defined as the balance or compromise between community needs and interests and military needs and interests.**

To protect the missions of military facilities, the health of regional economies, and industries reliant upon those facilities and economies, encroachment must be addressed through mutual information sharing, collaborative effort, and joint planning among installations and local communities. To this end, the DoD OLDCC maintains the Installation Resilience program. The program supports and funds defense communities nationwide to identify and assess encroachment concerns around military installations and develop strategies and tools to address these concerns. Tools such as enhanced communication processes, strategic partnerships, and local policies and ordinance updates can facilitate regional compatibility with a continued military presence. Once the WPAFB CUP is completed, the communities, installation, and other partners can work together to implement the strategies found **within the Implementation Plan** of this CUP to promote mission sustainability and the military readiness of WPAFB.

The WPAFB CUP is a community-led project funded through the OLDCC. It is a collaborative effort between the community, state and federal agencies, and other interested stakeholders to develop appropriate actions to address compatibility and shared resources in the region. The CUP is a collection of information designed to help make more informed decisions and provides tailored recommendations for each stakeholder. These recommendations, or strategies, are developed to mitigate and prevent future incompatibilities while strengthening the coordination between WPAFB and the neighboring communities impacted by or that impact the base.

The CUP provides a set of recommended strategies for local jurisdictions, agencies, and organizations in the CUP Project Area to guide future compatibility efforts. However, the CUP itself is not an adopted plan. Acceptance of the Plan by its development partners will confirm collective support for the identified implementation efforts. For instance, local jurisdictions may use the recommended strategies to guide future amendments to general plans and zoning ordinances and assist in reviewing development proposals in the CUP Project Area. WPAFB can use the CUP to guide its interaction with local jurisdictions on future projects and to manage internal planning processes with a compatibility-based approach.

## 1.2 What is the Wright-Patterson AFB Compatibility Use Plan

The WPAFB CUP is a planning tool developed through the collaborative efforts of local, regional, and state stakeholders to encourage compatible growth in Clark, Greene, Miami, and Montgomery Counties around the installation. The WPAFB CUP also seeks to mitigate existing and future land use conflicts and resource competition between the installation and its surrounding communities. The stakeholders involved include local, state, and federal government officials, government and nongovernmental agencies and organizations, residents, local property and business owners, and the military. Chapter 2 discusses the WPAFB CUP stakeholders and partners in more detail.

The CUP encourages each partner to work collectively to identify, reduce, and prevent encroachment between the current and future military missions at WPAFB and the growth and development of neighboring communities. The CUP seeks to foster and promote a set of agreed-upon recommendations, or implementation strategies, that can be executed by the military, partners, and stakeholders to achieve the following:

- Compatible development
- Greater communication
- Improved relations between WPAFB and neighboring communities, now and in the future

This Plan is an important tool for **preserving long-term compatibility** between WPAFB and the surrounding areas, where it will benefit both the installation and the surrounding region by:

- **Integrating** surrounding local jurisdiction growth policy plans with WPAFB's plans,
- **Promoting** comprehensive community planning and **guiding** compatible community growth and development through enhancing the cooperative spirit between WPAFB and the community,
- **Protecting** the health and safety of residents and workers and the viability of current and future missions by preserving long-term land use compatibility between WPAFB and surrounding communities, and
- **Supporting** and **enhancing** regional economic vitality and environmental health.

This CUP was funded through a grant from the DoD Office of OLDCC with additional contributions from the Wright-Patterson Regional Council of Governments (WPRCOG).

While the OLDCC was the primary funding source, the WPAFB CUP content was produced by and for the local stakeholders. The WPRCOG served as the managing agency for the project.

## CUP Project Area

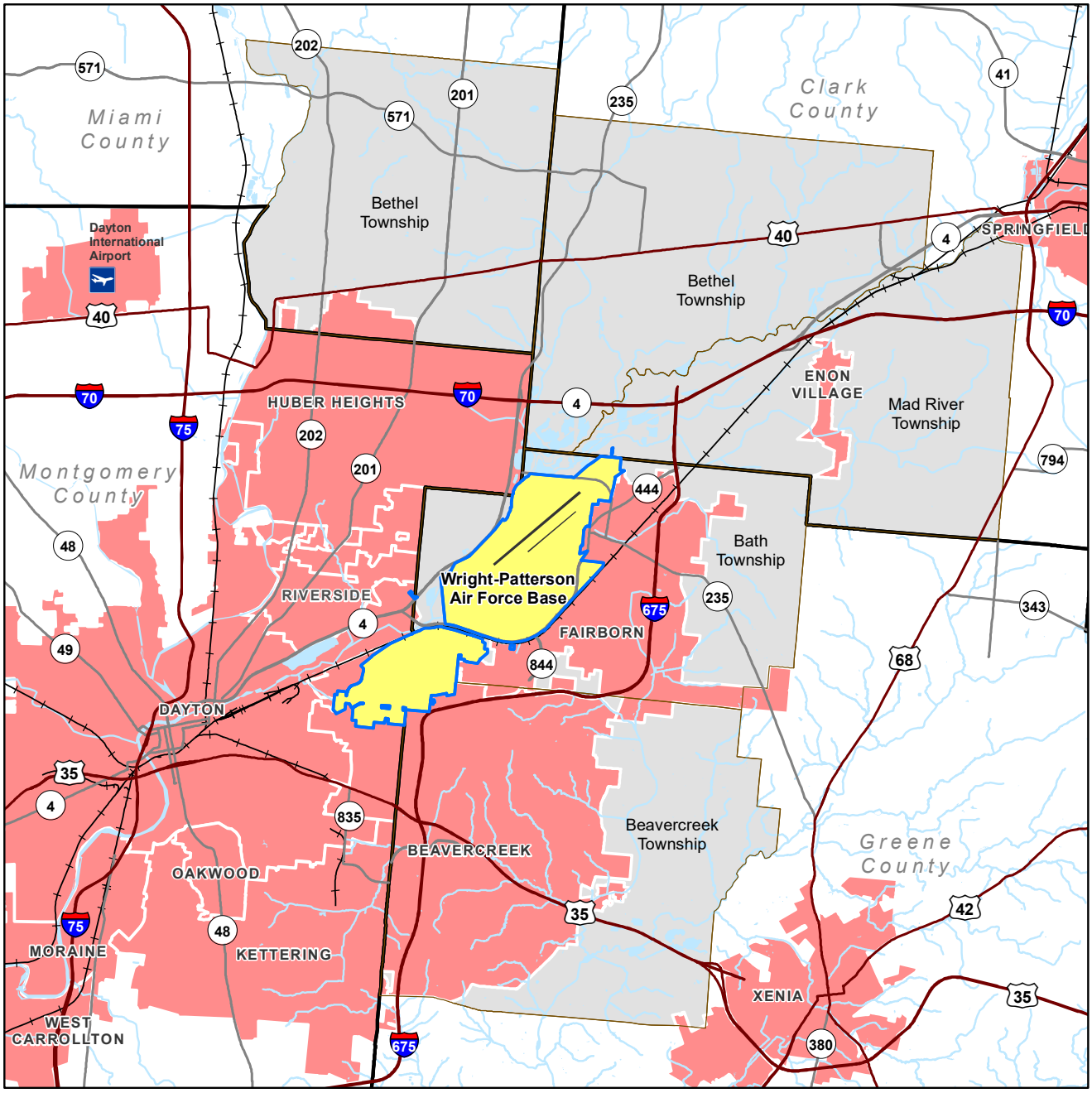
The CUP Project Area, shown in Figure 1-1, primarily focuses on WPAFB and the communities around it within the imaginary surfaces around the base. This includes the Wright-Patterson Regional Council of Governments and all land, water, and airspace surrounding the installation complex, such as the jurisdictions within Clark, Greene, Miami, and Montgomery Counties.

WPAFB is situated in the southwestern part of Ohio. It is located approximately 10 miles northeast of Dayton, Ohio's fourth-largest city, and about 60 miles west of the state capital, Columbus. The base encompasses parts of Greene and Montgomery Counties.

A mix of urban, suburban, and rural landscapes characterizes the land use around WPAFB. As the nearest major city, Dayton offers a range of amenities, services, and cultural attractions. The region is known for its diverse economy, with industries ranging from manufacturing and healthcare to research and development.

WPAFB is a significant regional presence and is crucial to the local economy. The base is one of the largest and most prominent military installations in the United States, serving as the headquarters for the Air Force Materiel Command and housing various other military units and research facilities.

The surrounding area features various communities and residential neighborhoods, and the region is well-connected by roadways, including major highways and interstates. WPAFB consists of Areas A and B. The installation is north of Beavercreek, northeast of Riverside, east of Dayton, southeast of Huber Heights, and west of Fairborn. The base's safety zones extend into rural Clark County.




**Legend**

- Wright-Patterson AFB
- Runway
- City Boundary
- Township
- County Boundary
- Water Body
- Interstate/US Highway
- State Route
- Railroad

Matrix

0 1 2 4 Miles

**Figure 1-1 Wright-Patterson Air Force Base Study Area**

## CUP Goals and Objectives

The primary goal of the CUP was to gather and evaluate information to reduce potential future land use and resource conflicts and enhance environmental preservation while accommodating new compatible growth and economic development. The goals include:

- An assessment of existing land use, potential growth areas, and economic development opportunities;
- Information to assist surrounding communities in making informed decisions regarding compatibility; and
- Recommended strategies for each compatibility finding to promote compatible land use planning around WPAFB and within the surrounding communities.

Three objectives are instrumental in achieving the CUP goals:

**Understanding** — Bring together community and military representatives to discuss compatibility issues in an open forum that considers community and military perspectives and needs. Understanding was facilitated through a cohesive education and outreach program that increased public awareness regarding land use planning and provided opportunities for input.

**Collaboration** — Encourage cooperative, coordinated land use and resource planning among the military and surrounding communities so that incompatible community growth and development can be avoided and ways of reducing operational impacts on lands in the CUP Project Area can be identified.

**Actions** — Provide a set of mutually supported tools, activities, and procedures through which local jurisdictions, agencies, the military, and other stakeholders can implement appropriate recommendations developed during the CUP.

# 1.3 The Purpose of Compatible Land Use Planning

A physical boundary separates WPAFB and the nearby communities, yet they share natural and man-made resources such as land, water, airspace, and infrastructure such as transportation networks and facilities. Because of these shared resources, the activities or actions of one entity can unintentionally impact another, resulting in conflicts — despite the many positive interactions among local jurisdictions, agencies, and the military. As communities develop and expand in response to growth and market demands, there is potential for incompatible development to be located closer to WPAFB's training and operational areas. New development not properly evaluated for compatibility can generate new or exacerbate existing land use conflicts and other compatibility issues that impact the sustainability of military activities and readiness. Therefore, addressing encroachment is one of the military's greatest operational challenges nationwide.

Collaboration among military installations, local communities, agencies, and other stakeholders is integral to protecting the long-term viability of existing and future military missions. WPAFB, WPRCOG, local communities, agencies, and other stakeholders should collaborate to protect the long-term viability of existing and future military missions. Working together also enhances the health of local and regional economies and may prevent or mitigate incompatible uses that arise, which impact growth and vitality. In recognition of the symbiotic relationships that allow installations and adjacent communities to thrive, this CUP focused on assessment, education, and action.

## What is Compatibility Planning?

Compatibility planning entails creating and promoting a collaborative environment in which community and military entities communicate and coordinate to identify compatibility concerns and mutually supportive actions that will allow both parties to achieve their objectives once implemented.

## Assessment Factors

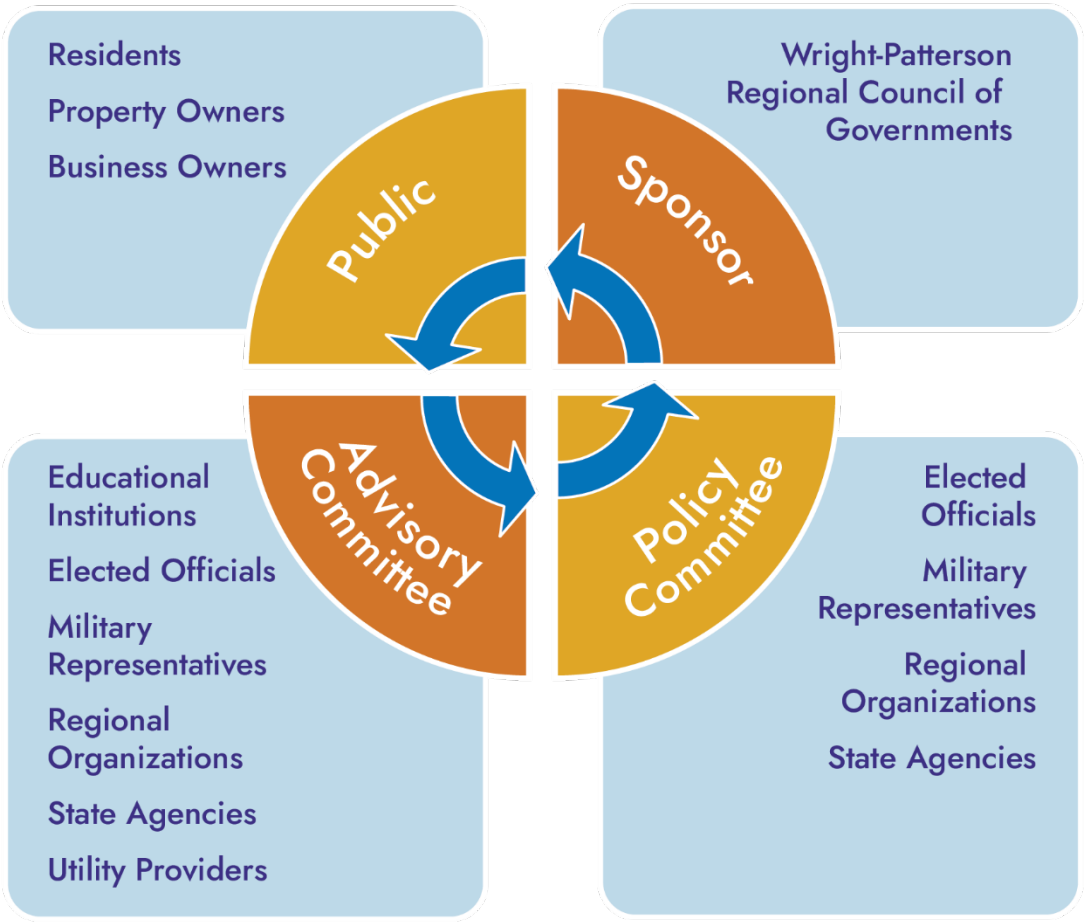
The WPAFB CUP assessed 25 compatibility categories to determine where there are compatibility concerns within each factor group. Community growth, quality of life, military operations, and economic drivers were all considered during the assessment process. This CUP assessed changes in the CUP Project Area since the 1997 Joint Land Use Study. These include but are not limited to:

- Community Concerns,
- Economic Trends and Regional Growth,
- New Technology and Weapon Systems, and
- Potential Threats to the Military Mission.

## 1.4 Partners

Involving the stakeholders and partners at the beginning of the planning process was instrumental in identifying compatibility findings of concern throughout the Project Area. These partners embarked on a collaborative process to create a locally relevant study that built consensus and obtained support from the stakeholders. Identified findings can often be resolved by collaboratively developing mutually beneficial strategies.

The stakeholders included the following:




## Stakeholder and Partner Participation

Stakeholders were involved throughout the development of the WPAFB CUP. Each stakeholder had the opportunity to participate in the development and review of the Plan by visiting the virtual open house, attending public workshops, utilizing the interactive website, and taking part in the review and comment phase of the Draft CUP. Multiple public meetings were held to increase understanding of community concerns and issues with military operations, location, and the use of shared resources.

## 1.5 How to Use this Compatibility Use Plan

The WPAFB CUP has seven chapters. These are designed to support residents, stakeholders, and communities in understanding WPAFB and vice versa. The CUP, as used by various stakeholders, may serve different purposes. However, the core of the Plan remains the same – to inform. Decision and policymakers may use the Plan to access available strategies and solutions to achieve compatible development within the CUP Project Area. The Plan's chapters, excluding this chapter, provide additional information on the following:

- Chapter 2 – Stakeholder Engagement – details the stakeholders, engagements, and interactions throughout the project's life.
- Chapter 3 – Military Profile – provides an overview of the economic impact, contributions, and military mission sets occurring within the CUP Project Area.
- Chapter 4 – Community Profile – documents the various jurisdictions, communities, and resources within the CUP Project Area that contribute to the region's diversity.
- Chapter 5 – Tools – highlights local, regional, state, and federal programs, policies, and statutes that provide grants, guidance, and support opportunities to develop compatible use partnerships in and beyond, if necessary, the CUP Project Area.
- Chapter 6 – Compatibility Assessment – presents the various compatibility findings within the CUP Project Area, identified through interviews and analysis conducted by the Project Team, and provides a compatibility assessment to promote awareness to community members, elected officials, and military leaders of solutions that involve successful compatible use strategies.
- Chapter 7 – Implementation Strategies – outlines recommendations and strategies designed to mitigate existing land use or compatibility findings between WPAFB and surrounding communities and to promote compatibility with the military mission as local growth and development continue.

## Process and Timeline

Several steps were involved in the project's development, as outlined below. The CUP process included a stakeholder and public outreach program that provided various opportunities for interested parties to contribute.


# 1.6 Next Steps: Implementation Working Group

The CUP will succeed if the recommendations are incorporated into future implementation activities. A Wright-Patterson CUP Partnership Committee can be established after completing the CUP as part of the implementation phase. The working group, or Partnership Committee, should contain representatives from each stakeholder participating in the CUP, with additional members included, as necessary, to address future issues or concerns.

The Implementation Plan allows local government leaders, land and resource management agencies, and military installations to consider each strategy part of existing programs as they evolve. Enhancing existing communication processes, establishing new processes and procedures, amending zoning tools, and updating long-range planning policies are some of the most cost-effective ways to ensure compatible development in the long term.

The implementation phase should discuss and develop mutually beneficial opportunities and partnerships beyond the CUP and the targeted strategies found within the Implementation Plan. The WPAFB CUP is a living document, so specific strategies may need revision as the local situation and applicable laws evolve. For more information on the Implementation Plan, see Chapter 7.


# 2 Stakeholder Engagement

This chapter describes the stakeholder and public engagement efforts that occurred throughout the development of the Wright-Patterson AFB Compatibility Use Plan and how the input was used to identify compatibility issues and strategies to address them.

# 2.1 Stakeholders

## Stakeholder Identification

An early step in any study is the identification of stakeholders. Involving stakeholders at the beginning of the CUP process was instrumental in identifying compatibility issues that needed to be addressed and resolved through the collaborative development of mutually beneficial strategies. Stakeholders included individuals, groups, organizations, and government entities interested in, affected by, or affecting compatibility issues and the outcome of the CUP. Stakeholders identified for the WPAFB CUP are listed in Table 2-1 and included, but were not limited to, the following:

- Local jurisdictions
- Military installations
- Local, regional, state, and federal planning, regulatory, and resource management agencies
- Nongovernmental organizations
- Other special interest groups
- Business and commercial property owners and all residents

**Table 2-1** Wright-Patterson AFB CUP Stakeholders

| Public | |
|---|---|
| Residents | Neighborhood Associations |
| Property Owners | Business Owners |
| Media Outlets | |
| **Cities and Townships** | |
| Bath Township | Beavercreek Township |
| Bethel Township | Mad River Township |
| City of Beavercreek | City of Dayton |
| City of Fairborn | City of Huber Heights |
| City of Riverside | Enon Village |
| **Counties** | |
| Clark County | Greene County |
| Montgomery County | |

## Stakeholder Interviews

Stakeholder interviews allow representatives of organizations to learn about the CUP and provide input on its development. The CUP interviews occurred between February and March 2023 and were conducted in person and virtually.

One-on-one interviews allowed for more private, in-depth conversations than was possible in larger group settings and created an environment where people could openly discuss compatibility issues and concerns. The interview process allowed the Project Team to clarify project components of specific concern to stakeholders, point to where interests either align or could lead to conflict, and identify opportunities for compromise and mutually beneficial solutions. The process was further integral to data collection because it helped identify all available data and reports, supplementing formal information requests.

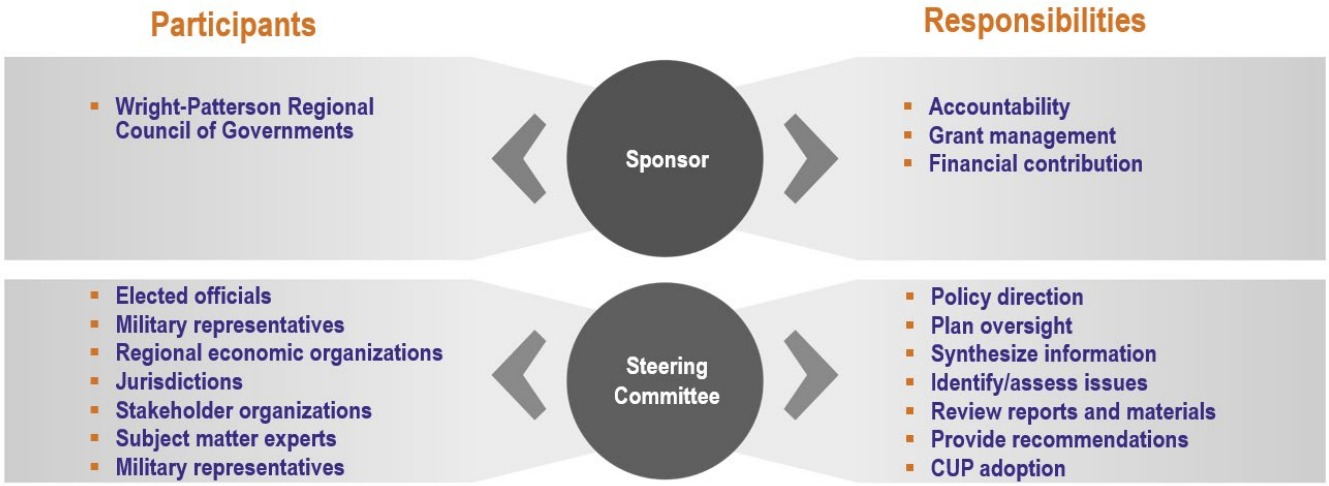
The interviews ultimately assisted the study in five important ways:

- Expanded stakeholder engagement
- Facilitated and enhanced stakeholder collaboration
- Enhanced communication between the Project Team, community leaders, and stakeholders
- Facilitated identification of compatibility issues for further assessment by the working groups
- Increased stakeholder understanding of compatibility issues and potential solutions

The interviews identified issues related to communication, land use, safety, and other variables.

## 2.2 Steering Committee

The CUP was guided by one committee, the Steering Committee (SC). The SC included stakeholders with diverse backgrounds and interests and provided feedback, suggestions, and guidance. These working group committee meetings were important in developing and maintaining relationships between key stakeholders, interested community members, and the CUP Project Team.




*Steering Committee Roles and Responsibilities*

The SC guided the CUP process and included a diverse group of stakeholders tasked with providing feedback, suggestions, and guidance to the CUP consultant, Matrix Design Group (Matrix). The SC members served as liaisons to their respective groups and communities. Committee member involvement was critical to developing and maintaining relationships among key stakeholders, interested community members, and Matrix. All members were notified of committee meeting times, locations, agendas, and upcoming public engagement opportunities.

The SC provided essential technical expertise, feedback, and real-world experience to ensure issues and recommendations with technical components are accurate, feasible, and practical for the various stakeholder groups. The SC membership included local jurisdictions, WPAFB's technical staff, and other local subject matter experts, as needed.

The SC provided technical expertise through committee meetings, correspondence, and reviewing draft materials, including the Draft CUP. SC members also liaised with their organizations and relayed information developed throughout the CUP process.

**Table 2-2** Steering Committee Composition

| Jurisdictions | Agencies & Organizations | Military |
|---|---|---|
| ■ City of Beavercreek<br>■ City of Dayton<br>■ City of Fairborn<br>■ City of Huber Heights<br>■ City of Riverside<br>■ Bath Township | ■ Dayton Development Coalition<br>■ Congressman Turner's Office<br>■ Miami Conservancy District<br>■ Miami Valley Regional Planning Commission<br>■ Natural Resources Defense Council<br>■ WPRCOG | ■ Wright-Patterson AFB |

# Committee Meetings

The Steering Committee meetings were held in person and virtually throughout the CUP process to ensure that issues were accurately identified and appropriately addressed through collaborative action.

## Meeting #1 – Project Kick-off – September 2022

The Steering Committee Project Kick-off Meeting was conducted in person on September 15, 2022. This meeting focused on providing an overview of the CUP project, process, and goals, identifying the roles and responsibilities of the project committees, confirming the CUP Project Area, and providing an opportunity for committee members to offer input on compatibility issues that should be addressed in the CUP.

## Meeting #2 – February 2023

Steering Committee Meeting #2 was in-person on February 15, 2023. This meeting focused on a project update for the CUP and MIR projects. At this meeting, gaps in the requested data were discussed, the WPRCOG and CUP websites were presented, and tools for CUP public engagement were introduced. Military footprints for noise and imaginary surfaces were also reviewed, followed by a discussion of the next steps.

## Meeting #3 – August 2023

Steering Committee Meeting #3 was conducted virtually as an update to the WPRCOG on August 10, 2023. This meeting provided an update on the CUP project, including an overview of the draft CUP report chapters, public engagement opportunities, and next steps for Steering Committee meetings and project milestones.

## Meeting #4 – October 2023

Steering Committee Meeting #4 was conducted in person on October 10, 2023. This meeting provided a project update, reviewed preliminary issues and strategies, and concluded with a discussion of the next steps.

### Meeting #5 – February 2024

Steering Committee Meeting #5 was conducted in person on February 20, 2024. This meeting focused on the CUP discussed the completed Committee Draft CUP, including issues and strategies. The meeting concluded with discussing the next steps in preparation for the Public Draft CUP.

### Meeting #6 – June 2024

Steering Committee Meeting #6 was held in person on June 3, 2024. At this meeting, the Public Draft CUP was presented, and opportunities for input were provided during the review period.

### Meeting #7 – August 2024

Matrix virtually participated in Steering Committee Meeting #7 on August 10, 2024. A CUP update was provided at this meeting, and the airport zoning regulations were discussed.

### Meeting #8 – November 2024

Steering Committee Meeting #8 was conducted in person on October 22, 2024. The final Compatibility Use Plan (CUP) project update was discussed at this meeting, highlighting significant progress and next steps. The CUP public review period concluded with no comments received, and the final CUP, along with an executive summary and website updates, is set for completion by November 29.

## 2.3 Public Engagement

### Public Engagement Plan

The Public Engagement Plan was developed at the study's outset to guide stakeholder and public engagement efforts for the WPAFB CUP. Public engagement was critical for developing an effective and mutually beneficial Plan that addressed military and community needs and interests.

The public participation strategy guided the engagement process with stakeholders and the public, providing them with project information and findings to obtain meaningful input throughout the project, thereby ensuring that the goals within the CUP could be met. The Public Engagement Plan included public engagement objectives, project stakeholders, working group members, methods of engagement, and the stakeholder engagement schedule. Much of the information in the public engagement strategy is included in the CUP.

### Public Meetings

Two public meetings were held at key project milestones and were widely publicized using various communication methods. Elected officials and public outreach offices from the WPAFB CUP partners, as well as stakeholders from the SC, were enlisted to help advertise the public meetings and promote the importance of participation through email, social media sites, and other forums. This approach capitalized on the CUP project contact list and the project stakeholders' existing contact lists to expand the reach of communication efforts.

## Public Open House #1 – February 2023

The first Public Meeting was conducted as an in-person open house in the City of Fairborn on February 15, 2023. At this meeting, the purpose and function of the CUP were explained, an overview of the military operations at WPAFB was provided, and opportunities for further participation were highlighted. The open house allowed attendees to learn about the CUP project, WPAFB's contribution and importance to the region, and regional community demographics and economics. The meeting included an in-person community questionnaire for participants to complete and large maps to interactively identify issues or concerns about WPAFB operations and the community.

## Public Meeting #2 – October 2024

The second public meeting for the Compatibility Use Plan (CUP), held on October 22, 2024, provided an overview of the project's background, objectives, and benefits while addressing key compatibility issues and proposed strategies. Participants reviewed updates to the 1996 Joint Land Use Study (JLUS), including changes in Air Force regulations, land use, and community growth. The meeting covered compatibility issues such as noise, land and airspace competition, safety, water quality, roadway capacity, and communication coordination, alongside strategies to address these challenges. Public feedback was encouraged through various channels, with the next steps focusing on implementing the plan's recommendations and fostering partnerships among stakeholders to ensure alignment with Wright-Patterson Air Force Base's operational goals and regional development.

# Getting the Word Out

The WPAFB CUP was promoted and supported through a dedicated, branded project website where interested parties could review and download project information, public meeting information and materials, and project deliverables. The website utilized interactive features that allowed community members to sign up for email updates, provide input, and comment on the Draft CUP.

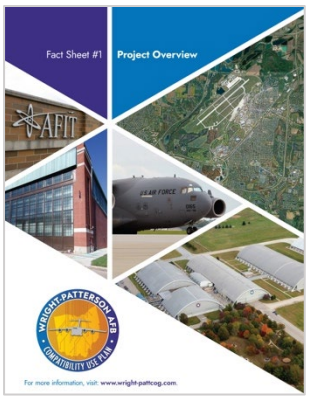
The website also included an interactive map to identify location-specific issues and opportunities related to military activities and compatibility through IDPlaces, a dynamic interactive mapping tool. Throughout the project, eight comments were provided through IDPlaces, expressing concerns about water quality, roadway congestion, and aircraft noise.

The cornerstone of effective public outreach is notifying community members about opportunities to share their thoughts and learn more about the project and identified issues. Notifications about public meetings and the Draft CUP primarily occurred through eblasts and social media posts.

Two informational brochures were developed and distributed to the WPAFB CUP working groups and the public during the CUP process. These brochures were made available via email, on the project website, and at public meetings.

## Project Overview

The Project Overview describes the purpose, goals, and objectives of the WPAFB CUP and the methods through which input was provided during the Plan development phase. This sheet also summarizes the 25 standard compatibility factors or general types of compatibility findings. These factors are the initial framework to provide stakeholders with a "starting point" and a comprehensive examination of all potential conflict areas. While some factors proved irrelevant to the CUP, using this framework to help identify a broad spectrum of issues ensured the CUP was sufficiently comprehensive in its approach. The Project Overview was used to brief stakeholders who were participating in interviews and during the first public meeting.




## Executive Summary

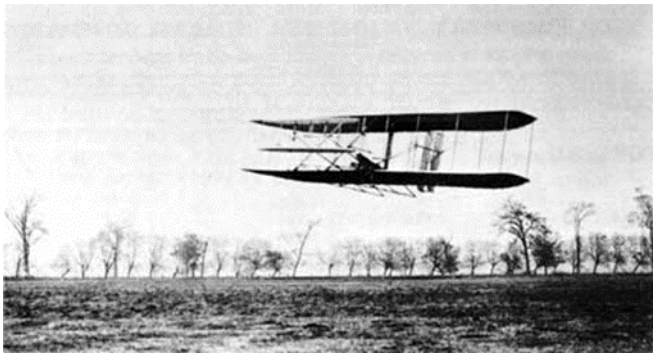
The final fact sheet summarizes the CUP and key strategies. This brochure can be used as a handout during meetings to provide an overview of the CUP and key strategy recommendations. The information in the executive summary can be distributed through the media to increase awareness of and support for the CUP and follow-on actions during the implementation phase. This brochure was provided with the final CUP.


# 3 Military Profile

This chapter provides an overview of the physical setting, military history, and current operations at the military installation in the CUP Project Area. Identifying and describing the various activities performed at WPAFB provides valuable insight into the importance of the military as both a strong community partner and a national strategic asset. This information will help stakeholders make informed decisions regarding future development and economic growth in their communities, which may be influenced by installation activities due to their relative proximity. These decisions potentially impact the continued existence and future role of the installation.

# 3.1 History of Military Activities at Wright-Patterson AFB

WPAFB has a rich aviation and military history marked by several significant milestones in aeronautics. Its origins trace back to World War I (WWI), when it was involved in aviation before becoming a military installation. Today, WPAFB continues its legacy of leadership in military aviation development, a tradition that began with Wilbur and Orville Wright, pioneers of the aerospace age.

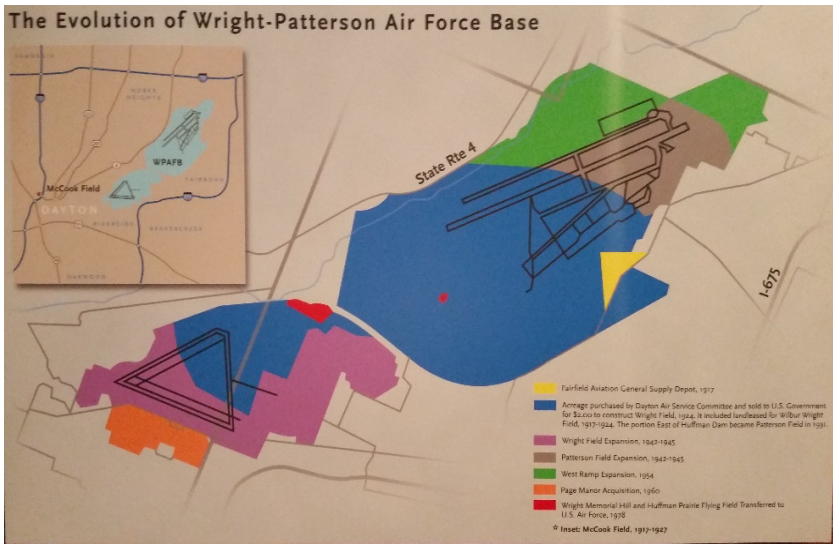


*Orville Wright on November 16, 1904 — flight 85 at Huffman*

In 1903, following a successful test flight in Kitty Hawk, North Carolina, the Wright brothers purchased an 84-acre plot in Dayton, Ohio, establishing the Huffman Prairie Flying Field, now a national park.

Huffman Field evolved into a research and development facility, flight test center, logistics depot, and training center. From 1910 to 1916, the Wright Company School of Aviation trained 119 pilots, including Army Lieutenant Henry "Hap" Arnold and Canadian ace Roy Brown, credited with downing the famous "Red Baron" during WWI.

In 1917, as the United States entered WWI, the War Department secured land leases and built three military installations: McCook Field, Wilbur Wright Field, and the Fairfield Aviation General Supply Depot. McCook Field was a temporary home for the Airplane Engineering Division, Wilbur Wright Field housed aviation schools, and the Supply Depot provided logistics support.




*National Park Service Marker showing historical growth at WPAFB*

After WWI, these sites consolidated, and in 1926, Wright Field became the headquarters of the Materiel Division. In 1931, a portion of Wright Field was renamed Patterson Field. These fields remained physically separate until after World War II (WWII) but shared missions.

During the 1930s, aeronautical engineering diversified and modernized aircraft. McCook Field focused on advanced airplane design. This effort led to the production of superior aircraft in WWII, contributing to U.S. air supremacy.

Significant advancements at WPAFB included liquid- and air-cooled engines, aircraft engine superchargers, controllable propellers, fuels, armament systems, flight instrumentation, parachutes, stealth technology, aerial photography equipment, and experimental aircraft.

When the United States entered WWII, Wright Field oversaw the wartime production of nearly 300,000 military aircraft, 802,161 engines, and 807,424 propellers. This mass production approach and accelerated flight testing reduced design-to-delivery time, ensuring air dominance over German forces during WWII and driving employment from 4,000 to over 50,000.

*C-54 supporting the Berlin Airlift*

The Supply Depot, with 500 employees in 1939, expanded to 19,500 at its peak during the war. Over 250 buildings were constructed from 1941 to 1944. Patterson Field played a crucial role as a wartime logistics center and supply hub, overseeing numerous storage and service depots and supporting the Allied effort.

Wright Field and Patterson Field officially merged to form Wright-Patterson AFB in 1948. During the Cold War, WPAFB supported efforts like the Berlin Blockade and Airlift by providing aircraft logistics support through HQ Air Materiel Command (AMC). This involved maintaining a supply chain of parts and equipment, arranging maintenance contracts, and supplying C-54 aircraft to Germany.

The Korean War brought an increased workload and a workforce expansion to WPAFB, resulting in traffic congestion in the surrounding community. AMC set acquisition targets, leading to the production and delivery of F-84 Thunderjets and F-86 Sabre aircraft. AMC continued to manage the logistics pipeline for supplies to the conflict zone. The base hospital also played a vital role in treating wounded soldiers and was designated a "special blood collection center" by the American Red Cross.

During the Vietnam War, WPAFB experienced job growth and construction activity. The base's laboratories contributed to aeronautical and logistical systems advancements for the military. Products like the AC-47 and AC-130 gunships; a mobile tactical air control system; the F-111, F-15, and A-10 aircraft; and others were produced. Research on aircraft like the XB-70 and B-1 was also conducted, accompanied by renovations and upgrades on the installation.

In the post-Cold War era, WPAFB continued to innovate and pioneer new technologies while upgrading tactical and strategic forces. The base provided logistical support worldwide and offered Air Force civilian and military personnel training. Research and development in hypersonic technologies became a focus.

In 1995, WPAFB hosted peace talks between the Balkan conflict parties, leading to the signing of the Dayton Peace Agreement. More recently, WPAFB participated in Operation Enduring Freedom and Operation Iraqi Freedom by providing manpower, weapon systems, technology, innovation, and ingenuity. To this day, WPAFB remains the logistical and training epicenter of the United States Air Force.

# 3.2 Military Economic Importance

The military significantly contributes to the economy in the CUP Project Area, with its impact felt through direct spending and the ripple effects of direct and indirect employment, leading to job creation. WPAFB, primarily situated in Fairborn, Ohio, but adjacent to several other cities, is the State's largest single-site employer. Per the *2021 Wright-Patterson Economic Impact Analysis*, there is a total of **53,350 personnel** including dependents at the installation. This total number is split between:

- 10,420 personnel classified as appropriated fund military,
- 14,738 personnel classified as appropriated fund civilians,
- 10,288 personnel classified as non-appropriated fund contract civilians and private businesses, and
- 17,904 military dependents.

## Economic Impact

According to the *Ohio Military & Federal Factbook 2021*, the military and federal government had a significant economic impact statewide, totaling nearly $69 billion, which accounted for 6% of Ohio's economy. Of this, direct military and federal spending amounted to $22.2 billion. Notably, the western region of Ohio saw a substantial influence, with nearly 15% of its total economy being driven by military and federal expenditures.

According to the *2021 Wright-Patterson Economic Impact Analysis*, within Ohio's overall economic landscape influenced by the military and federal government, Wright-Patterson made a significant mark with a total annual economic impact of approximately **$6.5 billion**. This impact was distributed across various areas, including:

- Annual payroll of around $3.4 billion,
- Yearly expenditures of about $1 billion, and
- Estimated annual value of jobs created totaling approximately $2.1 billion.

## Employment Impact

Due to the critical support required by WPAFB and the essential jobs needed to maintain mission readiness, numerous indirect positions have been generated. The *2021 Wright-Patterson Economic Impact Analysis* details both the total number of indirect jobs and their estimated annual value. Specifically, there are 4,272 indirect jobs stemming from the 10,420 active-duty base jobs, 23,139 indirect jobs linked to the 14,738 directly appropriated fund civilian base roles, and 16,152 indirect jobs associated with other civilian base positions. Altogether, these direct personnel base jobs create a total of **43,563 indirect jobs**, resulting in an estimated annual economic impact of approximately $2.1 billion.

## 3.3 Installation Overview

WPAFB, spanning 8,751 acres across Greene and Montgomery Counties, houses essential United States Air Force components. It is a hub for the Air Force Materiel Command (AFMC), responsible for developing and procuring new Air Force technology and equipment. Additionally, it is the headquarters for the Air Force's Life Cycle Management Center (AFLCMC), the Air Force Research Laboratory (AFRL), and the National Air and Space Intelligence Center.

The base accommodates 15 Air Force units and over 115 tenants and boasts two runways. Beyond its military functions, WPAFB is home to the National Museum of the United States Air Force, the world's largest military aviation museum, and the Air Force Institute of Technology (AFIT), which provides advanced education and research in technical fields.

This installation, shown on Figure 3-1, is vital to the U.S. Air Force's mission, advancing military technology and bolstering the nation's capabilities. Administratively, the base is divided into Area A and Area B, which are separated by State Route 444 (SR-444) and railroad tracks. Area A, the larger of the two, encompasses various planning districts, housing an active runway complex, warehouses, offices, industrial facilities, and flight line support. Across the highway, Area B comprises four districts – Wright Field, two districts dedicated to research facilities, and one district for privatized housing.

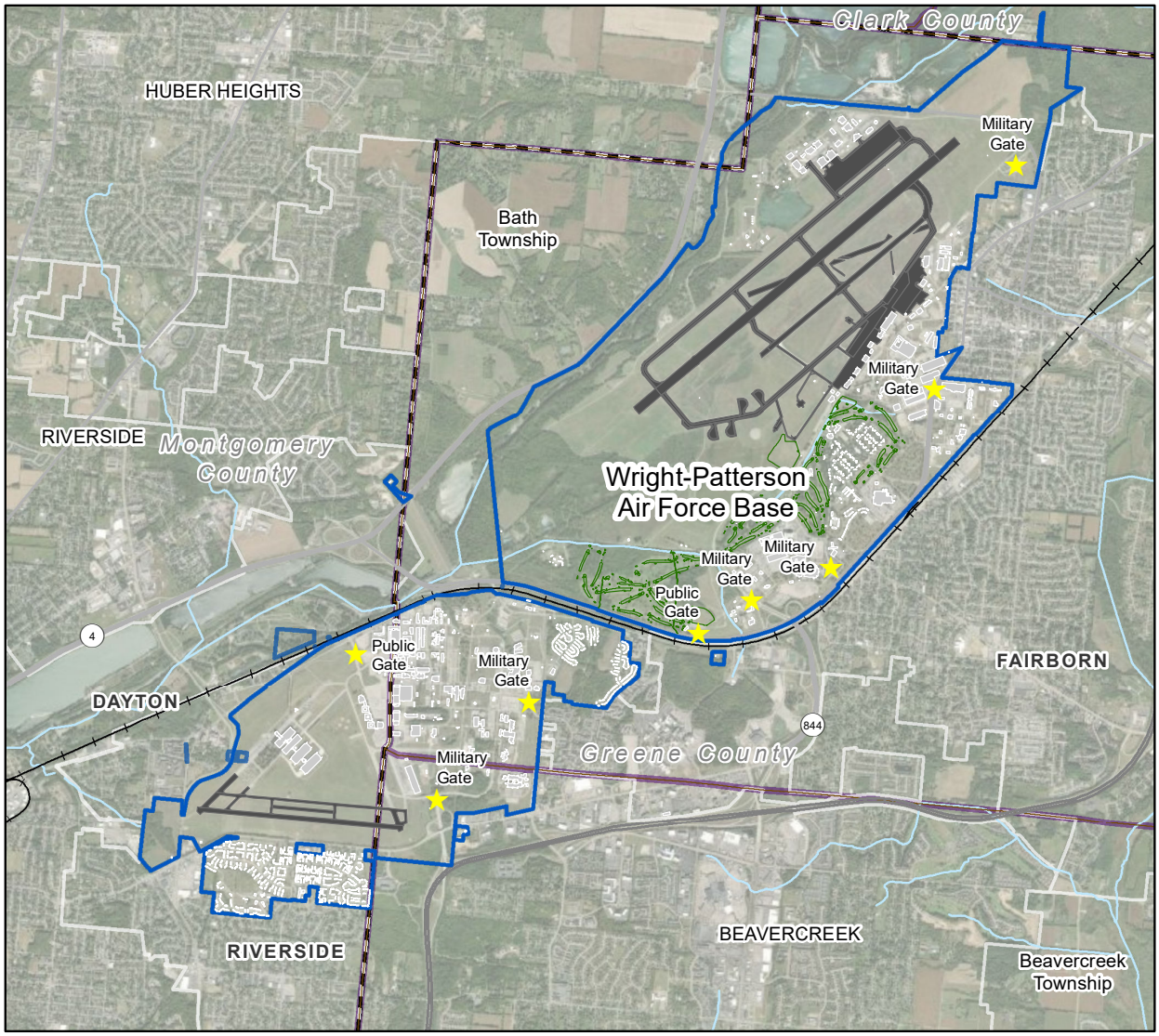
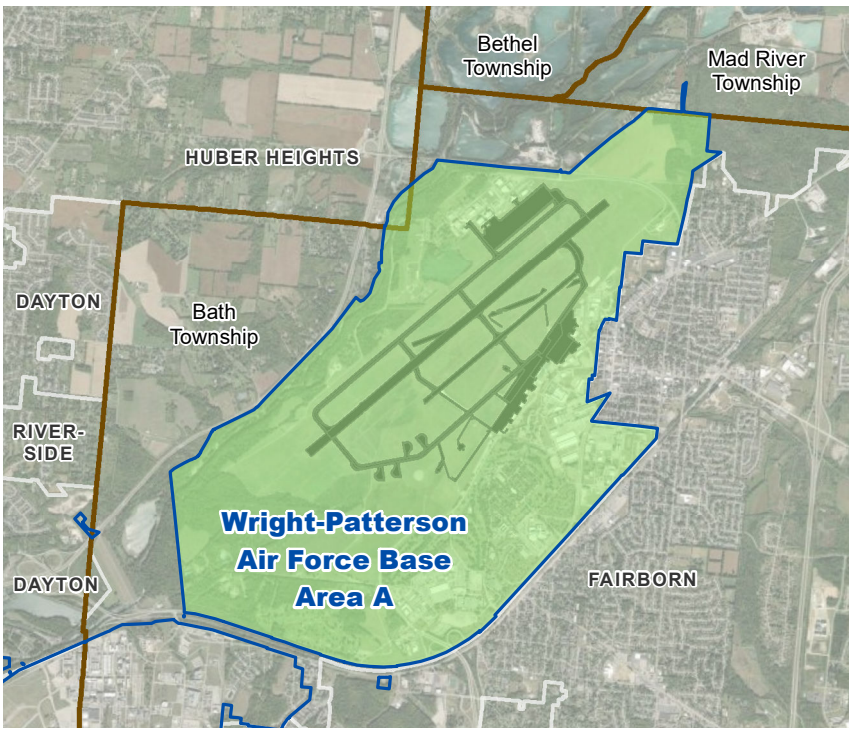



**Figure 3-1 Installation Setting**

## Area A

Area A serves as the primary section of the base and houses several significant units and activities:

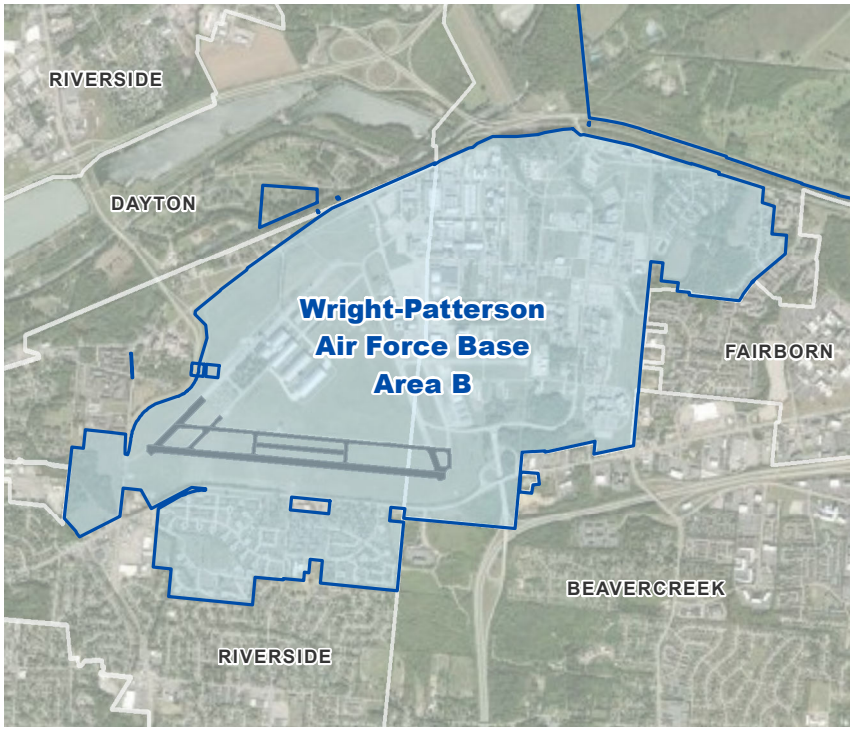



- **Air Force Materiel Command:** This command oversees the development and acquisition of new technology and equipment for the Air Force.
- **Base Support and Services:** Area A also houses essential support functions crucial for the base's operation, such as medical facilities, security forces, and base operations.
- **Logistics and Sustainment Organizations:** They include the AFLCMC, which manages the acquisition and sustainment of Air Force weapons systems, and the Air Force Installation and Mission Support Center (AFIMSC) Detachment 6, which offers support services to Air Force installations worldwide.

These key units and activities within Area A are integral to advancing the Air Force's mission and capabilities.

## Area B

Area B is instrumental in advancing aerospace technology and ensuring the Air Force's leadership in technological innovation. This area primarily focuses on researching, developing, and testing advanced technologies and weapons systems, contributing to modern warfare readiness. Key military activities in Area B include the following:




- **Aerospace Systems Directorate:** This research organization specializes in advancing aerospace technologies and systems, including hypersonics, autonomous systems, and materials science.
- **Air Force Institute of Technology Center for Directed Energy:** This research center develops, and tests directed energy technologies, including lasers and high-powered microwave emitters. Its work aims to enhance directed energy systems and explore novel applications.
- **Training and Education Organizations:** The area also accommodates AFIT, which provides graduate-level education and research programs for military and civilian personnel.
- **Research and Development Organizations:** Area B is also home to AFRL, which conducts research spanning aerospace systems and technology, energy, sensors, and materials science.

## 3.4 Major Units and Force Structure

WPAFB is a pivotal hub for the United States Air Force, offering logistical, research and development, educational, and intelligence functions. The base is hosted by the 88th Air Base Wing, which is home to numerous important units and organizations, including the following:

**88th Air Base Wing:** As the host organization for WPAFB, the 88th Air Base Wing operates the airfield, manages air traffic control, maintains facilities, and provides security, communications, legal, personnel, finance, and transportation services. Additionally, it deploys Expeditionary Airmen in support of joint operations and operates the Wright-Patterson Medical Center.

**Air Force Materiel Command:** Headquartered at WPAFB, AFMC oversees the development and acquisition of new Air Force technology and equipment globally. It manages installation and mission support, research and development, testing and evaluation, and life-cycle management services for major Air Force weapons systems. AFMC employs nearly 89,000 personnel and manages a budget of $67 billion.

**Air Force Life Cycle Management Center:** AFLCMC manages the entire life cycle of weapons systems and aircraft, from research and development to acquisition, logistics support, and maintenance. This includes systems like Information Technology, Command, Control, Communications, Intelligence, Surveillance and Reconnaissance, armaments, strategic systems, aerial platforms, and specialized supporting systems. AFLCMC also executes sales of aircraft and other defense-related equipment while building security assistance relationships with foreign partner nation air forces.

**Air Force Research Laboratory:** AFRL leads the way in discovering, developing, and delivering new air, space, and cyberspace technologies. The 711th Human Performance Wing, part of AFRL, researches aerospace and human-machine interface subjects and hosts the U.S. Air Force School of Aerospace Medicine.

**Air Force Institute of Technology:** AFIT is the premier institution for advanced academic education within the Department of the Air Force. It plays a crucial role in graduate education, research, and professional continuing education focused on sustaining America's air, space, and cyber forces' technological supremacy.

**National Museum of the U.S. Air Force:** This museum, open to the public, is the world's oldest and largest military aviation museum. It collects, preserves, researches, and displays military aircraft, aerospace vehicles, missiles, and historical artifacts.

**445th Airlift Wing:** An Air Force Reserve unit based at WPAFB, the 445th operates nine C-17 Globemaster III transport airplanes, specializing in aeromedical evacuation and strategic cargo delivery.

**Air Force Installation and Mission Support Center (AFIMSC) Detachment 6:** AFIMSC manages programs like readiness, morale, communications, engineering, logistics, and security from its headquarters at Joint Base San Antonio-Lackland. It operates globally with locations in 140 sites, supported by four primary units and 10 detachments serving Air Force and Space Force commands. AFIMSC Detachment 6 is located at Wright-Patterson AFB.

**1st Field Investigations Region (AFOSI):** Headquartered in Quantico, Virginia, with a regional office at Wright-Patterson AFB, OSI oversees the Department of Defense Cyber Crime Center and manages the U.S. Air Force Special Investigations Academy. While regions support their commands' investigative needs, OSI units maintain legal independence from those commands, ensuring impartial investigations with direct chains of command to OSI headquarters.

**338th Recruiting Squadron (AETC):** The 338th Recruiting Squadron is part of the 360th Recruiting Group. Based at Wright-Patterson Air Force Base, it covers a vast area across five states, operating 46 recruiting offices and three Military Entrance Processing Stations. With 87 personnel, its mission is to inspire and recruit future Airmen to bolster American airpower.

**Naval Medical Research Unit Dayton (NAMRU):** NAMRU Dayton, part of the Navy Medicine Research & Development Enterprise, conducts research at Wright-Patterson Air Force Base, focusing on environmental health effects, toxicology, and aerospace medicine. Its mission is to boost operational forces' readiness and survivability, while its vision is to excel in enhancing human performance and protection in extreme environments.

**National Air and Space Intelligence Center (NASIC):** Headquartered at WPAFB, it serves as the Air Force's intelligence center, the nation's air and space intelligence center, and the primary source for analyzing foreign air, space, missile, and cyber threats. Its intelligence informs multi-domain operations, weapons system acquisition, and national defense policy. NASIC at WPAFB has the largest number of Guardians outside of United State Space Force (USSF) bases and one-third of the USSF's intelligence community.

**655th Intelligence, Surveillance, and Reconnaissance Wing:** An independent wing under the 10th Air Force, Air Force Reserve Command, it is headquartered at WPAFB, where it specializes in intelligence, surveillance, and reconnaissance.

**Air Force Audit Agency:** It provides high-quality audit services to aid Air Force leadership in making informed decisions.

**Air Force Installation Contracting Center (AFICC):** Headquartered at WPAFB, it manages and executes operational acquisition solutions across the Air Force.

**Office of Special Investigations (OSI):** It is the Air Force's exclusive investigative agency handling military-related felony-level crimes, counterintelligence matters, and criminal activities involving fraud on Air Force installations in the United States and overseas.

**73rd Intelligence, Surveillance, and Reconnaissance Squadron, U.S. Space Force:** This squadron conducts global intelligence, surveillance, and reconnaissance operations to support the research, development, and acquisition pertaining to future space capabilities.

## 3.5 Aircraft Operations

WPAFB maintains two operational runways. The main runway, 05L/23R, is classified as Class B, primarily catering to high-performance and large, heavy aircraft. The secondary runway, 05R/23L, is designated as Class A, mainly intended for small and light aircraft, although it continues to handle cargo and fighter aircraft operations, including C-130 and C-17 aircraft.

The third runway at Area B – Runway 09 (Wright Field) – is typically closed but occasionally used for transporting aircraft to the National Museum of the U.S. Air Force or for special aerial events, subject to prior coordination for use.

The planning and execution of flight activities, including flight paths, altitude, frequency, and timing, necessitate thorough evaluation to comprehend their impact on land use. Flight paths are developed based on information from air traffic controllers, pilots, and various other sources. These paths consider several factors, such as prioritizing routes that avoid densely populated areas, adhering to specific U.S. Air Force criteria related to aircraft performance (e.g., speed, climb rate, turning radius), minimizing noise disturbances, and coordinating with the Federal Aviation Administration (FAA) to prevent conflicts with civilian aircraft. While established flight patterns represent typical operations, variations can occur due to weather conditions, mission requirements, and other air traffic considerations. The types of flight operations regularly conducted at WPAFB include:

- **Arrivals and Departures:** Aircraft arriving at and departing from the base;
- **Training Sorties:** Training flights aimed at enhancing pilot skills and mission readiness;
- **Mission-Specific Flights:** Aircraft operations linked to specific missions and objectives;
- **Maintenance and Test Flights:** Flights associated with aircraft maintenance and testing procedures; and
- **Special Events:** Flights conducted for unique events, demonstrations, and relocation of aircraft to the museum.

Each flight operation is meticulously planned and executed with consideration for safety, operational requirements, and minimizing disturbances to surrounding communities.

### Types of Aircraft

WPAFB only has one permanently assigned aircraft, the C-17. Additional transient aircraft, or "visiting aircraft," are also common at the Installation. Transient aircraft is the term used to describe aircraft that are based out of a different installation and that utilize another airfield for occasional transient purposes. These purposes may include official visits or to conduct operations on the airfield. The combination of permanent and transient aircraft creates a unique operational noise footprint at the Wright-Patterson airfield.

Below is a brief description of the C-17 and common transient aircraft that residents will see in the skies above and around WPAFB.

## Permanently Assigned Aircraft

### C-17

The C-17 Globemaster III is the most flexible cargo aircraft to enter the airlift force. The C-17 can rapidly and strategically deliver troops and all types of cargo to bases worldwide. The aircraft's primary mission is to perform tactical and strategic airlift and airdrop, transport troops and cargo, and transport patients during aeromedical evacuations. The C-17 plays a logistical role in wartime operations and humanitarian aid during regional conflicts or after natural disasters such as earthquakes or floods.

*C-17s fly over Blue Ridge Mountains, 2005*

## Transient Aircraft

### C-12

The C-12 Huron is a military version of the Beech Super King. The C-12 is primarily used for range clearance, embassy support, humanitarian assistance, medical evacuation, VIP transport, and passenger and light cargo transport. The Huron model features a cargo door with a built-in airstair to provide easy access for passengers. The flight deck and cabin are modified to support high-altitude flights.

*MC-12 arriving at Bagram Airfield, Dec. 27, 2009*

*C-21 departs over Scott AFB - Feb 26, 2021*

### C-21

The C-21 is a twin-engine turbofan aircraft used for passenger and cargo airlift. The aircraft is the military version of the Learjet 35A business jet. As an instrument of diplomacy, the C-21 can be used to transport general officers and other high-ranking government officials to locations around the world. The C-21 also provides aeromedical evacuation.

### C-37

The C-37 is a twin-engine turbofan aircraft acquired to fulfill the worldwide special airlift missions of high-ranking government and DoD officials around the globe. The aircraft has commercial and military communications equipment to provide secure/nonsecure voice and data capability. The C-37 conducts intercontinental flights with cruise altitudes between 41,000 and 51,000 feet.

*C-37 taxiing at Mountain Home AFB, June 19, 2022*

*C-130 flying over Wyoming in appreciation of COVID-19 frontline workers, May 15, 2020*

### C-130

The C-130 performs tactical airlifts. Capable of operating on rough dirt strips, it is the primary transport for airdropping troops and cargo into hostile environments. The aircraft supports peacetime and wartime operational needs for airlift support, resupply, aeromedical missions, weather reconnaissance, and firefighting duties for the U.S. Forest Service and natural disaster relief missions. The C-130 can be rapidly reconfigured for various types of cargo, such as palletized equipment, floor-loaded materials, airdrop platforms, container delivery system bundles, vehicles and personnel, or for aeromedical evacuation.

### F-16

The F-16 utilized by the 180th Fighter Wing (FW) operating out of Swanton, Ohio, near Toledo, transits WPAFB regularly due to the close proximity and the aircraft arresting barrier installed on the runway at WPAFB, which allows the runway to be used as a divert airfield for that type of aircraft. The F-16 is a highly maneuverable and versatile fighter aircraft with exceptional combat range and all-weather capabilities. It excels in air-to-air and air-to-surface missions, boasting precise weapon delivery, self-defense capabilities, and advanced avionics systems. Its streamlined design incorporates technologies from successful predecessors while maintaining strength.

*A U.S. Air Force F-16 Fighting Falcon flies over Afghanistan, March 17, 2020, sourced from the U.S. Air Force*

## Flight Tracks

The majority of flights at WPAFB, approximately 96%, take place between 7 a.m. and 10 p.m. Among these flights, the primary runway, 05L/23R, is utilized for 94% of flight operations. Specifically, aircraft using runway 05L typically arrive from the direction of Dayton and depart in the direction of Springfield, while aircraft using runway 23R arrive from the direction of Springfield and depart toward Dayton. The flight tracks are shown on Figures 3-2, 3-3, and 3-4.

It is important to note that flight operations in the airspace do not adhere to fixed pathways similar to vehicles on highways. Although represented as lines on the maps provided, flight paths can vary based on factors such as pilot techniques, aircraft takeoff weight, prevailing wind patterns, and guidance provided by air traffic control centers to ensure safe separation and coordination.

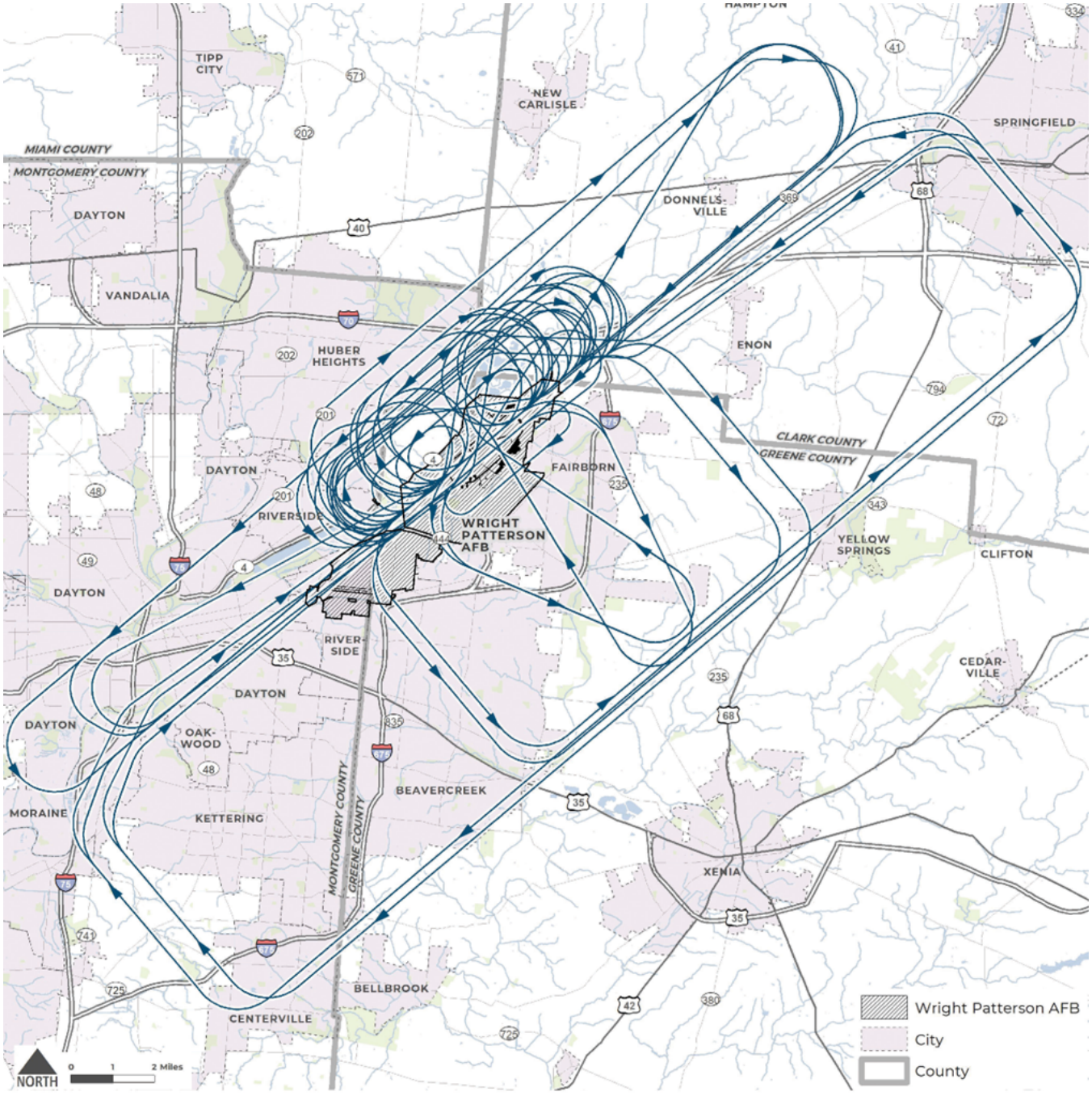
**Figure 3-2** Aircraft Arrival Tracks


*WPAFB AICUZ Arrival Flight Tracks, 2022*

**Figure 3-3** Departure Flight Tracks


*WPAFB AICUZ Departure Flight Tracks, 2022*

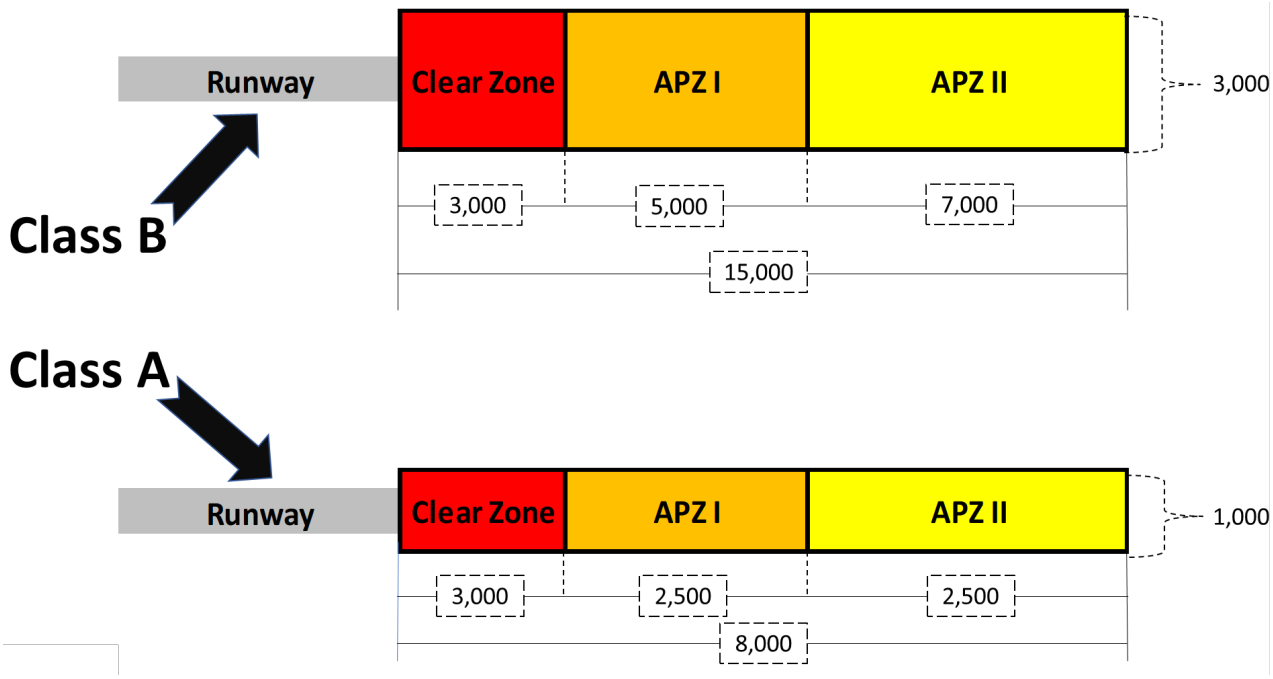
**Figure 3-4** Closed Pattern Flight Tracks




*WPAFB AICUZ Closed Pattern Flight Tracks, 2022*

## 3.6 Operational Safety

Safety zones are associated with active runways and are designed to limit and guide development to protect the safety of the public and aircrews. Within the safety zones, shown on Figure 3-5, people and intensive land use should be limited. The DoD has established safety zones around runways and landing areas based on historical data on where an aircraft accident is most likely to occur. These safety zones are the clear zone (CZ), accident potential zone I (APZ I), and accident potential zone II (APZ II). These zones are based on the dimensions of the runway. Curved APZs are developed based on an installation's utilization rate of certain flight patterns. WPAFB has both Class A and Class B runways. Their compatibility guidelines are the same; only their dimensions differ.




*DoD Airplane Accident Potential Zones Dimensions*

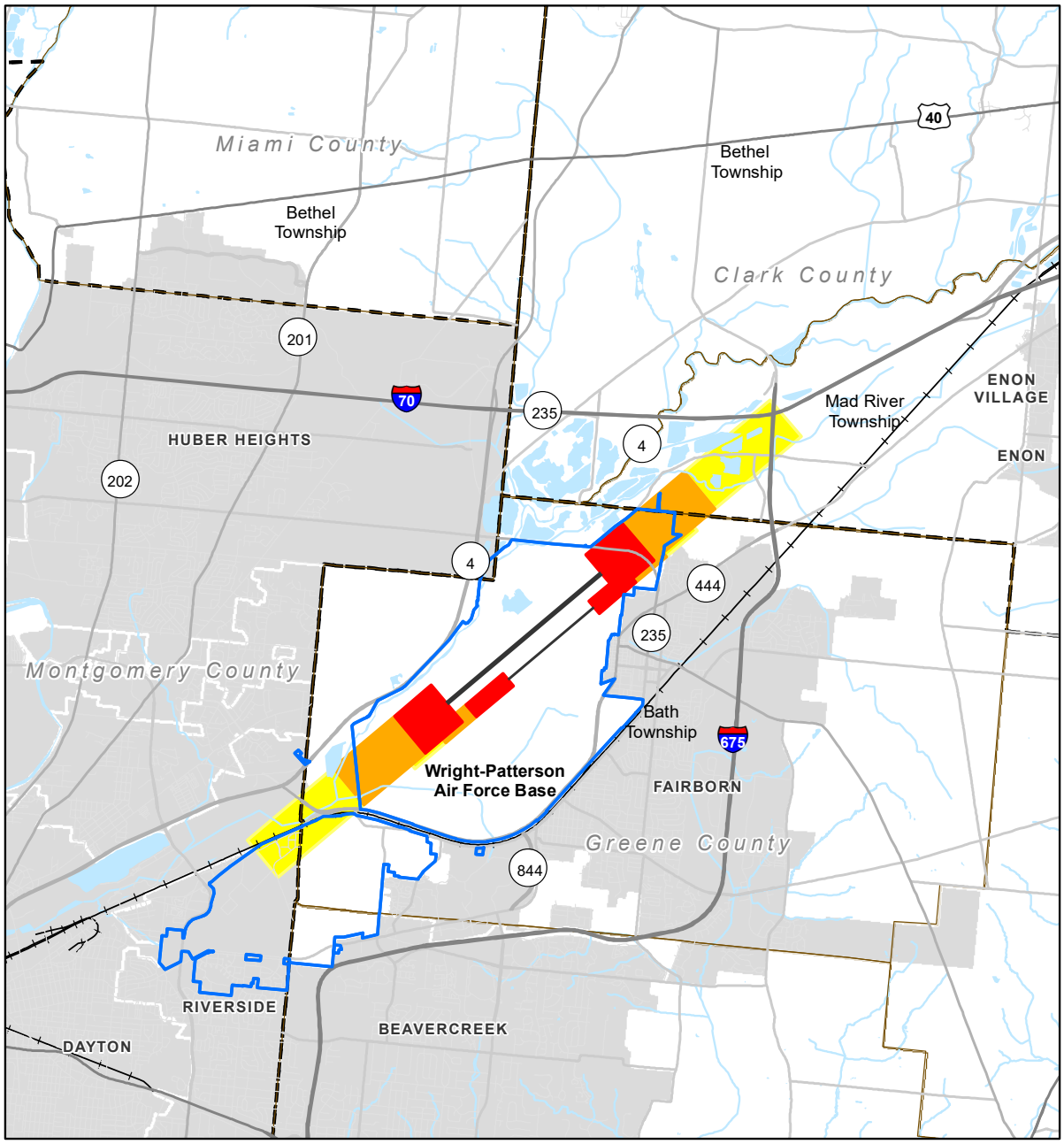
The safety zones are part of the planning toolbox for local planning agencies to encourage compatible growth within areas where an aircraft mishap is statistically most likely to occur, if such an event were to happen. These zones restrict land use types, density, and height to promote compatible economic development. For safety reasons, CZs should be entirely clear of any obstructions, whether natural or man-made, unless they are necessary for aircraft landing. It is the DoD's policy to acquire the land or a long-term lease or easement, when possible, to prevent any development or growth within the CZ. The guidelines for development within APZ I are less stringent than in the CZ, but development should be limited, and residences are not recommended. Fewer restrictions apply within APZ II; residential development is allowed to promote the retention of family farming, but it generally remains incompatible.

The dimensions for Class B CZs and APZs are per the requirements of UFC 3-260-01 for Airfield and Heliport Planning and Design and are described as follows:

- The CZ is where an aircraft mishap is most likely to occur. Air Force clear zones are a square 3,000 feet by 3,000 feet centered on the end of each runway. Permitted land uses within this zone are considerably limited, including transportation, communication, utilities, infrastructure necessary for airfield operations, unoccupied open space, and limited agricultural space.
- APZ I is located adjacent to the CZ boundary and the runway. This zone extends for 5,000 additional feet with a width of 3,000 feet. This area typically experiences fewer accidents than the CZ and has fewer restrictions. Floor Area Ratio (FAR) guidelines have been developed for permitted uses and to limit large gatherings. The suggested maximum occupancy for all venues and structures is 25 people per acre. Permitted land uses within this zone are limited to non-occupied structures; thus, residential land uses are prohibited.
- APZ II begins at the outer boundary of APZ I and extends for a length of 7,000 feet with a width of 3,000 feet. APZ II is where development is the least restricted due to the lower risk of accidents as it is farther from the runway. The suggested maximum occupancy throughout is 50 people per acre. Warehouse and maintenance facilities are permitted within the footprint, and other permitted uses should follow the FAR guidelines. Single-family residential is discouraged. However, a maximum of two dwelling units per acre is permitted to encourage the retention of farming and open space, as recommended by the DoD.

Class A runway APZ restrictions are the same as Class B. The dimensions differ and are described below:

- CZ: 1,000 feet by 3,000 feet off the center of the runway
- APZ I: Adjacent to the clear zone, 1,000 feet wide by 2,500 feet long
- APZ II: Adjacent to APZ I, 1,000 feet wide by 2,500 feet long




Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.

**Figure 3-5 Airfield Safety Zones**

# 3.7 Operational Noise

Aircraft operations produce noise when conducting overflight, takeoffs, landings, and engine maintenance run-ups, which are procedures performed on the airfield to test for proper engine performance. The Air Force considers how its operations impact the local community by calculating an average-weighted noise level measured as a day-night average sound level (DNL). Whether the noise from flight operations is a nuisance depends on the land use on the ground and how the aircraft noise is perceived by an individual. Noise associated with aircraft is usually considered a nuisance where land uses are incompatible with aircraft operations. The noise contours for WPAFB are shown on Figure 3-6.

## Decibels and Weighting

The standard for the loudness of sound or noise levels is a quantity known as the "decibel" (dB). The threshold of pain for humans is 120 dB. A whisper is between 20 dB and 30 dB, a noisy conversation is about 50 dB, a vacuum cleaner is about 70 dB, a lawn mower is about 90 dB, and a car horn at one meter is about 110 dB.

The human ear is not uniformly sensitive to all frequencies of sound. Most common sound sources are measured using A-weighted decibels (dBA). The A-weighting corresponds to the ear's sensitivity and deemphasizes very high and low sound frequencies to reflect only the frequencies people hear. The military typically uses A-weighting to describe sound from generators, aircraft, and general transportation. Large-caliber weapons firing and detonations are assessed with C-weighted decibels as they better represent the sound and vibrations that people experience.

## What is Operational Noise?

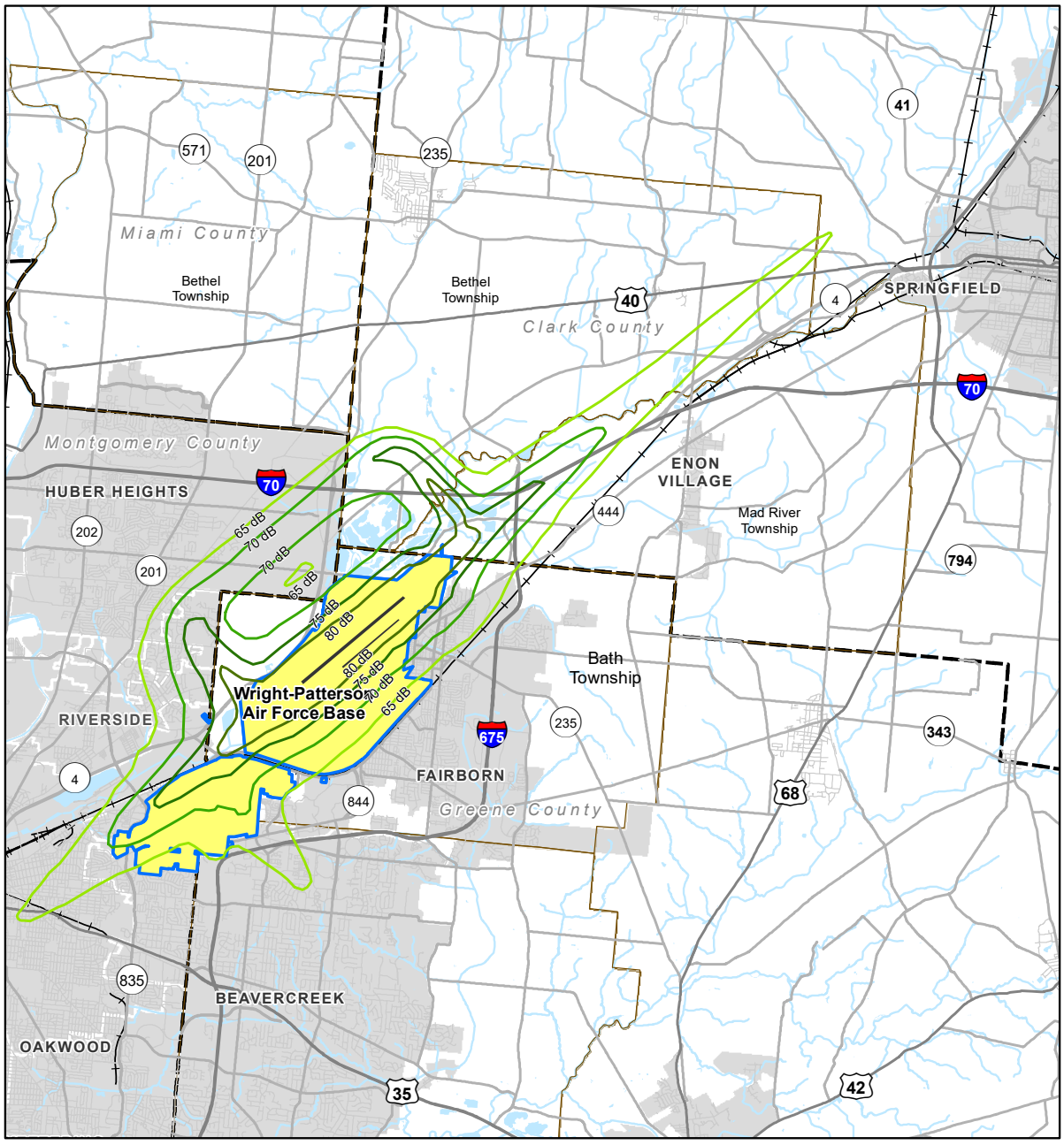
Operational noise is sound from military operations (aircraft, munitions, weapons firings, etc.). Long-term exposure from operational noise on surrounding communities is the most persistent and costly encroachment challenge for the DoD. Operational noise often extends beyond the fence line and tends to be more apparent to the public than other visual or environmental factors. As a result, operational noise generates many complaints from communities and is often the most prominent discussion point and decision-making factor in land use planning surrounding military installations.

## How is Operational Noise Displayed and Discussed?

Federal, state, and local agencies use a set of standard metrics and measurements to describe noise when assessing land use compatibility and conducting noise studies and management. Each metric or measurement is used differently depending on the source or type of sound to ensure community exposure is appropriately measured and addressed. The differences in these metrics often confuse installation personnel and communities, who may not realize that sound may be assessed in various ways.

DNL is the most widely used metric to describe, assess, and predict long-term sound exposure. The DoD uses DNL to determine land use compatibility for operational noise. The FAA and DoD use A-weighted DNL to describe and display aviation sound. Flight operations fluctuate throughout the week, month, and year, creating a challenge for appropriately planning within the noise environment. DNL provides and represents an average of the sound produced throughout the day and is averaged over a period of time. For land use planning purposes, the period is often one year. Using a year's worth of operations, the DoD accounts for large-scale exercises and nighttime training to develop an operational noise footprint showing the average sound levels communities experience.

Noise contours are generally displayed in five-decibel increments from 65 dBA to 80 dBA. The best way to visualize the sound levels of operational noise is by displaying a gradient map. However, that is not always possible. These are ideal because they visualize how sound dissipates from the source and how it moves differently than expected or anticipated in some areas, such as in the mountains or over water.




**2022 Noise Contours**
- 65 dB
- 70 dB
- 75 dB
- 80 dB
- Runway

- Wright-Patterson AFB
- City
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Major Road
- Local Road
- Railroad

Matrix

Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.

0 1 2 4 Miles

**Figure 3-6 Airfield Noise Contours**

# 3.8 Operational Airspace

WPAFB's airspace is governed by the FAA. The FAA designates airspace around WPAFB as Class D airspace, which extends from the surface to an altitude of 2,500 feet above the airport's elevation.

The lateral boundaries of the WPAFB airspace are defined by a circle with a radius of 4.4 nautical miles centered on the airport's control tower. Pilots must establish two-way radio communication with the air traffic control tower (ATCT) within this area and receive instructions to enter the airspace. Additionally, several restricted military operating areas (MOAs) are close to WPAFB. These areas are designated for military training activities and may be active at various times, restricting access to civilian aircraft.

Pilots must review current charts and NOTAMs (Notices to Air Missions) before flying near WPAFB to ensure they know about current airspace restrictions or other aviation-related information.

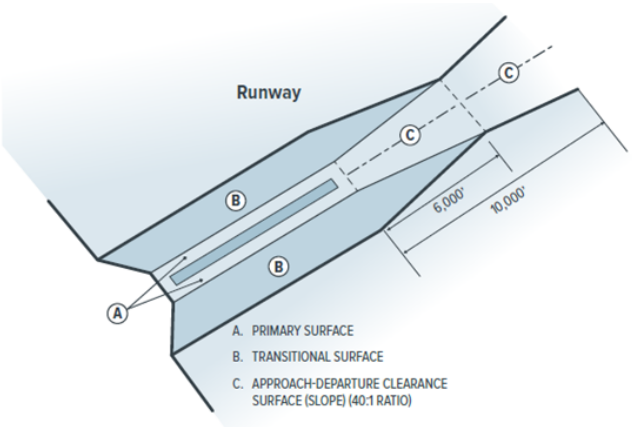
## Imaginary Surfaces

Federal Aviation Regulations, Part 77 and DoD UFC 3-260-01, Airfield and Heliport Planning and Design, specify a series of imaginary height restriction surfaces surrounding military-use airfields to mitigate vertical obstructions relative to the airspace around a runway. The imaginary surfaces of an active runway are used to define the required airspace that must remain free of vertical obstructions near aviation operations to optimize safe flight operations. The various imaginary surfaces build upon one another. They are designed to guide the height of structures so that there are no vertical obstructions to air navigation and operations, whether natural or man-made.

The DoD and FAA identify a complex series of imaginary planes and transition surfaces that together define the airspace needed to remain free of obstructions around an airfield. Obstruction-free imaginary surfaces form a "bowl" around the airfield to ensure safe flight approaches, departures, and pattern operations. Obstructions include natural terrain and man-made features such as buildings, towers, poles, wind turbines, cell towers, and other vertical obstructions to airspace navigation. Height restrictions apply to transitional surfaces and approach and departure surfaces. Aboveground structures on the primary surface are not permitted. WPAFB has both Class A and Class B surfaces. The imaginary surfaces are visualized on Figure 3-7.

**There are fewer restrictions on Class A runways as they are smaller than Class B runways;** Class A runways are described and visualized below:

- **Primary Surface:** An imaginary surface symmetrically centered on the runway, extending 200 feet beyond each runway end, that defines the limits of the obstruction clearance requirements in the vicinity of the landing area. The width of the primary surface is 1,000 feet, or 500 feet on each side of the runway centerline.




*Imaginary surfaces and transitional planes for Class A runways*

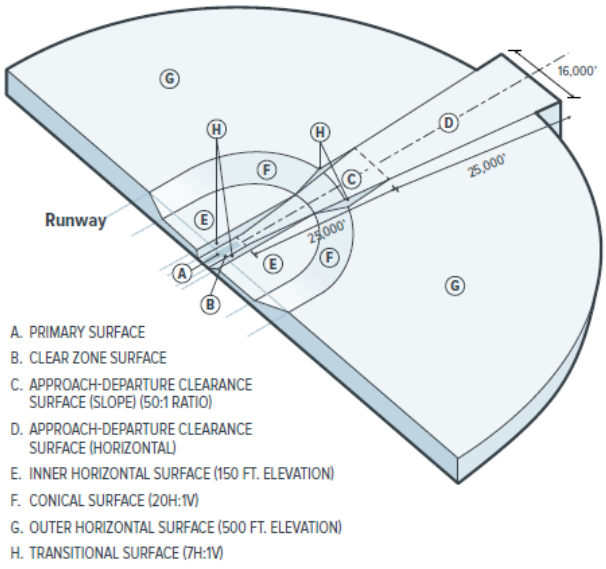
- **Approach-Departure Clearance Surface:** An imaginary surface symmetrically centered on the extended runway centerline, beginning as an inclined plane (glide angle) at the end of the primary surface (200 feet beyond each end of the runway) and extending for 10,000 feet. The slope of the approach-departure clearance surface is 40:1 until it reaches 250 feet above the established airfield elevation. The width of this surface at the end of the primary surface is 1,000 feet, flaring uniformly to a width of 2,500 feet at the endpoint.

- **Transitional Surface:** A surface that extends outward from the edge of the primary surface and upward at an angle to the runway centerline. It extends the runway centerline at a slope of 7:1 until it reaches a point 150 feet above the established airfield elevation. The transitional surface edge is parallel to the edge of the primary surface along the length of the runway and extended runway centerline. From there, the transitional surface extends in a straight line to the point at which it connects to the approach-departure clearance surface at 150 feet above the established airfield elevation.

**Class B surfaces are described and visualized below:**

- **Primary Surface:** An imaginary surface symmetrically centered on the runway, extending 200 feet beyond each runway end, that defines the limits of the obstruction clearance requirements near the landing area. The width of the primary surface is 2,000 feet, or 1,000 feet on each side of the runway centerline.

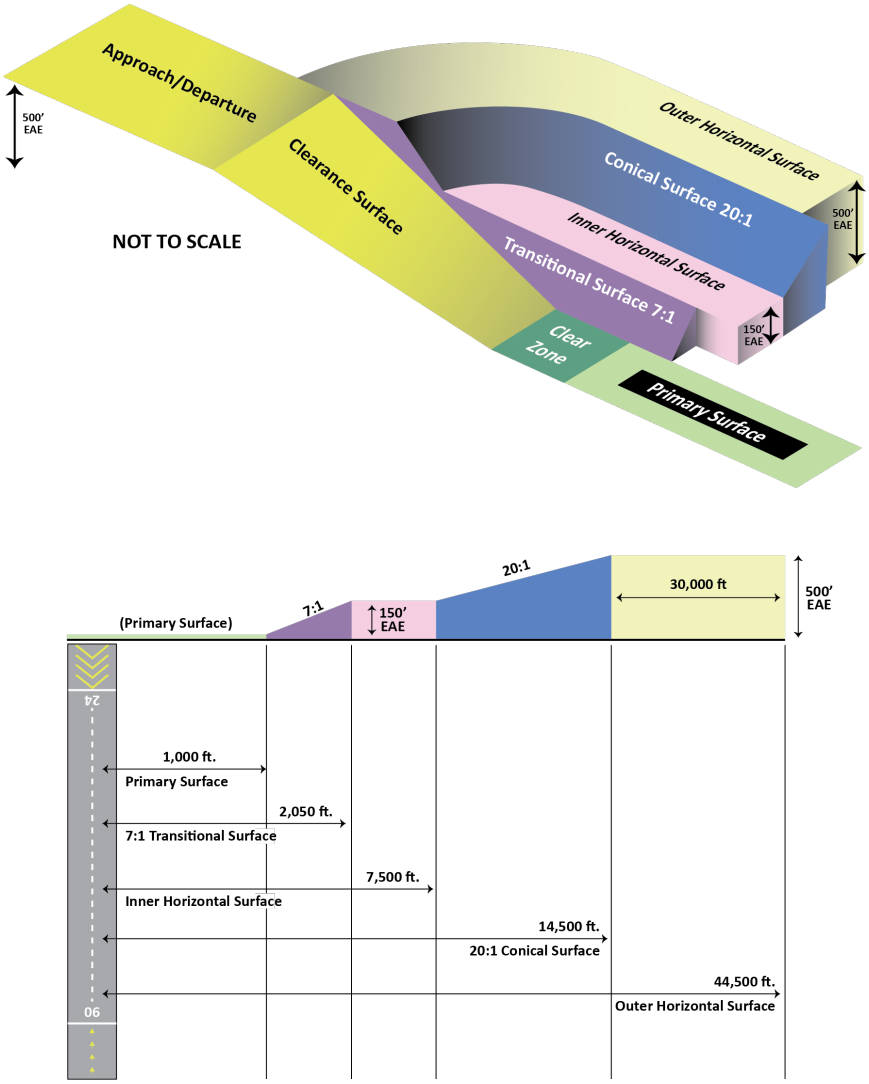
- **Approach-Departure Clearance Surface:** An imaginary surface symmetrically centered on the extended runway centerline, beginning as an inclined plane (glide angle) at the end of the primary surface (200 feet beyond each end of the runway) and extending for 50,000 feet. The slope of the approach-departure clearance surface is 50:1 until it reaches an elevation of 500 feet above the established airfield elevation. It then continues horizontally at this elevation to 25,000 feet from the starting point. The width of this surface at the runway end is 2,000 feet, flaring uniformly to a width of 16,000 feet at the end.



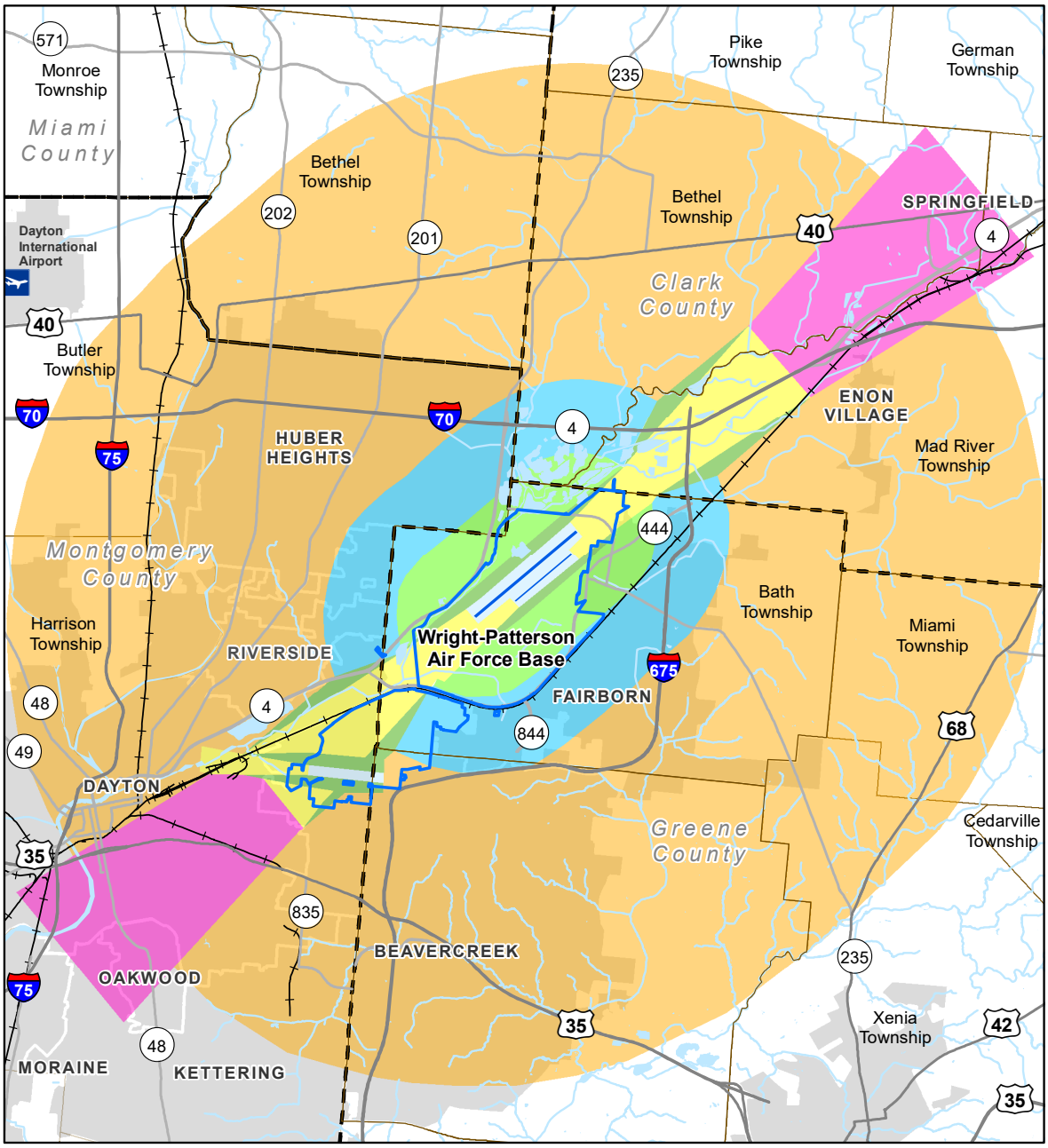

*Imaginary surfaces and transitional planes for Class B runways*

- **Inner Horizontal Surface:** An imaginary surface that is an oval plane 150 feet above the established airfield elevation. The inner boundary intersects with the approach-departure clearance surface and the transitional surface. The outer boundary is formed by scribing arcs with a radius of 7,500 feet from the centerline of each runway end and interconnecting these arcs with tangents.
- **Conical Surface:** An inclined imaginary surface extending outward and upward from the outer periphery of the inner horizontal surface for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation. The slope of the conical surface is 20:1. The conical surface connects the inner and outer horizontal surfaces.
- **Outer Horizontal Surface:** An imaginary surface 500 feet above the established airfield elevation and extending outward from the outer periphery of the conical surface for a horizontal distance of 30,000 feet.
- **Transitional Surface:** An imaginary surface that extends outward and upward at an angle to the runway centerline and extended runway centerline at a slope of 7:1. The transitional surface connects the primary and the approach-departure clearance surfaces to the inner horizontal, conical, and outer horizontal surfaces.

A three-dimensional cross section of the imaginary surfaces for runways shows the slope of the surfaces that help guide military/community planners in land use planning around an airfield. Structures should not exceed these heights to protect the navigable airspace associated with the airfield, the safety of pilots and people, and the land uses on the ground. This is especially important in the CZ and along the approach-departure surfaces.




*Imaginary Surfaces Cross Section*




**Imaginary Surface**
- Primary Surface (Surface)
- Approach/Departure(Sloped1:50ft)
- Approach/Departure (Horizontal 500ft)
- Inner Horizontal Surface (150ft)
- Conical Surface (Sloped 1:20 ft)
- Outer Horizontal Surface (500ft)
- Transitional Surface (Sloped 1:7 ft)
- Runway

- Wright-Patterson AFB
- City
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Railroad

Matrix

Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023

0 1 2 4 Miles

**Figure 3-7 Imaginary Surfaces**

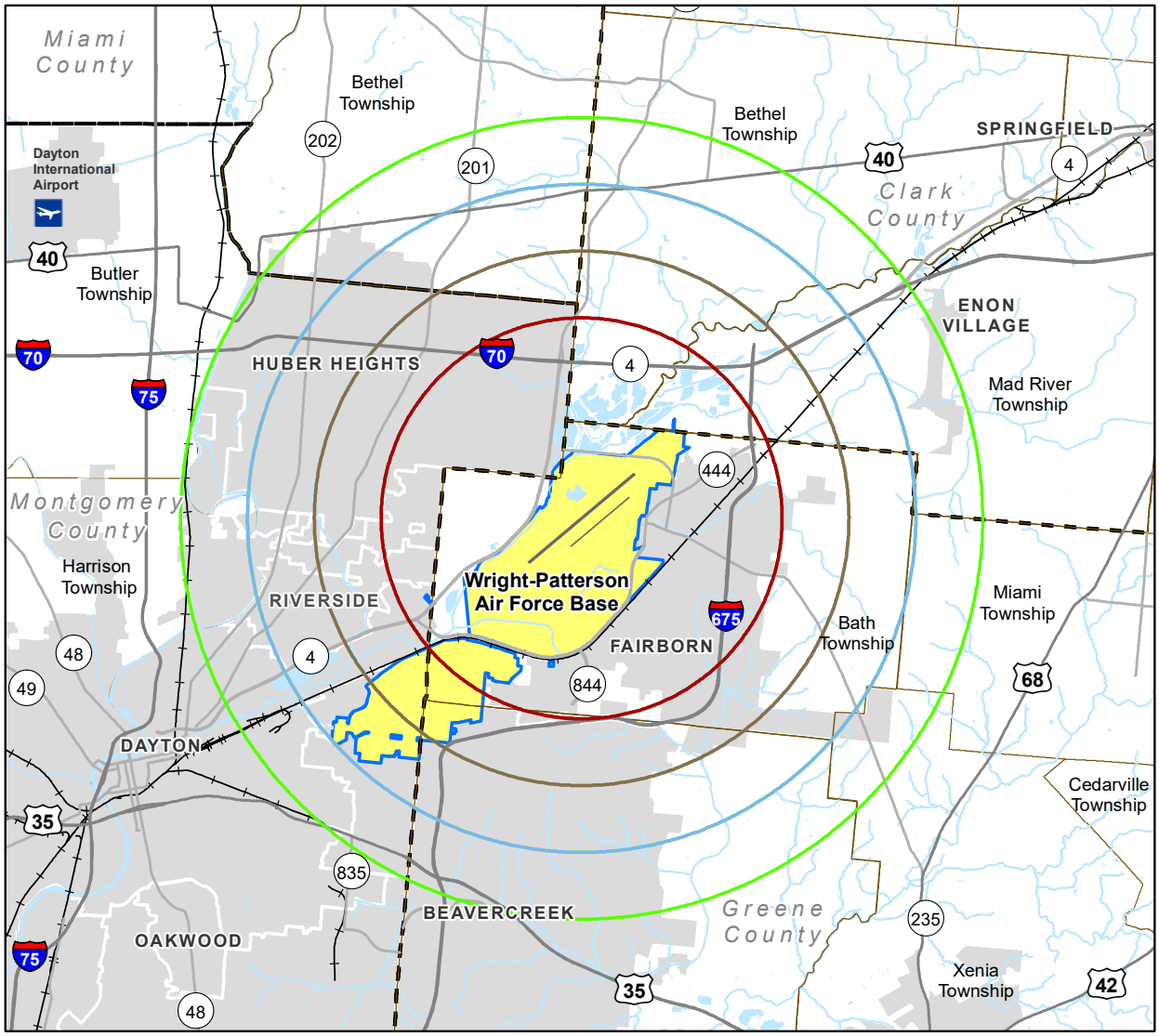
## 3.9 Vertical Obstruction Evaluation

Federal Aviation Regulation Title 14, Part 77 (14 CFR 77) establishes standards and notification requirements for objects affecting navigable airspace and provides the basis for evaluating vertical obstructions. This regulation provides information to assess a proposed structure or facility's height, elevation, and location relative to the airfield. The field elevation (the highest point) of WPAFB's runways is 823 feet above mean sea level.

14 CFR 77 determines compatibility based on the height of proposed structures or natural features relative to their distance from a runway. These are often digitally mapped and available on community mapping portals. Local jurisdictions use a distance formula to assess the height restrictions near an airfield. The regulation defines an obstruction to air navigation located within the imaginary surfaces using the criteria below:

- A height of 499 feet above ground level (AGL) at the site of the object.
- A height 200 feet AGL or above the established airport elevation, whichever is higher, within three nautical miles of the selected reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length. This height increases by 100 feet for each additional nautical mile of distance from the airport up to a maximum of 499 feet.
- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.
- A height within an en-route obstacle clearance area, including turn and termination areas of a federal airway or approved off-airway route, would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of a civilian airport or any imaginary surface established under 77.19, DoD 77.21, and heliports: 77.2; however, no part of the takeoff or landing area itself will be considered an obstruction.
- Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section (14 CFR 77) apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:
  - 17 feet for an interstate highway that is part of the National System of Military and Interstate Highways, where overcrossings are designed for a minimum of 17 feet vertical distance.
  - 15 feet for any other public roadway.
  - 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.
  - 23 feet for a railroad.

Projects that trigger Part 77 review must undergo an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA), in which the FAA reviews a proposal and identifies potential hazards to aviation. Evaluation zones and the distance for each zone are shown on Figure 3-8. If the FAA has concerns, it may require avoidance or minimization, lighting, or other measures to ensure airspace safety for military and civilian purposes. If potential impacts to military operations are identified, the project must also undergo formal or informal review by the Military Aviation and Installation Assurance Siting Clearinghouse. The Clearinghouse will evaluate the compatibility of the proposed project with military missions.



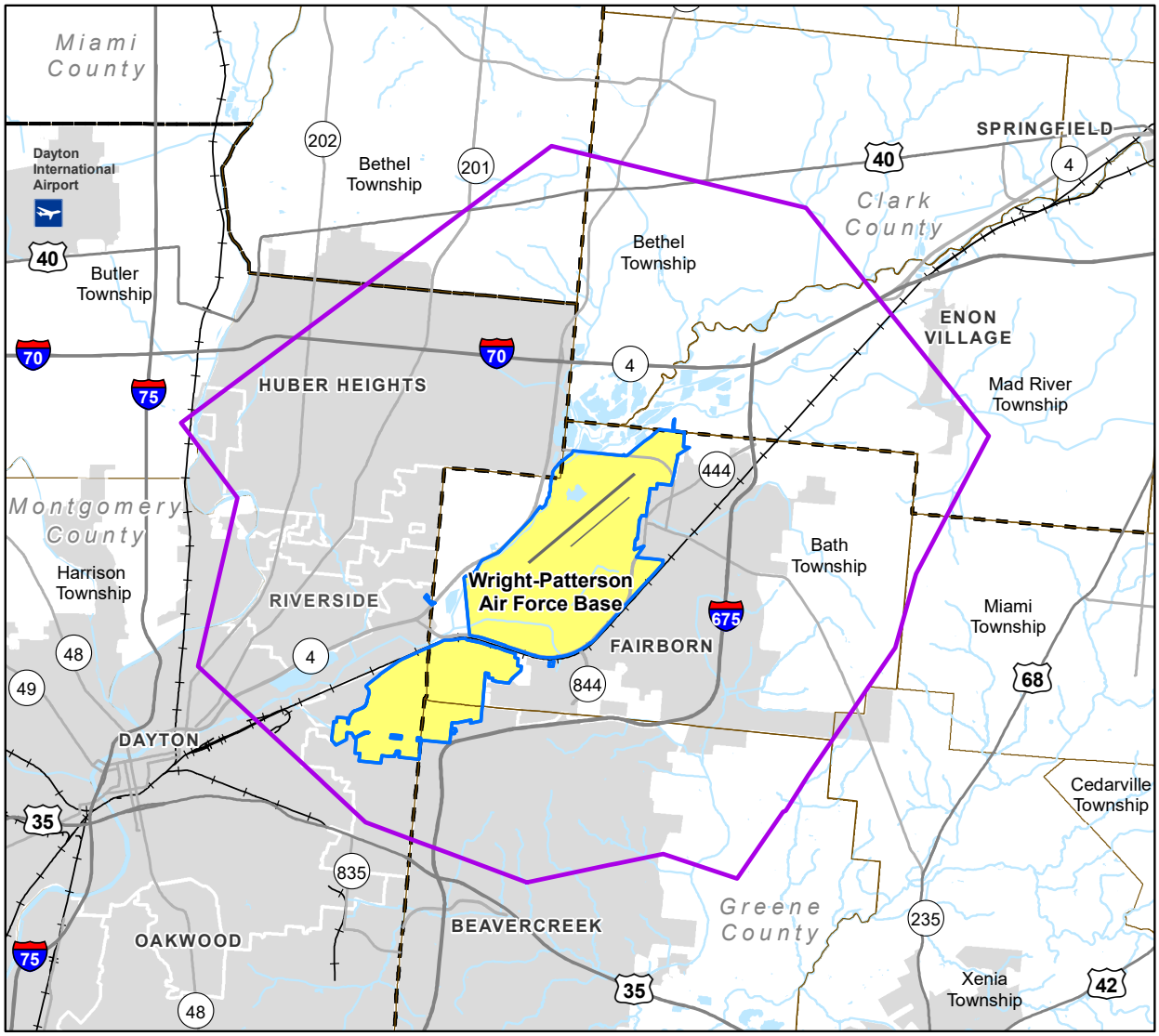

Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023

**Figure 3-8 Vertical Obstruction Evaluation Zones**

## 3.10 Bird/Wildlife Aircraft Strike Hazard Relevancy Area

Birds and animals can present a significant hazard to military flight operations. While fatal accidents resulting from bird or wildlife strikes have been limited at WPAFB, impacts are a safety concern and can cause significant damage to aircraft.

Figure 3-9 shows the FAA-designated five-mile bird/wildlife aircraft strike hazard (BASH) relevancy area around WPAFB. The BASH relevancy area is where the FAA recommends land use controls and/or design measures to reduce the risk of BASH incidents. The primary recommendation made by the FAA is to create and manage a minimum horizontal separation distance between an airfield and wildlife attractants. The recommended separation distance extends five miles from the perimeter of the Air Operations Area (AOA) at WPAFB – areas including paved and unpaved areas associated with aircraft movement (i.e., runways, taxiways, and aprons). This area was determined to be significant by the FAA as aircraft are more likely to strike birds and wildlife due to ascending or descending altitudes. In contrast to the imaginary surfaces, the area measuring five miles from the AOA does not include a height aspect since it deals with managing terrestrial features like land use and water.




Source: Matrix Design Group, 2023.

**Figure 3-9 Five-Mile BASH Relevancy Area**

# 3.11 On-Base Resources

In addition to the previously mentioned military activities, Area A also houses many support functions necessary for the base to operate, such as medical facilities, security forces, and base operations. Overall, Area A plays a critical role in supporting the Air Force's mission and maintaining the readiness of its personnel and equipment. These range from educational and training opportunities to recreational and entertainment options. The installation provides services that include shopping facilities, childcare centers, housing areas, and a large medical center.
Notable amenities located in Area A include the following:

- Base Exchange (BX) and Commissary: These facilities offer shopping options for military personnel and their families, including various retail stores, food courts, and other services.
- Fitness Centers: These facilities include the base's main fitness center, which features a weight room, cardio equipment, and various fitness classes.
- Golf Courses: The base has three golf courses — an 18-hole golf course and a 9-hole course at Prairie Trace and an additional 18-hole course at Twin Base. These facilities also feature driving ranges, putting greens, and pro shops.
- Outdoor Recreation: Wright-Patterson AFB has several outdoor recreation facilities, including Bass Lake Lodge, an RV park, and a campground.
- Education Center: The base's Education Center provides educational and training opportunities for military personnel and their families, including classes, workshops, and counseling services.

## Childcare

Wright-Patterson Child Development Centers (CDCs) provide safe, healthy environments for children ages six weeks through five years old. The CDCs provide childcare in Areas A and B and the Prairies through their four facilities. The CDCs are accredited by the National Association for the Education of Young Children (NAEYC) and certified by the DoD and the Air Force. Children of active-duty military members and DoD civilians are eligible for childcare at the CDCs.

The CDCs offer:

- Full-time care,
- Weekly care,
- Before- and after-school care, and
- Hourly care.

# Housing

Military members and their families have several options for housing at WPAFB. The housing options include single-family homes, duplexes, and townhouses. Privatized military housing is also an option for military members and their families. Under this program, private companies manage and maintain the housing on military installations. The housing is generally newer and offers more amenities than traditional military housing. The housing options at WPAFB include:

- 1,539 privatized housing units managed by Properties at Wright Field,
- 100 brick homes in Area A managed by the Civil Engineering Housing Office, and
- Six permanent-party dormitories with 406 rooms.
- Off-base housing options are additionally available for military members and their families who choose to live in the surrounding civilian community.

## BAH Rates

BAH, or Basic Allowance for Housing, is a military benefit provided to service members without government housing. The purpose of the benefit is to assist service members with the cost of housing in the civilian community.

BAH rates vary by location and are determined based on several factors, including the service member's pay grade, dependency status, and duty station location. The rates are calculated based on local housing costs, including rental prices, utilities, and other expenses.

The DoD reviews BAH rates annually, considering changes in local housing costs and other economic factors. The rates are generally adjusted to reflect changes in the cost of living, so service members should expect to see changes in their BAH rates from year to year. BAH rates for 2024 are shown in Table 3-1.

**Table 3-1** 2024 BAH Rates

| Military Rank | With Dependents | Without Dependents | Military Rank | With Dependents | Without Dependents |
|---|---|---|---|---|---|
| E1 – E4 | $1,347.00 | $1,011.00 | O1 | $1,485.00 | $1,236.00 |
| E5 | $1,455.00 | 1,137.00 | O1E | $1,755.00 | $1,452.00 |
| E6 | $1,647.00 | $1,245.00 | O2 | $1,644.00 | $1,419.00 |
| E7 | $1,740.00 | $1,350.00 | O2E | $1,890.00 | $1,536.00 |
| E8 | $1,842.00 | $1,500.00 | O3 | $1,908.00 | $1,572.00 |
| E9 | $2,001.00 | $1,545.00 | O3E | $2,058.00 | $1,635.00 |
| W1 | $1,662.00 | $1,323.00 | O4 | $2.244.00 | $1740.00 |
| W2 | $1,785.00 | $1,497.00 | O5 | $2,484.00 | $1,863.00 |
| W3 | $1,911.00 | $1,554.00 | O6 | $2,502.00 | $1,890.00 |
| W4 | $2,037.00 | $1,665.00 | O7 | $2,520.00 | $1,917.00 |
| W5 | $2,193.00 | $1,761.00 | | | |

*Wright-Patterson AFB Housing*

# Publicly Accessible Resources


## Huffman Prairie Flying Field

In 1990, the Wright brothers' original 84.42-acre test and training field was officially listed as a National Historic Landmark. Adjacent to the property is the Huffman Prairie, 109 acres that form the largest natural tallgrass prairie remnant in Ohio. A replica of the Wright brothers' 1905 hangar was constructed here. In 1992, the Huffman Prairie Flying Field became part of the Dayton Aviation Heritage National Historical Park.

## Golf Course

Wright-Patterson offers public access to one of its two golf courses. The Twin Base Golf Course, featuring 18 holes, welcomes military, civilian, and public players alike. It boasts amenities such as a driving range, three practice greens, a pro shop, and the Jones Room, an ideal space for events and gatherings.

## Rod and Gun Club

Wright-Patterson Air Force Base hosts a public Rod and Gun Club, where visitors can participate in trap and skeet shooting. No military ID is required. Safety is paramount, with mandatory briefings and strict rules on gun handling. The club rents shotguns and offers affordable rates for shooting sessions. Open daily, it welcomes shooters of all skill levels and ages, fostering a community of safety and respect.

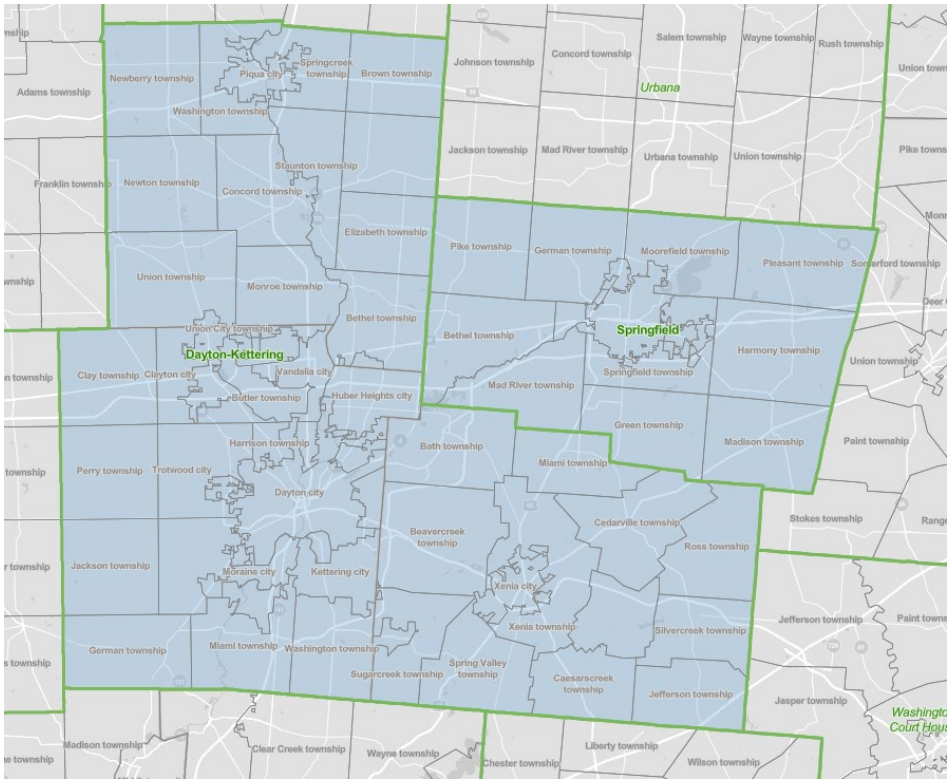

# 4 Community Profile

This chapter provides information about the surrounding communities in the Wright-Patterson AFB CUP Project Area. This information is intended to be considered with other factors to help decision-makers generate informed planning policies about future development and economic growth to mitigate compatibility issues.

This chapter provides information about the communities, agencies, and organizations that participated in the WPAFB CUP. These include the following:

- Counties
  - Clark
  - Greene
  - Montgomery
- Townships
  - Bath
  - Bethel
  - Beavercreek
  - Mad River
- Cities
  - Beavercreek
  - Dayton
  - Fairborn
  - Huber Heights
  - Riverside
- Villages
  - Enon
- Agencies and Organizations
  - Dayton Development Coalition
  - Miami Conservation District
  - Wright-Patterson AFB Joint Airport Zoning Board
  - Miami Valley Regional Planning Commission
  - Wright-Patterson AFB Council of Governments
  - Wright State University

This chapter details the community partners within the CUP Project Area and pertinent community information such as population, housing, economic trends, current development, transportation, and natural resources. This regional profile provides a better appreciation of the communities in the WPAFB CUP Project Area and their relationship to WPAFB.




*Dayton-Kettering and Springfield MSAs*

The first phase of identifying land use compatibility is describing certain demographic characteristics of the communities within the CUP Project Area. This knowledge provides the baseline context for informed decisions when assessing compatibility strategies. The goal of the CUP is to provide information that enables stakeholders to understand population and development trends that can affect the future of military installations and communities within the Dayton-Kettering Metropolitan Statistical Area (MSA) – comprised of Greene, Miami, and Montgomery Counties – along with Clark County. The airspace around WPAFB and a portion of the base north of Area A is in Clark County or the Springfield MSA.

This information and other factors will help decision-makers generate coherent, informed planning policies about future development and economic growth to mitigate compatibility issues. This chapter aims to foster an understanding of land use and activities that occur "outside the fence" of WPAFB when considering future missions and operations.

This southwestern region of Ohio has a rich history in agriculture, manufacturing, and shipping industries, with recent growth in science, technology, engineering, and math (STEM), higher education, healthcare, and aerospace. The metropolitan area is anticipated to continue as a leader in innovation and development in the region.

## 4.1 Community Partners

The local communities provide housing, amenities, and critical infrastructure that support WPAFB. Conversely, WPAFB significantly impacts local economies through its education, scientific research and development programs, and regional operations. This economic impact is felt as direct payroll spending, personal spending in the community, development, and construction contracts. The integrated nature of WPAFB in the surrounding counties and its built-up urban environment necessitate a collaborative and communicative relationship between the local community and the installation.

### Counties

Ohio is divided into 88 counties, each governed by an elected board of commissioners. The commissioners are responsible for setting policies, managing finances, and overseeing county operations. Three counties within the Project Area participated in developing the WPAFB CUP.

# Clark County

| Year Established | Population | Area |
|---|---|---|
| **1818** | **136,001 (U.S. Census Bureau 2020)** | **402.5 sq. mi.** *397.5 sq. mi. of land* *5.1 sq. mi. of water* |

***Clark County is situated in central western Ohio. The County is east of WPAFB and is named after General George Rogers Clark, a hero of the American Revolution.***

| Cities | Townships | | Villages |
|---|---|---|---|
| ■ New Carlisle | ■ Bethel | ■ Madison | ■ Catawba |
| ■ Springfield (county seat) | ■ German | ■ Moorefield | ■ Donnelsville |
| | ■ Green | ■ Pike | ■ Enon |
| | ■ Harmony | ■ Pleasant | ■ North Hampton |
| | ■ Mad River | ■ Springfield | ■ South Charleston |
| | | | ■ South Vienna |
| | | | ■ Tremont City |

The County encompasses two cities, 10 townships, and eight villages. Clark County was primarily rural land focused on agriculture and ancillary businesses until it gained a foothold in magazine printing and rosebush sales in the 1930s and 1940s. The population saw continued growth for over 70 years until it began experiencing a steady decline over the past decade. Springfield, the county seat, is known as the "City of Roses" because of its history in horticulture.

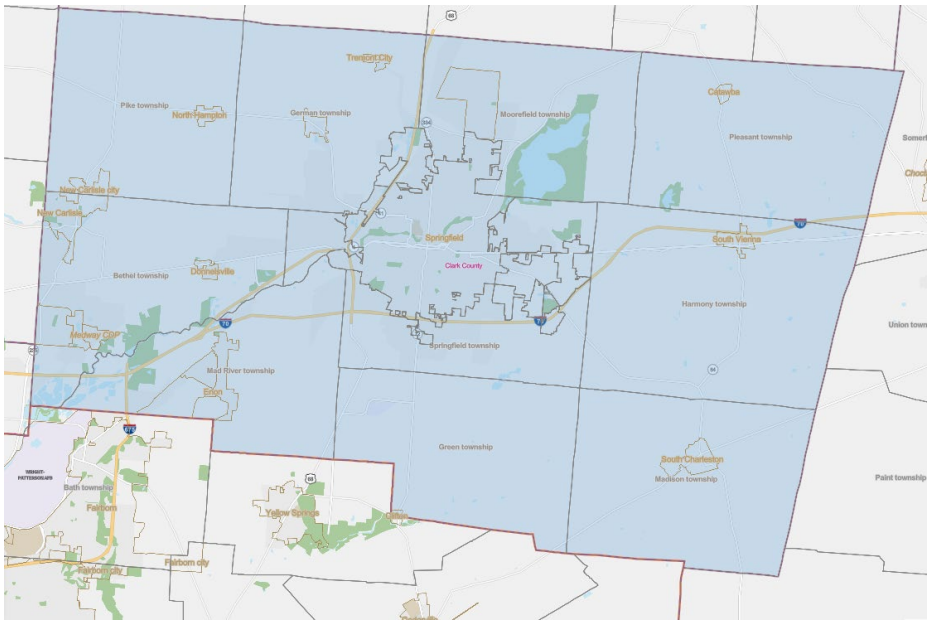
Clark County has several notable attractions and landmarks, including the Clark County Fairgrounds, the Springfield Museum of Art, the Westcott House (designed by Frank Lloyd Wright), and the Heritage Center of Clark County. The County is also known for its parks and outdoor recreational opportunities, including Buck Creek State Park, which features a large lake for fishing and boating, and the Little Miami Scenic Trail, which is popular for hiking and biking.

The economy of Clark County is diverse and includes a mix of manufacturing, agriculture, healthcare, and education. Major employers in the County include Springfield Regional Medical Center, Navistar, and Wittenberg University. Springfield is also home to the 178th Fighter Wing, an Air National Guard unit.

In recent years, the County has seen growth in the commuter population, where an increasing number of county residents choose to work in nearby urban areas but prefer to live in more rural areas. Overall, Clark County is a vibrant community with a rich history and various attractions and opportunities for residents and visitors alike.

Clark County's 2018 Comprehensive Plan establishes goals to guide the County's development over the next 10 to 20 years. The goals of the Plan are divided into four categories:

- **Economic Development:** The goal is to foster a diverse and sustainable local economy that creates good-paying jobs and supports the growth of existing businesses while attracting new investment.
- **Quality of Life***:* The goal is to improve the quality of life for residents by creating safe, healthy, and attractive communities that provide a range of housing options and access to quality education, healthcare, and recreational opportunities.




- **Infrastructure:** The goal is to ensure that the County's infrastructure supports economic growth and community needs, including transportation, utilities, and broadband access.
- **Environment:** The goal is to protect and preserve the County's natural resources, including farmland, forests, and waterways, by promoting responsible development, conservation, and sustainable land use.

To achieve these goals, the Plan includes specific objectives, strategies, and action steps, such as promoting the development of mixed-use areas, enhancing public transportation, improving water quality, and investing in workforce development programs. The Plan also involves ongoing engagement and collaboration with stakeholders, including residents, business owners, and community organizations, to ensure that it reflects the community's needs and aspirations.

These 2018 Comprehensive Plan goals are loosely echoed in the latest Clark County Strategic Plan 2021-2025, where the priorities include:

- Strengthening Clark County's economy and sales tax base,
- Retaining and attracting workforce, and
- Improving digital and physical access to government.

# Greene County

| Year Established | Population | Area |
|---|---|---|
| **1803** | **167,966 (U.S. Census Bureau 2020)** | **416 sq. mi.** *414 sq. mi. of land* *2.5 sq. mi. of water* |

***Greene County is in southwest Ohio. The County is east of WPAFB and is named after General Nathanael Greene, an officer in the Revolutionary War.***

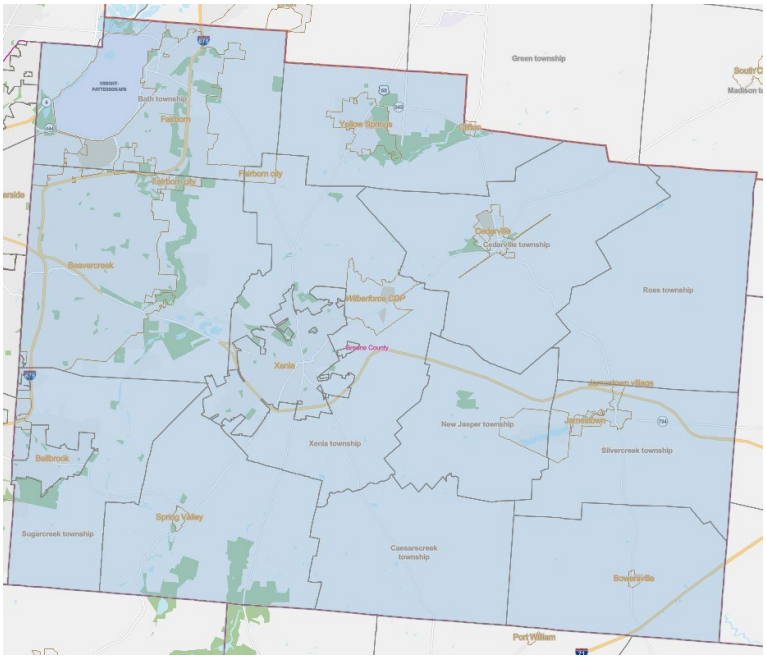
| Cities | Townships | | Villages |
|---|---|---|---|
| ■ Beavercreek | ■ Bath | ■ Ross | ■ Bowersville |
| ■ Bellbrook | ■ Beavercreek | ■ Silvercreek | ■ Cedarville |
| ■ Centerville (partial) | ■ Caesarscreek | ■ Spring Creek | ■ Clifton (partial) |
| ■ Dayton (partial) | ■ Cedarville | ■ Spring Valley | ■ Jamestown |
| ■ Fairborn | ■ Jefferson | ■ Sugarcreek | ■ Spring Valley |
| ■ Kettering (partial) | ■ Miami | ■ Xenia | ■ Yellow Springs |
| ■ Xenia (county seat) | ■ New Jasper | | |

The County encompasses seven cities, 13 townships, and six villages. Greene County is primarily suburban, where the denser populations are found near the major cities and around WPAFB, located in the county's western portion. The heaviest populations were found in Xenia, Beavercreek, and Fairborn.

Greene County has several notable attractions and landmarks, including the National Museum of the United States Air Force. Greene County Parks and Trails manages over 3,000 acres of parkland and over 100 miles of trails – 62 miles of paved multiuse trails, 36 miles of river trails, and 24 miles of hiking trails – as well as camping, fishing, and other outdoor activities. Popular parks in the County include Caesar Creek State Park, which features a 3,700-acre lake, and John Bryan State Park, which offers hiking trails, camping, and scenic views of the Little Miami River.

The County is also home to various cultural activities, including the Greene County Fair, which showcases local agriculture and features live music and other entertainment, as well as exhibits and programs focused on the visual arts organized by the Dayton Art Institute.

The economy of Greene County is diverse and includes a mix of manufacturing, healthcare, education, and technology. Major employers in the county, include WPAFB, Kettering Health Network, and Wright State University.




The Greene County future land use plan, Perspectives 2040, established six future land use goals and eight "character zones" to guide the county's growth and development over the long term. The key goals and objectives of the plan include:

- **Protect Farmland** — Protecting farmland from development and encroachment on agricultural activities is critical in the future land use plan.
- **Preserve Natural Resources** — Preserving the County's natural resources was identified as a high priority through the input received during the development of Perspectives 2040.
- **Revitalize Existing Communities** — Investing in existing communities is intrinsically linked to multiple plan priorities.
- **Focus on Strategically Balanced Land Development** — Thoughtful and strategic development is at the heart of the Perspective 2040 plan. By developing in this way, many of the plan's goals can be achieved.
- **Expand and Diversify the Local Economy** — A robust economy is essential to creating thriving communities.
- **Enhance Quality of Life** — Desirable places and spaces contribute to the quality of life experienced by the County's residents, and enhancing the County's abundant assets will further this goal.

These goals and future land use decisions are implemented through character zones. These future land use designations reflect the desired characteristics of each area and provide a countywide vision for where development, redevelopment, and preservation should occur. The eight character zones in Greene County are:

- Agriculture
- Commercial and Employment Center
- Community Center
- Institutional Campus
- Natural and Open Space
- Rural Living
- Suburban Living
- Urban Living

## Montgomery County

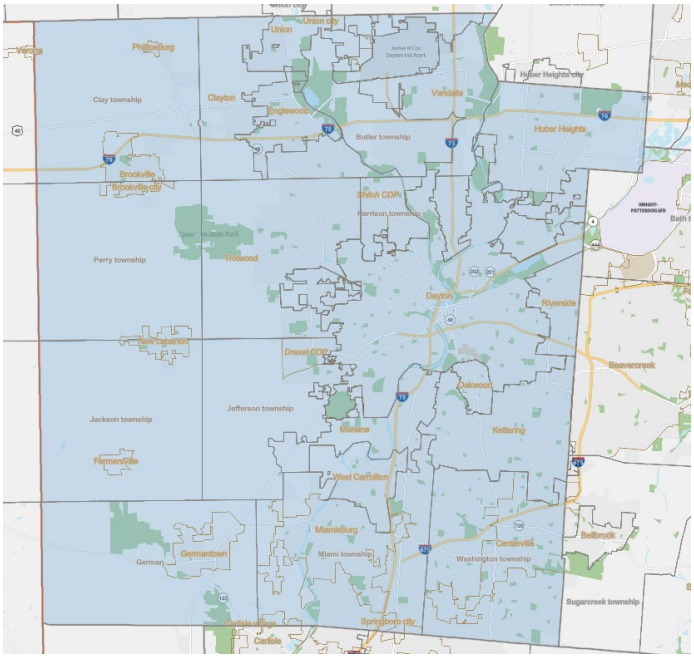
| Year Established | Population | Area |
|---|---|---|
| **1803** | **537,309 (U.S. Census Bureau 2020)** | **461.4 sq. mi.** *461.4 sq. mi. of land* *N/A mi. of water* |

***Montgomery County is in southwest Ohio. The County is west of WPAFB and named in honor of Richard Montgomery, an American Revolutionary War general killed in 1775 while attempting to capture Quebec City, Canada.***

| Cities | | Townships | Villages |
|---|---|---|---|
| ■ Brookville | ■ Miamisburg | ■ Butler | ■ Farmersville |
| ■ Centerville | ■ Moraine | ■ Clay | ■ New Lebanon |
| ■ Clayton | ■ Oakwood | ■ German | ■ Phillipsburg |
| ■ Dayton (county seat) | ■ Riverside | ■ Harrison | |
| ■ Englewood | ■ Trotwood | ■ Jackson | |
| ■ Germantown | ■ Union | ■ Jefferson | |
| ■ Huber Heights (partial) | ■ Vandalia | ■ Miami | |
| ■ Kettering | ■ West Carrollton | ■ Perry | |
| | | ■ Washington | |

The County encompasses 16 cities, nine townships, and three villages. It is known for its rich history and strong connection to aviation. Montgomery County's history dates to the early 19th century. It was an important center of innovation during the Industrial Revolution and played a key role in the development of aviation technology. Notable figures from the County's history include the Wright brothers, who developed the first successful airplane, and Paul Laurence Dunbar, a renowned African American poet and writer.

In addition to aviation and education, the County's economy is driven by various industries, including healthcare, manufacturing, logistics, and information technology. Major employers include Premier Health, WPAFB, and Dayton Children's Hospital.




Montgomery County has a diverse population spread throughout urban, suburban, and rural areas. The county government provides a range of services to residents, including public safety, healthcare, and environmental protection. The Dayton Art Institute, Victoria Theatre, the National Museum of the U.S. Air Force and the Dayton Aviation Heritage National Historical Park are a few cultural attractions visitors can explore in the County. Montgomery County offers diverse recreational and water activities for everyone throughout the year.

The County is also home to several parks and nature preserves, providing opportunities for outdoor recreation. Montgomery County has many parks and trails for hiking and biking, including the Great Miami Riverway, which has almost 100 miles of scenic views, historical landmarks, and recreation areas along the Great Miami River. In addition, the County has several lakes and reservoirs, such as Eastwood Lake and Germantown Dam, where visitors can enjoy boating, fishing, and swimming.

The 2012 Montgomery County Comprehensive Plan goals aim to guide the County's development over the next 10 to 20 years. The goals of the Plan are divided into five categories:

- **Economic Development:** The goal is to promote economic growth and development by fostering a business-friendly environment, supporting workforce development, and attracting new investment.
- **Housing and Neighborhoods:** The goal is to create vibrant, safe, and affordable neighborhoods that provide a range of housing options for residents, including seniors, low-income families, and people with disabilities.
- **Transportation and Infrastructure***:* The goal is to provide safe, efficient, and sustainable transportation options, including public transit, bike lanes, and pedestrian-friendly streets, and to invest in critical infrastructure, such as water and sewer systems.
- **Health and Human Services***:* The goal is to improve access to healthcare and social services, such as mental health care, addiction treatment, and job training to support the health and well-being of residents.
- **Environment and Sustainability:** The goal is to protect and enhance the County's natural resources, including air and water quality, green spaces, and farmland, and to promote sustainable land use and energy conservation.

The Plan includes specific objectives, strategies, and action steps to achieve these goals, such as promoting mixed-use development, expanding public transit, improving access to affordable housing, and investing in renewable energy. The Plan also involves ongoing engagement and collaboration with stakeholders, including residents, business owners, and community organizations, to ensure that it reflects the needs and aspirations of the community.

# Townships

Ohio townships are a form of local government that predates the state government. In Ohio, 1,308 townships provide a range of services to their residents. Each township is governed by a board of trustees, typically consisting of three elected officials who serve four-year terms. The trustees are responsible for setting policies, managing finances, and overseeing the township's operations. In addition to the board of trustees, Ohio townships may have a fiscal officer responsible for managing the township's finances and keeping records.

Ohio townships are funded through property taxes and may receive additional revenue from state and federal sources. They are responsible for various services, including police and fire protection, waste disposal, zoning, and cemetery management. They may also provide additional services such as parks and recreation programs, senior services, and community events.

Overall, Ohio townships play an important role in providing local government services to their communities and ensuring that residents can access the resources they need to thrive.

## Bath Township | Greene County

BATH TOWNSHIP
GREENE COUNTY
EST. 1807

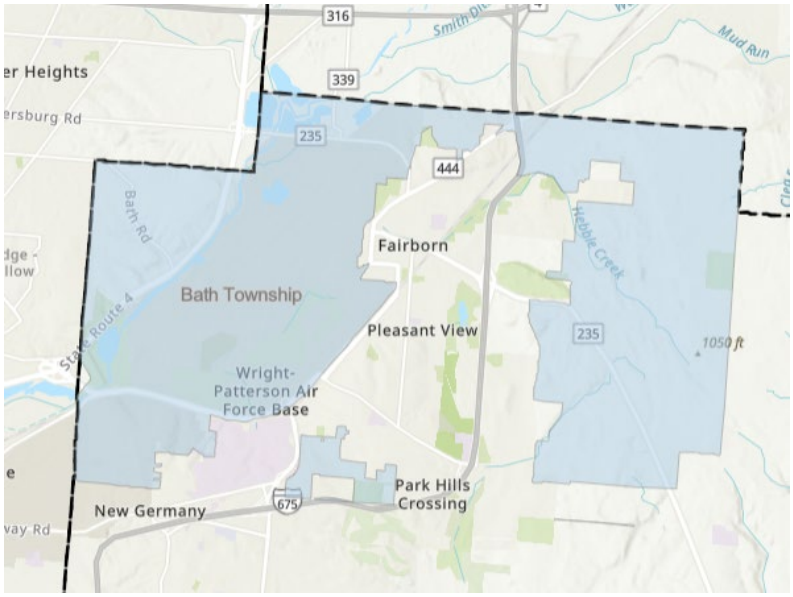
| Year Established | Population | Area |
|---|---|---|
| 1807 | 4,419 (U.S. Census Bureau 2020) | 37.8 sq. mi. |

***Bath Township includes the City of Fairborn and is east of WPAFB. The majority of WPAFB is located within Bath Township.***

Bath Township, formally organized in 1807, is a cornerstone of Greene County's rich history and development. Originally carved from Beavercreek Township, the area was settled by pioneers drawn to its fertile farmland, abundant natural resources, and access to the Mad River. This agricultural foundation fostered a thriving rural economy and helped establish the township as a vital contributor to the region's growth. Over the years, expanding transportation networks, including early roadways and rail lines, enhanced connectivity and paved the way for greater economic and community development. Wright-Patterson Air Force Base (WPAFB), established during the 20th century, became a significant driver of regional transformation, shaping Bath Township's identity and growth trajectory.

The township is home to part of the modern city of Fairborn, created through the merger of the villages of Fairfield and Osborn in the 1950s. This unique integration of history and growth illustrates Bath Township's adaptability to change while honoring its legacy. Despite the influence of suburbanization, the township continues to preserve its agricultural roots and rural charm, remaining an integral part of Greene County's heritage and identity.

Today, Bath Township is a dynamic community characterized by a balance between suburban expansion and rural preservation. Residential growth has brought new neighborhoods and community amenities, accommodating an increasingly diverse population. Proximity to WPAFB has catalyzed retail and service industry growth, with businesses thriving in response to the demands of military personnel, civilian employees, and residents. Fairborn and neighboring Beavercreek add to the township's economic vitality, offering additional commercial opportunities and regional connectivity.




While development has transformed parts of Bath Township, efforts to maintain its rural and agricultural character remain central to local planning efforts. Open spaces and farmland are actively preserved, ensuring the community retains its scenic landscapes and environmental value. Agricultural areas continue to serve as a reminder of the township's early history while contributing to its economic base.

## Bethel Township | Clark County

| Year Established | Population | Area |
|---|---|---|
| 1807 | 18,050 (U.S. Census Bureau 2020) | 34.6 sq. mi. |

***Bethel Township is in the southwestern corner of Clark County and sits north of WPAFB.***

Bethel Township was initially inhabited by the Shawnee tribe of Native Americans, later displaced by European settlers.

Bethel Township was established in 1807 and named after Bethel, Connecticut, the birthplace of many of its earliest settlers. The first settlers in the area were farmers who cleared the land and established farms. They were followed by merchants and tradespeople who set up businesses to serve the growing community's needs.

In the mid-19th century, the Township became an important center for broomcorn production, used to make brooms. The industry thrived for many years, and at its peak, Bethel Township produced over 75% of the world's broomcorn.

During the Civil War, Bethel Township played an important role in the Underground Railroad, a network of secret routes and safe houses used by African American slaves to escape to freedom in the North. Many of the Township's residents were abolitionists who helped hide and transport escaped slaves.

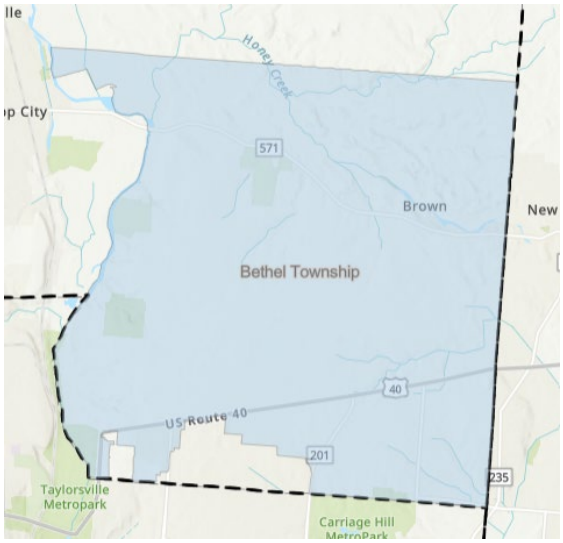
In the 20th century, the Township continued to grow and develop. It became a popular destination for tourists and vacationers, with several resorts and recreational areas within its borders. Bethel Township is a thriving community with residential, commercial, and agricultural properties today.

Some notable landmarks in Bethel Township include the Bethel Township Community Center, the New Carlisle Public Library, and the New Carlisle Fire Department. The Township has several parks and natural areas, including the George Rogers Clark Park and the Donnels Creek Wildlife Area.


## Bethel Township | Miami County

| Year Established | Population | Area |
|---|---|---|
| 1807 | 4,758 (U.S. Census Bureau 2020) | 34.8 sq. mi. |

***Bethel Township is in the southeast corner of Miami County and north of WPAFB.***




Bethel Township, Miami County, sits west of Clark County's Bethel Township. Like its neighbor, the area was initially inhabited by Native American tribes, primarily the Shawnee, before European settlement. In the late 1700s, settlers began to arrive in the area and establish farms. The Township grew and prospered, with agriculture and milling becoming dominant industries. During the Civil War, Bethel Township was a center of Underground Railroad activity. Many residents were abolitionists who helped escaped slaves on their journey to freedom in the North.

In the late 1800s and early 1900s, the Township experienced growth and development. The Miami and Erie Canal, which passes through the Township, helped facilitate trade and commerce. The Township also established new businesses and industries, including a creamery, a tile factory, and a sawmill.

Bethel Township is a rural community with a mix of residential, commercial, and agricultural properties. It has several parks and natural areas, including the Waco Wildlife Area, which offers hunting, fishing, and hiking opportunities.

Notable landmarks in Bethel Township include the Miami East Local Schools, the Bethel Township Fire Department, and the Bethel Township Community Center.

## Beavercreek Township | Greene County

| Year Established | Population | Area |
|---|---|---|
| 1803 | 8,345 (U.S. Census Bureau 2020) | 49.4 sq. mi. |

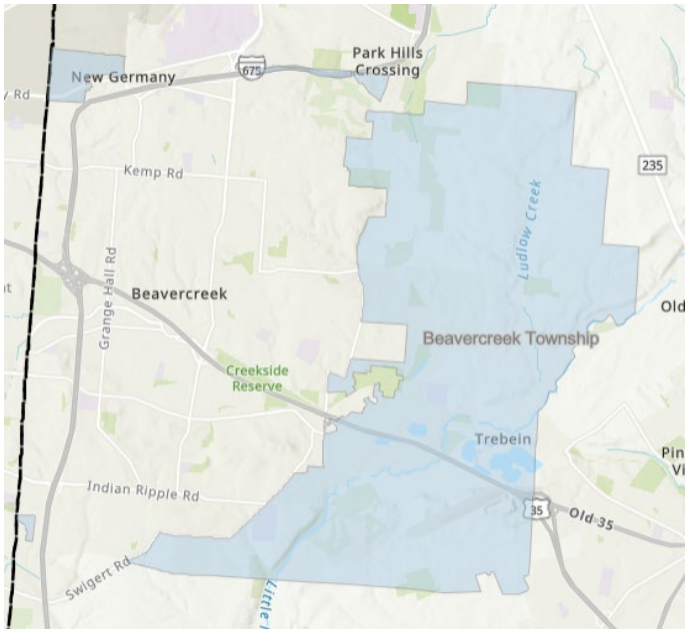
***Beavercreek Township is in eastern Green County and west of WPAFB.***

Beavercreek Township encompasses several populated places, most notably the City of Beavercreek and a portion of Fairborn to the north.

Beavercreek is one of the 12 townships in Green County. It was established in 1803; it was initially a fertile farming valley that has transitioned into more of a suburban residential area.

Beavercreek Township is known for its beautiful natural scenery. It has several parks and outdoor recreation areas, including the popular Indian Ripple Park, which offers hiking trails, picnic areas, and playgrounds.

The Township also has various businesses, including retail stores, restaurants, and manufacturing facilities. Beavercreek focuses on infrastructure upgrades, including developing a major arterial street along US-35 that is high-capacity.



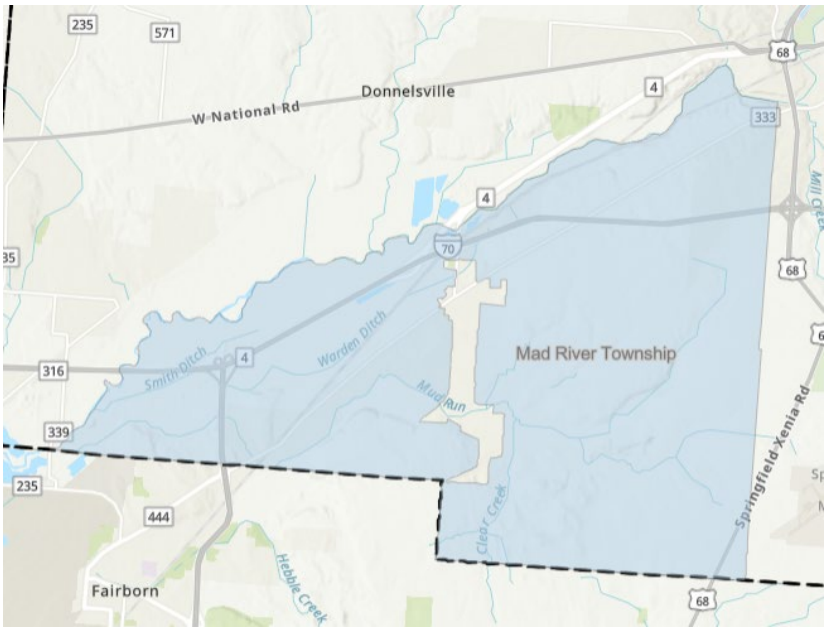

Overall, Beavercreek Township is a growing community that offers its residents a high quality of life, access to outdoor recreation, a strong economy, and excellent schools.

# Mad River Township | Clark County

| Year Established | Population | Area |
|---|---|---|
| 1807 | 8,535 (U.S. Census Bureau 2020) | 33.9 sq. mi. |

***Mad River Township is in the southwestern corner of Clark County and north of WPAFB.***

Mad River Township, one of the ten Clark County townships, occupies the northeast part of the project area. Its name derives from its adjacency to the Mad River on the west side, with the river forming its northern boundary. The Township is largely rural. The north area shares a border with the City of Springfield, and the southwestern area shares a border with WPAFB, Miami, and Bath Townships.



# Cities

Five major stand-alone cities near WPAFB were critical in developing the CUP: Dayton, Huber Heights, Beavercreek, Riverside, and Fairborn. They are described below.

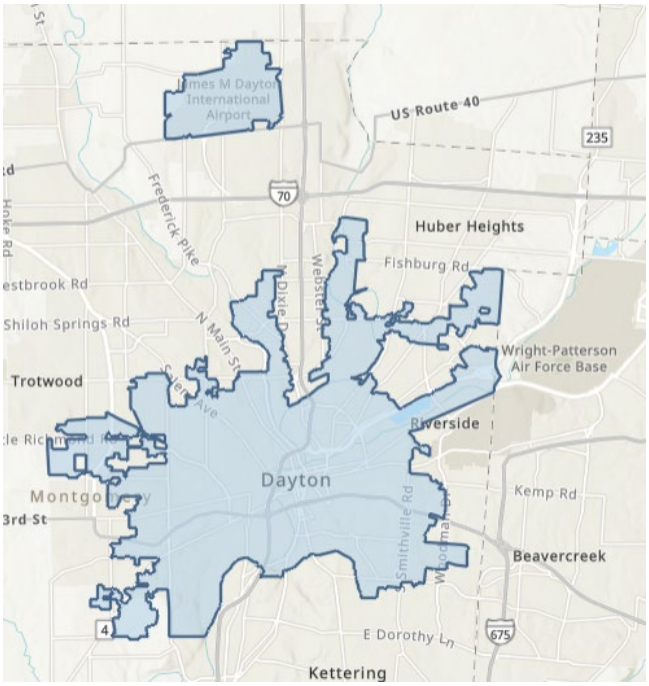
## Dayton | Montgomery County and Greene County

**Year Established**
**1796**

**Population**
**137,644 (U.S. Census Bureau 2020)**

**Area**
**56 sq. mi.**

Dayton is the sixth-largest city in Ohio and the major metropolitan area southwest of WPAFB. Most of the City falls under the jurisdiction of Montgomery County. Dayton has historically been a marketing and shipping center. Economic development peaked in the mid-20th century, spurred by manufacturing, technological innovation, and the dawn of aviation.
It is home to 27 higher education institutions.




Dayton's planning department has created several documents to guide the City's future development, including the *2010 Greater Downtown Dayton Strategic Plan*, the *2020 Strategy for a Sustainable Dayton*, and the *2022-2026 Dayton Region Economic Development Strategy* in partnership with the Dayton Development Coalition and the Miami Valley Regional Planning Commission.

The **2010 Greater Downtown Dayton Strategic Plan** encompasses the Central Business District, situated on a river corridor and growing into an aerospace hub. The Plan identified goals for economic development, vibrancy, and public space and infrastructure, where the goals include retaining jobs and growing the workforce to 50,000; creating an urban neighborhood with 18-hour-a-day street activity by developing 2,500 new housing units in 10 years; and positioning the greater downtown as a center that builds upon the unique qualities of the urban place.

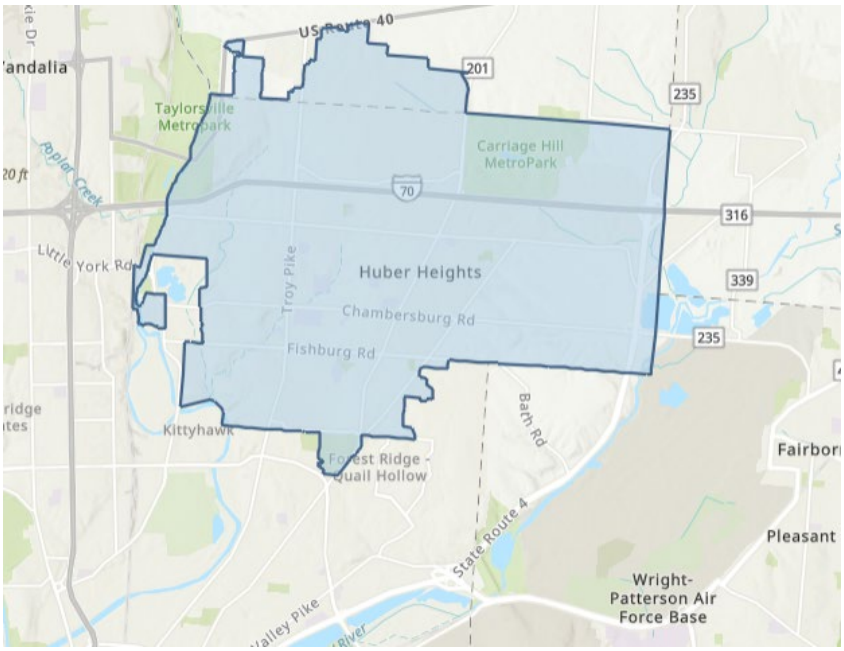
The **2020 Strategy for a Sustainable Dayton Plan** implementation involved creating a public/private oversight committee to oversee progress, report to the community, and champion the vision, where the strategy was built on a framework of equity, climate mitigation, infrastructure, resiliency, and economic development. This framework was applied to nine focus area projects, which included ground and surface water, air pollution, renewable energy, climate change adaptation, solid waste management, land use and community gardens, transportation, financial, and environmental awareness projects, which were monitored and managed by the Dayton Sustainability Office.

In 2022, the five-year 2022-2026 Dayton Region Economic Development Strategy was published, and according to this strategy, it was determined that the primary industry services in Dayton are the federal government, business, insurance, aerospace vehicles and defense, and automotive manufacturing.

The strategy also determined that the growing industries in the region include logistics and distribution, biosciences and biotechnology, cyber technology and digital engineering, advanced air mobility, energy production, and alternative energy.

## Huber Heights | Montgomery and Miami County

| Year Established | Population | Area |
|---|---|---|
| 1981 | 43,439 (U.S. Census Bureau 2020) | 22 sq. mi. |




Huber Heights is primarily a residential community with several neighborhoods and housing developments scattered throughout the city. It is known for its strong sense of community and commitment to providing excellent services and amenities for residents.

The city features several parks and outdoor recreation areas, including the Carriage Hill MetroPark, located on the City's northwestern edge. The park offers hiking trails, fishing, and a working historical farm.

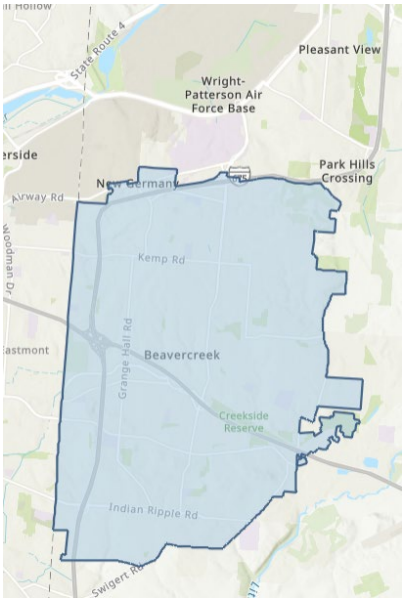
Formerly Wayne Township, Huber Heights was incorporated as a city in 1981. The city is the third largest and one of the fastest-growing suburbs in the Dayton Metropolitan Area.

The **2011 Comprehensive Plan** defines goals in marketing, economic development, redevelopment/reinvestment, community character, fiscal balance, coordination/cooperation and connectivity, quality of life, and quality of public services. The Plan also identifies "character action areas" that set priorities for development initiatives, which include gateways and corridors, preservation and protection, growth and enhancement, reinvestment and enhancement, and extra-jurisdictional areas.

Huber Heights has proposed realigning New Carlisle Pike to link with East Chambersburg Road near State Routes 4/235. This realignment will provide alternative routing, relieve congestion, and open commercial development opportunities near Wright-Patterson AFB. The reconfigured route will improve traffic safety and provide enhanced access during peak hours, supporting a quick and efficient response for military operations. As Huber Heights develops, the additional infrastructure support from the realignment strengthens the regional transportation network essential for mission continuity at Wright-Patterson AFB.

## Beavercreek | Greene County

| Year Established | Population | Area |
|---|---|---|
| 1980 | 46,549 (U.S. Census Bureau 2020) | 26.63 sq. mi. |




WPAFB and Wright State University are located northwest of Beavercreek. The City of Fairborn neighbors Beavercreek to the north, the Cities of Kettering and Riverside border it to the west, and the Beavercreek and Sugarcreek Townships border it to the east and south.

The area was first settled in the early 1800s as the Dayton region grew, but the city was not officially incorporated until 1980. It is home to several large research and manufacturing firms and commerce centers, where numerous defense industry contractors and/or Air Force civilian employees reside since Beavercreek is considered one of the more desirable places to live due to great schools and the livability of the region, which hosts two major commerce centers: the Mall at Fairfield Commons and Greene Town Center.

In 2015, the city published its land use plan, and in 2020, it published the land use maps. The city has four broad categories to encompass specific types of use and varying intensity of land use.

- **Open Space - Public Use:** Open Space includes public land, public parks, public recreation sites, environmentally critical areas such as floodways, passive open space designed to control and direct growth, and property owned and used by the City of Beavercreek or other governmental entities.
- **Residential:**
  - High Density — less than 9.51 dwelling units per acre
  - Low Density — less than 3.01 dwelling units per acre
  - Medium Density — more than 3.01 and less than 6.01 dwelling units per acre
  - Residential Offices — A mixture of residential uses and small-scale office and professional service establishments act as a transition between established residential neighborhoods and nonresidential uses.

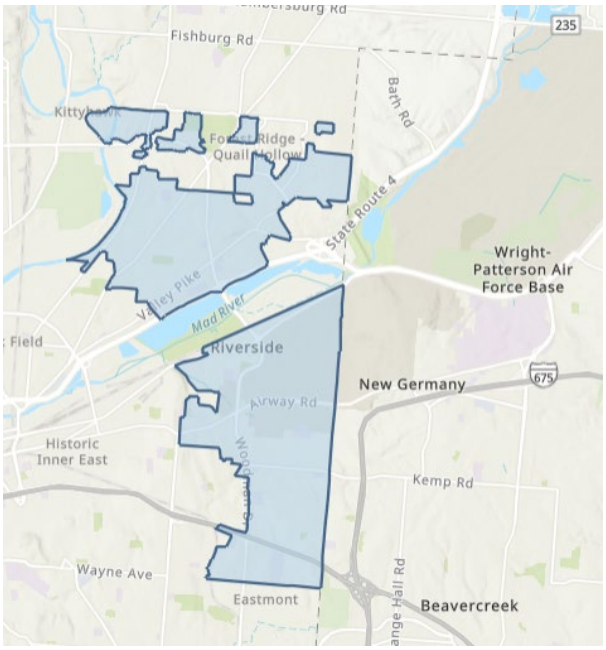
- **Commercial:**
  - Community Commercial — Community Commercial is geared toward a market the size of the entire City and provides a broader range of merchandise and comparative shopping opportunities, in addition to convenience-type retail and service establishments that are usually found in Neighborhood Commercial-Office developments.
  - Mixed Use — These developments feature a full range and variety of commercial, office, and residential activity aspects that provide adequate and suitable space for mixed-density residential, developed with accompanying commercial and office uses.
  - Neighborhood Commercial — Neighborhood Commercial developments are small projects containing uses intended to provide for the daily needs of nearby residents.
  - Regional Commercial — Regional Commercial developments provide a full range and variety of all aspects of commercial activity, oriented around one or more major department stores.
- **Research and Development, Office, Light Industrial - High Tech Manufacturing:** Collectively, these uses lend themselves toward the design of research and business park employment centers. This type of development requires public utilities, such as three-phase electric power, gas, water supply, and wastewater disposal. The availability and capacity of such utilities are major factors in the attractiveness of developed properties within this land use category.

The City of Beavercreek is working with ODOT on a transportation project to improve the I-675 and Grange Hall interchange. This project aims to ease traffic congestion for southbound commuters heading to the base by reducing delays, improving traffic flow, and creating faster and more reliable routes. For Wright-Patterson AFB, these enhancements mean enhanced operational readiness, with a more dependable pathway for personnel commuting from the south. An improved interchange also benefits resiliency by offering an effective evacuation route and supporting emergency base logistics.

## Riverside | Montgomery County

| Year Established | Population | Area |
|---|---|---|
| 1995 | 24,474 (U.S. Census Bureau 2020) | 9.8 sq. mi. |

Located in Montgomery County, the City of Riverside is a suburban city bifurcated by the Mad River and Eastwood Lake, where the eastern reach of the city abuts WPAFB and the City of Beavercreek. The City of Riverside is the largest community south and west of the base perimeter.




The City of Riverside adopted its latest Comprehensive Land Use Plan, "ONE Riverside," in 2023. Because Riverside's geography is distributed and not contiguous, the plan calls for redevelopment in three key nodes, or subareas, across the city. The Rohrer Boulevard subarea calls for mixed-use redevelopment near Rohrer Park in Riverside's northern neighborhoods. The plan envisions a neighborhood/city center with residential units, commercial/office space, and improvements to the existing park.

The Springfield St. Corridor subarea is centered at the intersection of Harshman Rd. and Springfield St., adjacent to WPAFB and the National Museum of the United States Air Force (NMUSAF). Potential improvements in this subarea include technology and innovation uses, secure spaces, and amenities to support the NMUSAF and Area B.

Additionally, the city has received funding from USDOT and Congressman Turner to reimagine the Woodman Corridor from Springfield St. south to US 35. The proposed corridor improvements contemplate replacing the intersection at Springfield St. and Harshman with a roundabout to slow traffic, improve safety, and create a unique sense of place near the installation. Multimodal improvements to the roadway adjacent to the base are also included in the proposed corridor redesign, as well as additional safety features designed to slow traffic, reduce incursions from the roadway into the Base fence, and improve access to the NMUSAF and Area B.

Finally, the Spinning and Burkhardt Road subarea on the south end of Riverside envisions redeveloping old shopping centers into neighborhood/city center uses featuring residential units, commercial/office spaces, and additional park acreage.

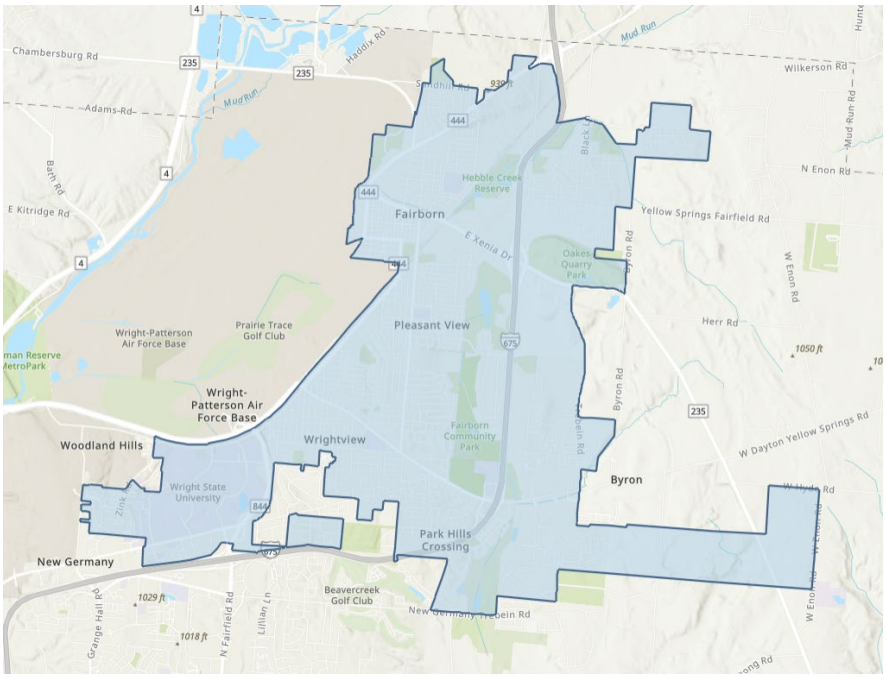
The city is also updating its zoning code to align more closely with the ONE Riverside plan and CUP process.

## Fairborn | Greene County

**Year Established**
**1950**

**Population**
**34,510 (U.S. Census Bureau 2020)**

**Area**
**14.58 sq. mi.**




The City of Fairborn is in Greene County. It was created after merging two older villages, Fairfield and Osborn. Once a small pioneer settlement, the City of Fairborn has seen many decades of development spreading from its origin on the corridor connecting Dayton and Springfield, now Broad St/SR-444. During the two decades immediately following the incorporation of Fairborn in 1950, The city grew by 600%. Its sudden growth was due to the development and economic impact of WPAFB, with Fairborn, who has created a symbiotic relationship and strong ties with the base.

The Comprehensive Land Use Plan was last updated in 2016 and established four districts:

- Central District
- Downtown District
- East District
- University District

These districts are based on development patterns and assist the evaluation process in land use planning. Proximity to one of the largest Air Force bases in the country positions the Downtown District for a high level of exposure to Air Force personnel and visitors. Additionally, in the heart of the Central District is Five Points, a commercial node with great potential to increase the density of uses and the tax base for the surrounding neighborhoods. Separating Fairborn and WPAFB is Kauffman Avenue, also located in the Central District.

The City of Fairborn published two documents to guide future development, which include the 2019-2023 and the 2020-2024 5-year Capital Improvement Plans (CIPs), and the Development Services Department was tasked with their implementation and management.

The 2019-2023 CIP defined four key areas of focus for future development:

- Enhancing business development activity and strengthening partnerships with local and state partners;
- Generating attention via marketing and public relations activities with special event promotion and cross-marketing properties to fill vacant space; increasing real estate development by implementing a property database and search tool for increased marketing and improving utilities;

- Creating a Fiber Network Master Plan; and
- Creating and/or altering internal programs and policies to allow the Development Services Department to drive new investment and create a more business-friendly environment.

The 2020-2024 CIP examined trends in service demand and growth and outlined several key economic impacts to influence the City's economic outlook. They include:

- Proximity to WPAFB and future growth;
- Proximity to Wright State University and the growth of education, and the abundance of buildable land with easy access to transportation infrastructure;
- The development potential due to the correlation of multiple transportation options available, such as an active rail corridor, the key interstate highways of I-675/I-70, and nearby airport access;
    - A new, more aggressive internal approach to economic development, and improving residential development throughout the city with increasing price points; and
    - Aggressive redevelopment and infrastructure efforts within the city's strategic corridors are designed to catalyze new development.

# Additional Community Partners

WPAFB has been a key fixture in the regional economy for generations. Due to its unique nature as an innovation center, WPAFB has been integrated into the local and regional communities. Some of the prominent regional organizations and agencies are listed below:

## Dayton Development Coalition

**Year Established**

**1994**

**Primary Service Area**

**14 Counties**

The Dayton Development Coalition (DDC) is a private, nonprofit organization seeking to bring economic development, jobs, and prosperity to the 14-county region surrounding Dayton and WPAFB. A 30-member board of economic leaders and community representatives governs the DDC. The DDC works to develop the economy of the Dayton region by working as a team with community partners and emphasizing a forward-looking economic development strategy that takes advantage of the abundant resources of the community. These efforts by the DDC and its partners have resulted in growth for the region's largest employer, WPAFB, and the other participating cities, communities, townships, and villages that comprise the Dayton region.

## Miami Valley Regional Planning Commission

**Year Established**

**1964**

**Primary Service Area**

**Darke, Greene, Miami, Montgomery, Preble, Shelby & Northern Warren counties**

Founded upon regional collaboration, cooperation, and consensus-building principles, the Miami Valley Regional Planning Commission (MVRPC) serves as the common ground where area partners work toward a shared vision across the region.

The MVRPC has served the planning needs of the Miami Valley in Southwest Ohio since 1964, serving the Region for more than 60 years. The MVRPC serves as the MPO for Montgomery, Miami, and Greene counties, plus a portion of Northern Warren County. Since June 2024, MVRPC has been the RTPO for Darke, Preble, and Shelby Counties. MVRPC also provides regional and environmental planning support to members in seven counties. MVRPC policies guide agency interactions in many areas, including implementing project funding, public participation in the planning process, public records retention and access, and non-discrimination.

## Wright-Patterson AFB Joint Airport Zoning Board

**Year Established**

**1975**

**Primary Service Area**

**Clarke, Greene, Miami & Montgomery Counties**

The Zoning Code, which is in effect today, was updated in 1997.

The Joint Airport Zoning Board consists of 12 people duly qualified and seated as members Dof the Board of Commissioners of Clark, Greene, Miami, and Montgomery Counties (three from each). The Board elects a chairman and vice-chairman from its members; each serves for one year or until a successor is elected to take office.

For enforcement and administration of the Joint Airport Board's adopted Zoning Regulations, the administrative agency is the Chief Building Inspector for Montgomery County, also known as the Airport Zoning Inspector. Subject to approval of the Board, the Airport Zoning Inspector, with subsequent approval of the local jurisdiction, may appoint a Deputy Zoning Inspector from each participating government jurisdiction to issue permits within their respective jurisdiction.

## Wright-Patterson Regional Council of Governments

**Year Established**

**2022**

**Participating Governments**

**Cities of Dayton, Huber Heights, Fairborn, Beavercreek, and Bath and Riverside townships**

The Wright-Patterson Regional Council of Governments (COG) coordinates the powers and duties of member communities, which include the cities of Beavercreek, Dayton, Huber Heights, Fairborn, Riverside, and Bath Township, to better serve the regional community and benefit the economic development and land use planning for the entire region. Ultimately, this supports growth and operations at WPAFB and the neighboring Springfield Air National Guard Base. The Wright-Patterson Regional COG has a 2030 Strategy with four success pillars: advocacy, outreach, partnerships, and industry.

## Wright State University

Wright State University is a public research university that became independent in 1967. It is named in honor of Orville and Wilbur Wright, aviation pioneers who were long-time Dayton residents. Much of the land the campus is built upon was donated by the United States Air Force. Today, Wright State educates almost 10,000 students on its Dayton campus and offers 315 undergraduate, graduate, doctoral, and professional programs through six colleges and one medical school. The Carnegie-classified research department partners with the National Institute of Health, the National Science Foundation, the United States Air Force Research Laboratory, the Defense Advanced Research Projects Agency, and the Office of Naval Research to research innovative science and technology.

# 4.2 Population Trends

Population trends help outline the regional context for growth projections and development within the CUP Project Area. These trends can be useful for various purposes, including urban planning, resource allocation, economic analysis, and policymaking. Additionally, year-over-year growth may highlight future compatibility concerns between military missions and surrounding communities. Understanding population trends can help accentuate future compatibility issues between WPAFB and the surrounding communities.

Identifying where population growth occurs is essential for planning future development for local and regional communities. Table 4-1 shows the change in population for the jurisdictions within the CUP Project Area from 2010 to 2020. U.S. Census decennial data were used for population counts. In general, the population in the region increased. Various potential drivers of migration within the area include job opportunities, educational choices, governmental policies, and housing availability.

**Table 4-1** 2010-2020 Regional Population Change

| Jurisdiction | 2010 Population | 2020 Population | Percent Change |
|---|---|---|---|
| Bath Township | 6,420 | 4,419 | -31.2% |
| Beavercreek Township | 5,762 | 8,345 | 44.8% |
| Bethel Township (Clark County) | 18,505 | 18,050 | -2.46% |
| Bethel Township (Miami County) | 4,843 | 4,758 | -1.76% |
| Mad River Township | 11,145 | 10,984 | -1.44% |
| City of Beavercreek | 45,193 | 46,549 | 3.00% |
| City of Dayton | 141,527 | 137,644 | -2.74% |
| City of Fairborn | 32,352 | 34,510 | 6.67% |
| City of Huber Heights | 38,101 | 43,439 | 14.01% |
| City of Riverside | 25,201 | 24,474 | -2.88% |
| Enon Village | 2,443 | 2,449 | 0.25% |
| Clark County | 138,333 | 136,001 | -1.69% |
| Greene County | 161,573 | 167,966 | 3.96% |
| Montgomery County | 535,153 | 537,309 | 0.40% |

*U.S. Census Bureau, 2010 and 2020*

## Population Projections

The 2022 Dayton Region Economic Development Strategy projects a decline in population for the 20-30 age group and the 50-65 age group over the next 10 years. The projected declines may impact the workforce in the greater 13-county region; however, caution is advised as the federal government recently has invested significantly in technology and infrastructure, which will likely stimulate or mitigate the projected out-migration of the aging population (50-65) and the recent graduate class (20-30). More locally, the population will likely remain stable within Clark, Greene, and Montgomery Counties due to greater economic opportunities and diverse employers.

# 4.3 Economic Trends and Growth Potential

Economic trends for the CUP Project Area can help identify growth potential and how that growth may directly relate to WPAFB. Economic trends include projected jobs in the area, median household income, the population currently in the workforce, and the top industries in the CUP Project Area.

# Job Projections

The DDC states that between 2021 and 2025, the Dayton region is expected to see a 1.3% increase in population but a 1.8% increase in jobs. According to the U.S. Bureau of Labor Statistics, population is an important factor in determining the size and composition of the labor force, which is the number of people working or looking for work.

Communities nationwide face potential labor shortages as the workforce ages and birth rates drop. The region is finding ways to develop, attract, and retain talent and a strong workforce. Other priorities focus on infrastructure, vibrant communities, small businesses and entrepreneurship, and a resilient economy. Employment projections by the Ohio Bureau of Labor Market Information say that the number of jobs in West Ohio is expected to increase by 0.6% between 2018 and 2028. This area comprises 12 counties: Auglaize, Champaign, Clark, Clinton, Darke, Greene, Fayette, Mercer, Miami, Montgomery, Preble, and Shelby. Ohio has six JobsOhio regions in the state, and West Ohio's projected job growth exceeds all but Central Ohio's (5.2%) and Southwest Ohio's (2.5%).

Industries expected to receive the most robust growth in Western Ohio include:

- Healthcare and social assistance (10.5%);
- Construction (8.9%);
- Professional, technical, and legal services (7.4%); and
- Transportation and warehousing (7.1%).

Sectors expected to receive the largest employment losses include:

- State government (-8%),
- Retail (-4%),
- Information technology (-3.9%), and
- Manufacturing (-3.8%).

(Source: Dayton Daily News/Cornelius Frolik, January 18, 2022)

Since 2010, the Dayton region's unemployment rate has remained at or below the state average. The labor force participation rate, comprised of adults 16 or older working or actively seeking work, exceeds state and national trends.

In 2019, before COVID-19, the U.S., Ohio, and Dayton region unemployment rates were the lowest, they had been in over two decades, where the U.S. and Dayton region rates hovered around 3.5%, and the Ohio rate was just above 4.0%. In 2020, the unemployment rates for all three began a sharp and steady increase between 6.0% and 7.2% in just 12 months. This spike has already started to decrease, and as of September 2022, the unemployment rate for the U.S. was 3.5%; for Ohio, it was 4.0%; and for the Dayton region, it was 3.9%. (Source: Dayton Region Economic Development Strategy 2022-2026 and Bureau of Labor Statistics, September 2022)

## Median Household Income

A good measurement of economic growth is the change in median household income for the communities within the CUP Project Area. All communities within the CUP Project Area substantially increased median household income from 2000 to 2020, with Dayton experiencing the lowest increase at 17.2% and the City of Huber Heights experiencing the largest increase at 25.6%. In 2010, the combined average median household income was $45,700; in 2021, the median household income in Clark, Greene, and Montgomery Counties was $65,057.

## Current Population in the Workforce

Population growth in the Dayton region outpaces statewide trends. Since 2012, rural areas of the region have experienced a higher growth rate than urban areas. However, both are projected to see declining growth in the coming decade. In 2022, a trend indicating a declining population in the Dayton region's urban and regional areas began; declines of up to 2% are expected between now and 2030 in both areas. However, the overall population for the Dayton region from 2020 to 2030 is expected to grow approximately 3%, which will be higher than the State's growth, projected to be about 2% during that timeframe. Meanwhile, national population growth is projected to be approximately 8% during that period.

**Strategic Priorities, Talent & Workforce Overview.** An analysis of data demonstrates that job growth is outpacing population growth across the Dayton region. Upon closer examination of the data, it becomes apparent that over the next decade, the region is expected to undergo a notable decline in population, particularly within the 20-30 and 50-65 age brackets, encompassing both the early and late stages of the workforce. These data points, combined with stakeholder feedback in the Successes/Strengths/Opportunities/Aspirations/Risks (SSOAR) inventory summary and analysis, identified the primary risks to the regional economy as the ability to attract and retain talent and workforce diversity and readiness, which points to a need for a regional focus on the CUP Project Area.

The Labor Force Characteristics for the period of 2012 to 2021 for the Dayton region showed population growth was 2.5% versus job growth, which was 4.6%. In September 2021, the unemployment rate for the region was 4.2%; from 2008 to the present, the lowest unemployment rate was 3.7% in 2019, and the highest was 11.2% in 2009, with a 64% labor force participation rate. (Source: Labor Force Characteristics — Ohio Department of Job and Family Services)

## Top Industries & Employers in the CUP Project Area

The projected job growth in the Dayton region and CUP Project Area is expected to remain within the major economic industries that exist today, which include military personnel and contractors, aerospace vehicles, and defense; health industry workers from administrative to professional; government employees supporting federal, state, county, and local governments; retail trade; professional, scientific; and general administrative and management services; as well as educational services, social assistance, and public administration.

Table 4-2 shows the major employers for the Dayton region and the number of employees.

**Table 4-2** Major Employers in the Region

| Large Employers in the CUP Project Area | Number of Employees |
|---|---|
| Dayton Children's Hospital | 3,341 |
| Honda of America Manufacturing, Inc. | 3,200 |
| Kettering Health | 12,419 |
| Lexis Nexis Group | 3,000 |
| Montgomery County | 4,284 |
| Premier Health Partners | 12,425 |
| Sinclair College | 3,163 |
| University of Dayton | 3,028 |
| Crown Equipment Corporation | 2,918 |
| Wright-Patterson AFB | 32,478 |

*Dayton Region Economic Development Strategy 2022-2026*

For the period from 2022 to 2026, the Dayton Region Economic Development Strategy — Talent & Workforce Strategies identifies efforts to:

- Encourage an integrated continuum of workforce preparation across the education and life stage spectrum,
- Align education and workforce development programs with industry needs and opportunities,
- Address structural barriers that inhibit workforce participation, and
- Promote the career opportunities available in the region.

# 4.4 Existing and Future Land Uses

Existing and future land uses within the CUP Project Area can be used to assess potential encroachments quickly. This section outlines the existing and future land uses planned for the communities surrounding and closest to WPAFB. Chapter 6: Compatibility Assessment further analyzes land use compatibility.

## Existing Land Use Surrounding Wright-Patterson AFB

The existing land uses indicate the current use of the land as described in detail below for each community located within the CUP Project Area. WPAFB is located within the Dayton metropolitan area. It is surrounded on three of four sides (west, south, and east) by various types and densities of existing development. The remaining north side is mostly undeveloped or used for agricultural farmlands, with a few low-density residential lots and commercial and industrial parcels.

The more developed and/or built-out areas on the west, south, and east sides of the CUP Project Area surrounding WPAFB include the more highly urbanized cities of Huber Heights, Riverside, Dayton, Beavercreek, and Fairborn, as

well as the western portion of Bath Township, which is located between the City of Riverside and WPAFB. The lesser-developed areas of the CUP Project Area include Beavercreek Township to the southeast; the eastern portion of Bath Township, located on the east side of the City of Fairborn; Enon Village and Mad River Township, which are both located to the northeast; and Bethel Township located in the northern and northwestern portions of the CUP Project Area.

The **City of Huber Heights** is in the northwestern portion of the CUP Project Area, and the existing land uses closest to WPAFB include mostly agricultural and conservation lands, with some very light, low-density residential uses closest to the base and fewer industrial uses more distant from the base.

The **City of Riverside** abuts the western edge of the western portion of Bath Township and is adjacent to the western edge of WPAFB. It is in the western portion of the CUP Project Area. The existing land uses for the The City of Riverside, closest to WPAFB, includes low—to high-density residential areas and a large area of mixed commercial uses.

The **portion of Bath Township is located west of WPAFB.** Due to the base's proximity, the WPAFB Zoning Codes for this area are very restrictive regarding development. The existing land uses mostly comprise the Mad River, Lyre Lake, and numerous open water reservoirs and holding ponds, with a small amount of undeveloped open land and some minor agricultural uses.

The **City of Dayton** is in the southwestern portion of the CUP Project Area, and the existing land uses closest to WPAFB include open and undeveloped land zoned as Well Head Operation (WO) with light industrial uses and a low-density residential housing subdivision located farther south and away from the base, according to the official Zoning Map.

The **City of Beavercreek** and **Beavercreek Township** are in the southeastern portion of the CUP Project Area, with the City of Beavercreek closest to WPAFB. Beavercreek Township is located on the eastern side of the City of Beavercreek. The existing land uses closest to WPAFB include commercial uses, residential/commercial mixed uses, and agricultural uses, all located on the north and west sides of the I-675 Interstate Loop, and that land is currently mostly undeveloped. On the east and south sides of the I-675 Interstate Loop, farther away from WPAFB, the existing land is zoned for residential planned unit developments, and it is mostly undeveloped for approximately one-half mile, with two low-density residential housing subdivisions located in that area.

The **City of Fairborn** is in the eastern portion of the CUP Project Area, where the City's western boundary abuts the east boundary of WPAFB. The City's western boundary runs the entire north-south length of the base, with a small portion of its jurisdiction running east and west along the southern boundary of the base. For the southern portion of the city located just below WPAFB, the existing land uses include most of this land being civic and institutional, where the Wright State University campus is located, with the remaining smaller percentage of land containing industrial and commercial planned development uses as well as professional office uses. Overall, development on this southern end is essentially built-out and has very low density. For the city's southern half, on the east side of the base, railroad tracks and SR-444 separate the city from the base. The existing land uses for this land closest to the base include an equal mix of medium- to low-density residential uses interspersed with a few commercial uses. This entire area is entirely built out. The land closest to the base in the city's northern half, located between SR-444 and the railroad tracks, is entirely built-out. About 50% of the existing land uses include medium- to low-density

residential uses, with about 30% of the remaining land farther from the base to the north utilized as very low-density light industrial uses. The remaining 20% of the land farthest from the base is an almost equal mix of conservation land with civic, institutional, and commercial uses.

The **portion of Bath Township located in the eastern part of the CUP Project Area**, to the east and north of the City of Fairborn, primarily consists of land zoned for general manufacturing and rural districts. Most of this land remains undeveloped, with some agricultural uses. The area also features the Mad River, several open-water reservoirs, and holding ponds. Less than 5% of this land is developed or built upon.

**Enon Village** and **Mad River Township** are in the north, and northeastern portions of the CUP Project Area, where most of the existing land uses closest to WPAFB include undeveloped and agriculturally developed lands. A small percentage of the land closer to Enon Village comprises very low-density residential uses, with an even smaller percentage of commercial uses.

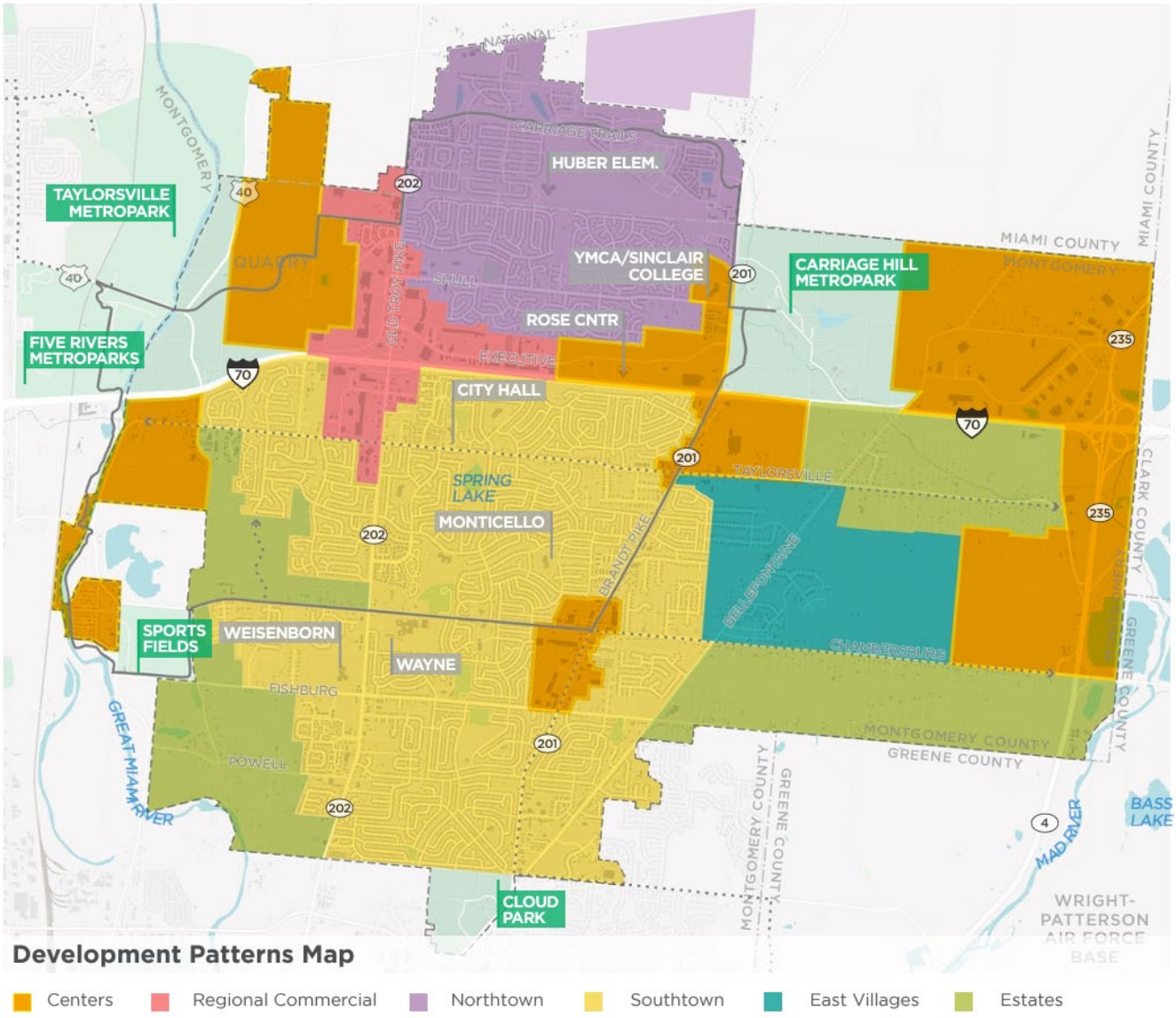
**Bethel Township** is in the northern and northwestern portions of the CUP Project Area. The land closest to WPAFB and south of I-70 is undevelopable mainly due to the large number of open water reservoirs and holding ponds. Still, the land that is developable in this area is in the southeast corner of the intersection of I-70 and SR-235. That area has essentially been built with a low-density residential housing subdivision. Otherwise, the land north of I-70 is mostly undeveloped or agriculturally developed, with a small percentage of that area containing some very low-density residential uses and an even smaller percentage of commercial uses.

## Proposed Future Land Use Surrounding WPAFB

The proposed land uses for the areas surrounding WPAFB are described below and arranged by the community. Available future land use maps have been included.

**City of Huber Heights** (northwestern portion of the CUP Project Area): Its Comprehensive Plan and Future Land Use Map (FLUM), as shown in Figure 4-1, call for agricultural uses and conservation lands to be protected and preserved into the future, leaving little opportunity for future development in this area closest to the base.

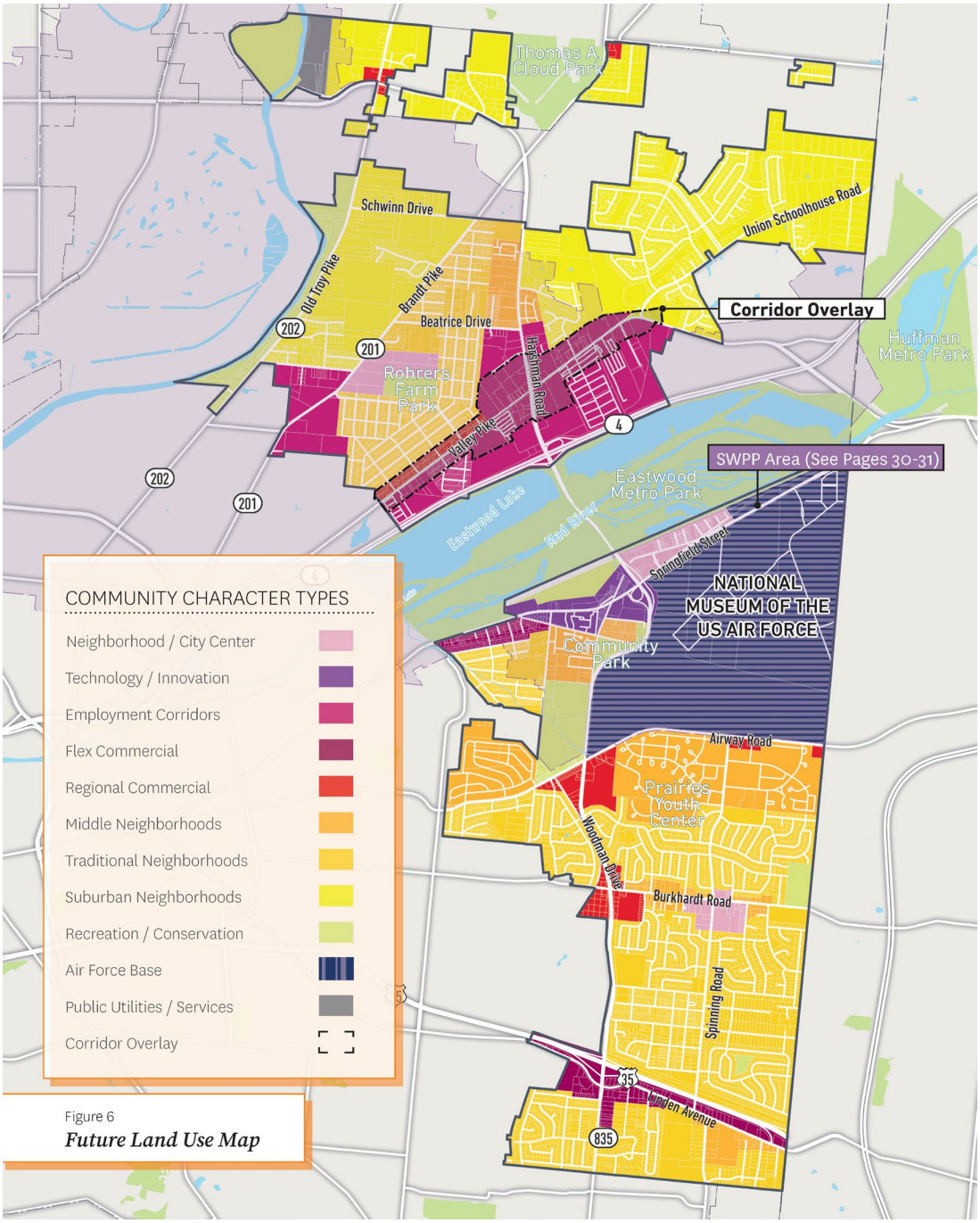
**Figure 4-1** City of Huber Heights Land Use




*Source: City of Huber Heights Comprehensive Plan, 2011*

**City of Riverside** (western portion of the CUP Project Area): The FLUM shown in Figure 4-2 calls for more low- to high-density residential uses, with a large area of mixed commercial uses to be developed until the remaining land becomes built out. The city's current land use map is being redrawn pending the adoption of a revised zoning code, which is anticipated by 2026.

**Figure 4-2** City of Riverside Future Land Use

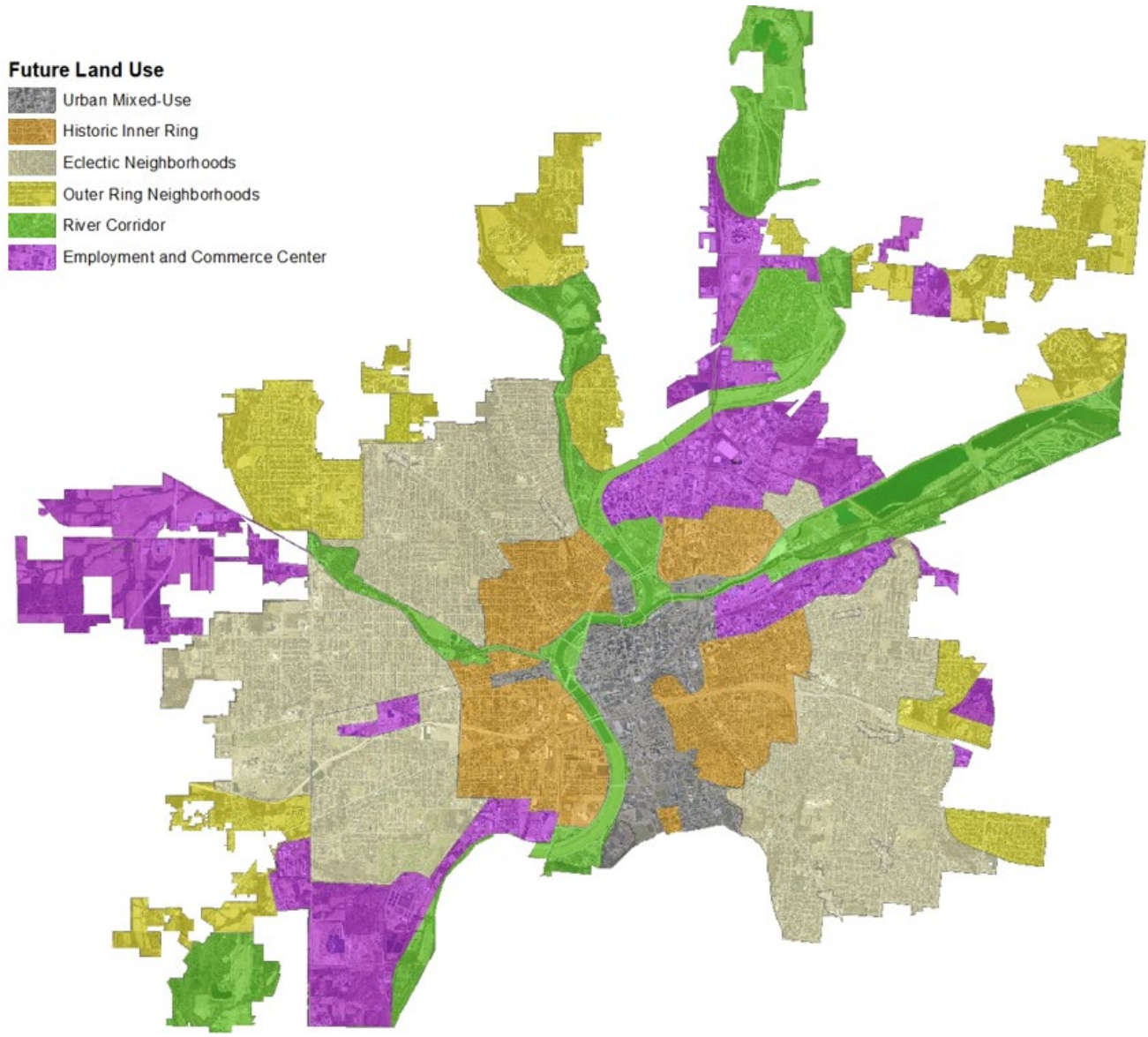



*Source: City of Riverside Comprehensive Plan, 2023*

The portion of **Bath Township located west of WPAFB** (the western portion of the CUP Project Area): The proposed future land uses for this area are essentially nonexistent due to the development restrictions placed upon it by the WPAFB Zoning Codes. This area also contains the Mad River, Lyre Lake, and numerous other open-water reservoirs and holding ponds, which make future development prohibitive.

**City of Dayton** (southwestern portion of the CUP Project Area): The proposed future land uses, as shown in Figure 4-3 includes the most available land zoned as WO on the official zoning map for the properties closest to WPAFB. This is a Source Water Protection Area (SWPA) where future land development is prohibitive due to the restrictions imposed by the Zoning Codes.

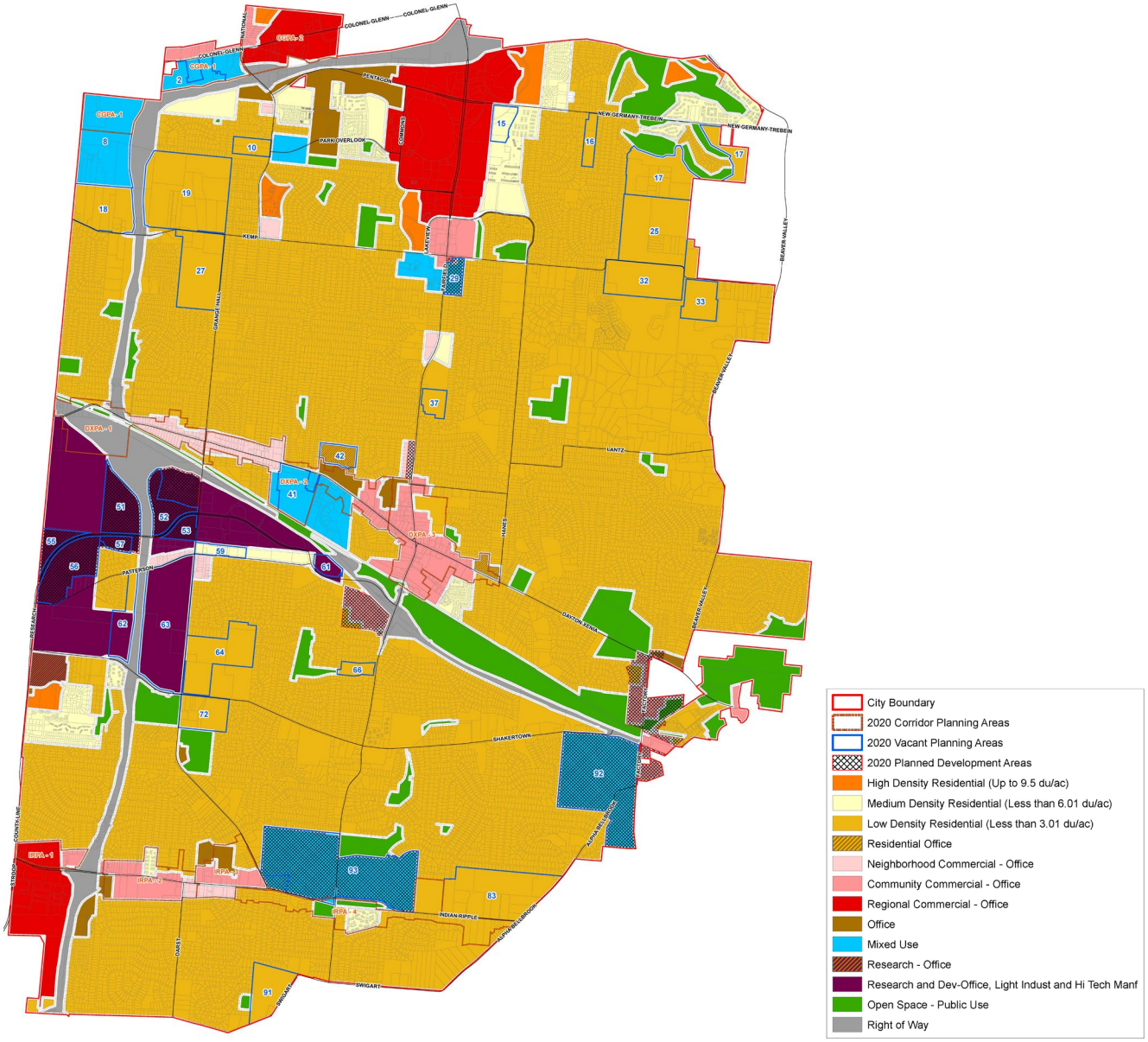
**Figure 4-3** City of Dayton Future Land Use




*Source: City of Dayton Comprehensive Plan, 2022*

**City of Beavercreek** and **Beavercreek Township** (southeastern portion of the CUP Project Area): Essentially, all the land within a mile of WPAFB is zoned as commercial, mixed-use, or residential planned unit development, according to the Zoning Codes and official Zoning Map. This allows for greater development flexibility than standard Euclidean Zoning but requires that what gets built cannot deviate from the approved Development Plans and/or the enforceable Development Agreement. The proposed future land uses for this area, as shown in Figure 4-4, closest to the base are all commercial and mixed-use planned unit developments. Residential planned unit developments are permitted farther from the base, ensuring that what gets built closest to WPAFB can be better controlled.

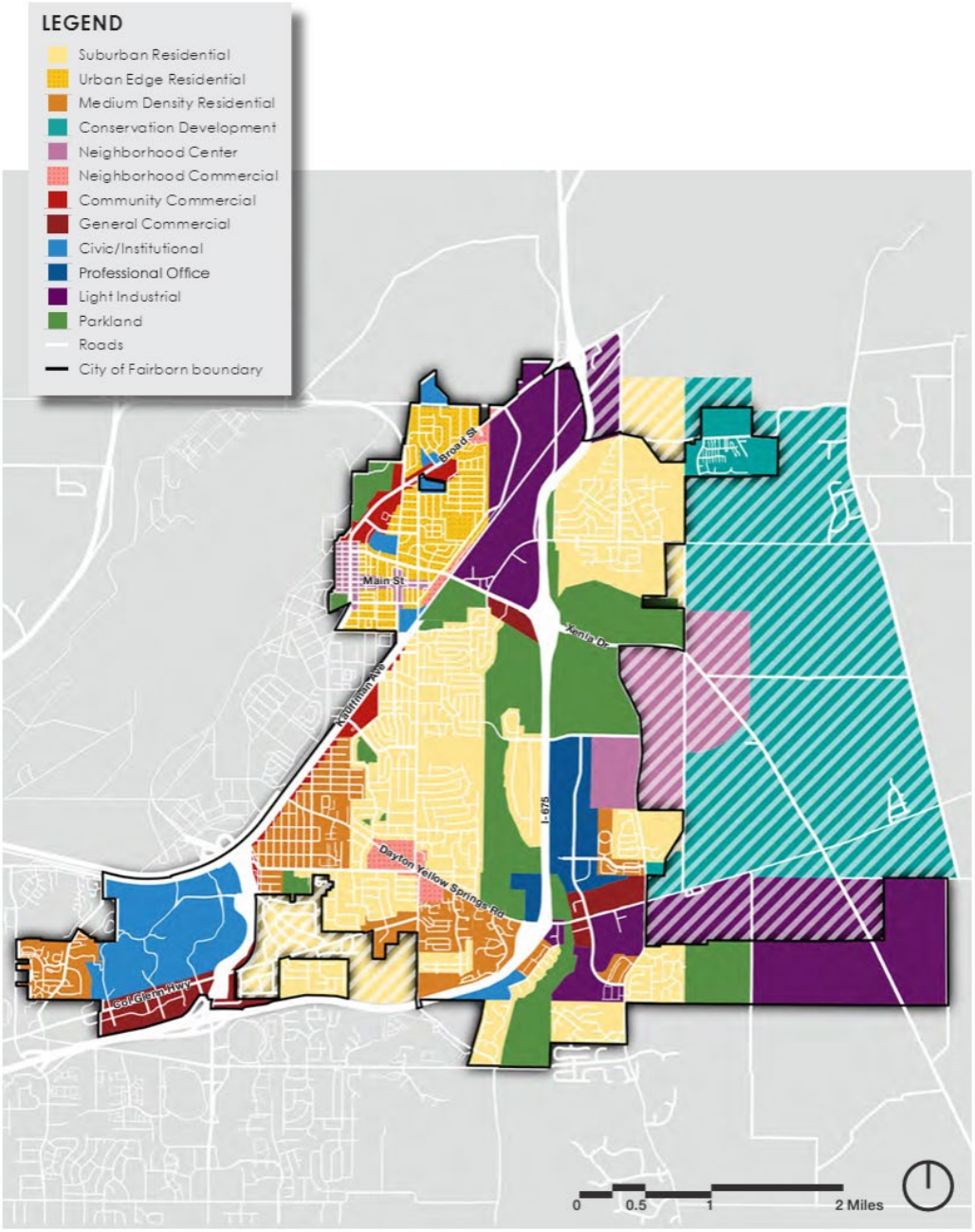
**Figure 4-4** City of Beavercreek Land Use




*Source: City of Beavercreek Comprehensive Plan, 2020*

**City of Fairborn** (the eastern portion of the CUP Project Area): All the land closest to WPAFB that can be developed has been developed. This area has been entirely built out with little to no capacity for any future growth or development, except for the large light industrial area located farthest from WPAFB and at the farthest north portion of the City, which still has room for more light industrial type of uses in that area. Figure 4-5 depicts the City of Fairborn's Future Land Use.

**Figure 4-5** City of Fairborn Future Land Use




*Source: City of Fairborn Comprehensive Plan, 2016*

The portion of **Bath Township located due east of Fairborn** (the eastern portion of the CUP Project Area): The potential for future development in the eastern part of Bath Township, situated several miles from WPAFB, is significant. However, the possibility of development in the northern and western areas of the Township is not ideal due to existing natural and man-made water features and the Township's proximity to the base.

**Enon Village** and the **Mad River Township** (northeastern portion of the CUP Project Area): The potential for developing multiple mixed types of land uses is very high throughout these areas. Still, the land that is developable closest to WPAFB is located several miles north and east of the base's northern boundary.

**Bethel Township** (northern portion of the CUP Project Area): The potential for future land uses in this area south of I-70 is almost nonexistent. The area that could be developed has been developed with a low-density residential housing subdivision, and the remaining area south of I-70 is undevelopable due to the large number of open water reservoirs and holding ponds. The land north of I-70 is several miles north of the northern boundary of WPAFB.

(Sources: Community Zoning Codes, Zoning Maps, Future Land Use Maps & Google Earth Pro 2022)

# 4.5 Housing Trends

Housing trends typically coincide with population growth and can indicate economic activity and vitality in the area. Rapid housing growth or slow-growth areas may reveal population increases or decreases or out-migration in certain and/or specific areas or neighborhoods. The rate of housing development is an indicator of the overall rate of growth occurring in the region, which should be considered for compatibility with operations at WPAFB.

## Housing Units

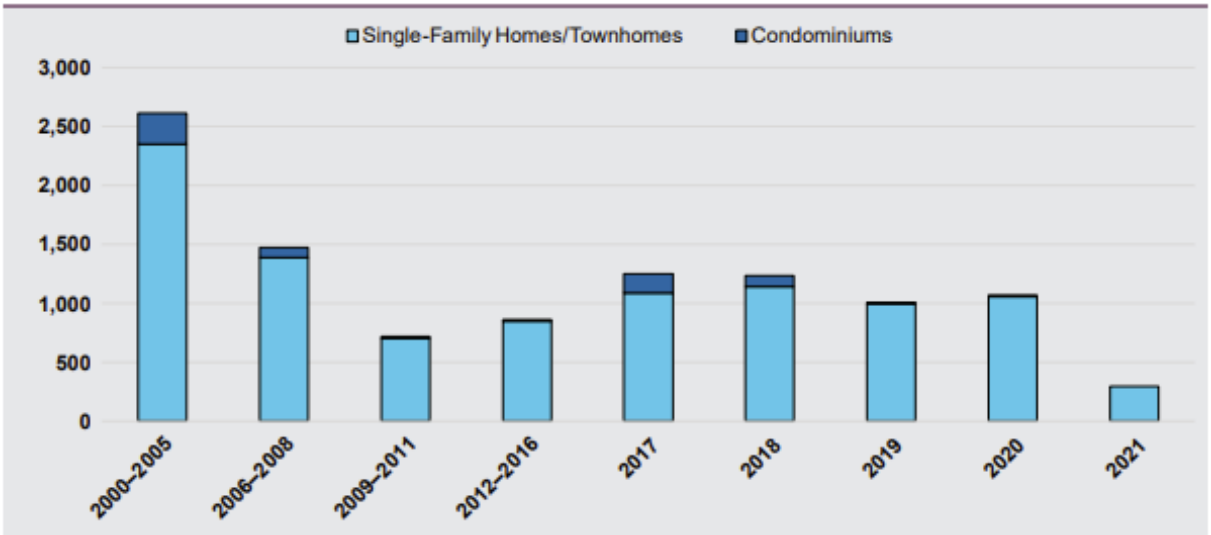
The Dayton Housing Market Area (HMA) as defined by the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, includes Greene, Miami, and Montgomery Counties and is coterminous with the Dayton MSA

As measured by the number of sales units permitted, homebuilding activity within the Dayton HMA has generally increased since 2012. Still, fewer new homes have been permitted annually compared with the 2000-2008 period, as shown in Figure 4-6.

From 2000 through 2005, an average of 2,600 homes were permitted annually. In response to continued local economic contraction and the onset of the national housing market downturn, the number of homes permitted decreased to an average of 1,475 homes annually from 2006 through 2008 before declining to an average of 710 homes annually from 2009 through 2011. Production began to increase the following year, and from 2012 through 2020 — a period that included economic expansion and a shift to net in-migration — homebuilding activity increased to an average of 860 homes annually. During the 12-month period ending March 2021, approximately 1,125 homes were permitted — up 100 homes compared to the previous year's period. From 2000 through 2008, roughly 9% of all homes permitted were condominiums. Since 2009, that proportion has dropped to 3%, partly because purchasing a single-family home is relatively affordable in the HMA. All condominium construction in the HMA has occurred in Greene and Montgomery Counties since 2000.

More than 83% of new for-sale home construction since 2012 has occurred in Greene and Montgomery Counties. In Greene County, just east of WPAFB, in the city of Fairborn, is the Waterford Landing community, which was established in 2011 and has more than 200 completed homes; home sales are underway at Phase 9. The most recent phase includes 37 single-family residential lots, with three- and four-bedroom homes starting at $296,990 and $316,490, respectively. Approximately 20 miles southwest, in Montgomery County, the Trails at Saddle Creek in Centerville is a planned community with 277 lots. In the community, 238 lots have been sold, and 39 are available — homes in the community feature two to seven bedrooms and two to seven bathrooms. The price of the most recently sold home was $351,500.

**Figure 4-6** Permitting Activity in the Dayton Housing Market Area

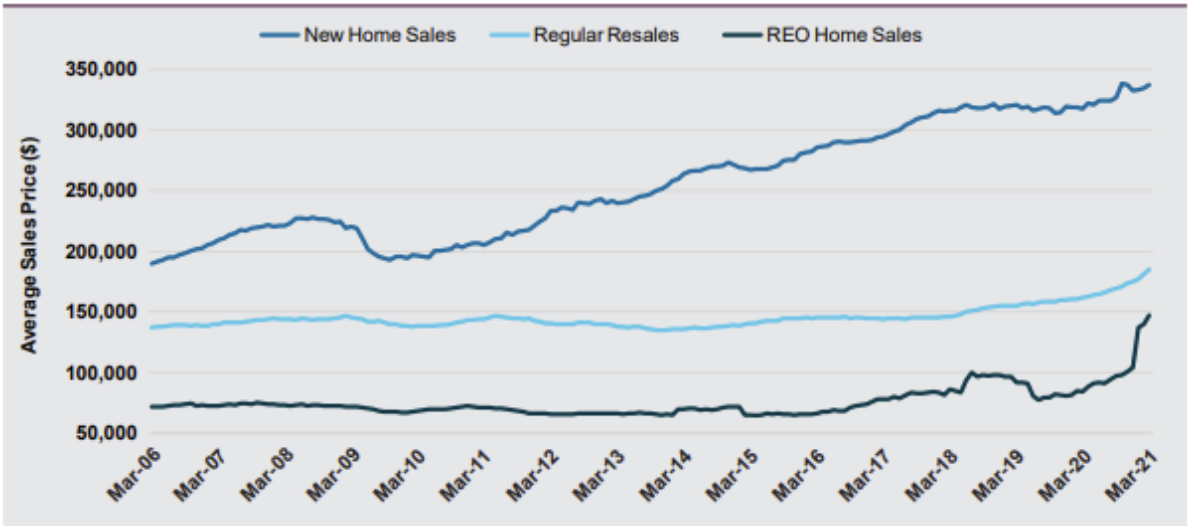



Notes: Includes single-family homes, townhomes, and condominiums. Data for 2021 are through March 2021.
Sources: U.S. Census Bureau, Building Permits Survey; 2000 through 2020—final data and estimates by the analyst; 2021—preliminary data and estimates by the analyst

# Housing Values

**Trends in Home Sales Prices, 2005 Through 2019:** Figure 4-7 shows the average home sales price in the Dayton HMA between 2006 and 2021. From 2006 through 2013, the average sales price declined at an average annual rate of 1%. At the same time, regular resale home prices remained relatively unchanged, and new home sales prices increased an average of 4% a year. From 2014 through 2019, which included increased home sales, home sales prices rose an average of 4% yearly to $164,000. The sales price increased for every housing type as the inventory of homes for sale decreased yearly.

**Figure 4-7** Average Sales Price for Homes, 2006—2021




*Comprehensive Dayton Metropolitan Housing Market Area Analysis, April 1, 2021*

**Housing Market Forecast:** Demand is estimated at 3,575 new homes in the HMA in the next three years. Demand is expected to increase slightly every year in the forecast period. The limited housing supply, current housing market conditions, continued net migration, and economic trends contribute to the increased demand for the limited supply in the region. The 310 homes currently under construction will satisfy part of the demand. (Source: Comprehensive Dayton Metropolitan Housing Market Area Analysis, April 1, 2021)

## 4.6 Community Collaboration Events with Wright-Patterson AFB

WPAFB is the largest Air Force base operated on United States territory, spread over Montgomery and Greene Counties. It has a land area of over 8,000 acres or 12.5 sq. mi. and an on-base workforce of more than 32,000 workers, including military, civilians, and contractors. The primary and largest contribution WPAFB makes to the surrounding communities is its financial and economic impact. Overall, WPAFB is the economic engine that drives the region's economy. It is Ohio's largest single-site employer, generating over 32,000 direct on-base jobs and approximately 49,000 ancillary support jobs, equating to over $16 billion in economic activity annually.

Aside from the obvious general contributions WPAFB provides to the many surrounding communities, by being the State's largest single-site employer with an annual payroll of over $2.5 billion, WPAFB also has numerous specific ways in which it contributes to the surrounding communities. A few of these are described below:

**Combined Federal Campaign (CFC):** The CFC held a kick-off event on October 5, 2022, at the USO at WPAFB. The CFC is the world's largest workplace charity campaign program, where federal, civilian, and military donors pledge to support eligible nonprofit organizations. "For more than 60 years, members of the federal community have contributed to charities through the CFC, giving more than $8.6 billion to help those in need locally, across the nation, and throughout the world," said Dr. Edmund Moore, 2022 CFC Dayton District chair. The 2022 CFC

runs from September 1 to January 15. Funds donated will help support more than 5,600 charities nationwide, with over 50 in the Miami Valley area.

**Dayton Air Show:** WPAFB annually provides nearly 400 Airmen and civilian employees as support for the Dayton Air Show, which is hosted annually at Dayton International Airport in Montgomery County, approximately 10 miles northwest of WPAFB. The support provided by the Airmen and civilian employees includes aircraft operations, marshaling, fuels, security and medical services, and public affairs for the event.

**Firefighters:** The 788th Civil Engineer Squadron Fire Department provided training to the Dayton International Airport Fire Department at WPAFB's fire training facility on October 5, 2022. A Dayton International Airport (DAY) crash truck and five firefighters came to the base after dark to get hands-on experience putting out aircraft fires. "We have an annual certification requirement from [the Federal Aviation Administration]," said Chief Duane Stitzel of the DAY Fire Department, "and that's to do a live training fire every year involving an aircraft or an aircraft problem, just like Wright-Patt is providing."

**Air Force Community Partnership Program:** This initiative, led by the Air Force Energy, Installations, and Environment office, cultivates partnerships between installations and their host communities. It is primarily focused on enhancing military readiness. Other objectives include fostering installation-community relationships and promoting innovation. The Air Force currently emphasizes initiatives with greater returns on investment that can be applied across various installations, such as having a public entity provide municipal services (solid waste collection, etc.).

# 4.7 Transportation

The transportation network that provides access to and from WPAFB and the land uses in and around the CUP Project Area are interconnected. Both play a vital role in helping establish the potential future developments and improvements that can be made and in understanding how to make WPAFB and the surrounding communities more compatible while meeting each participant's future growth and development needs. The transportation network for the CUP Project Area can directly impact WPAFB's day-to-day operations. This section describes the existing transportation network, shown in Figure 4-8. An analysis of the transportation network's compatibility with WPAFB is presented in Chapter 6.

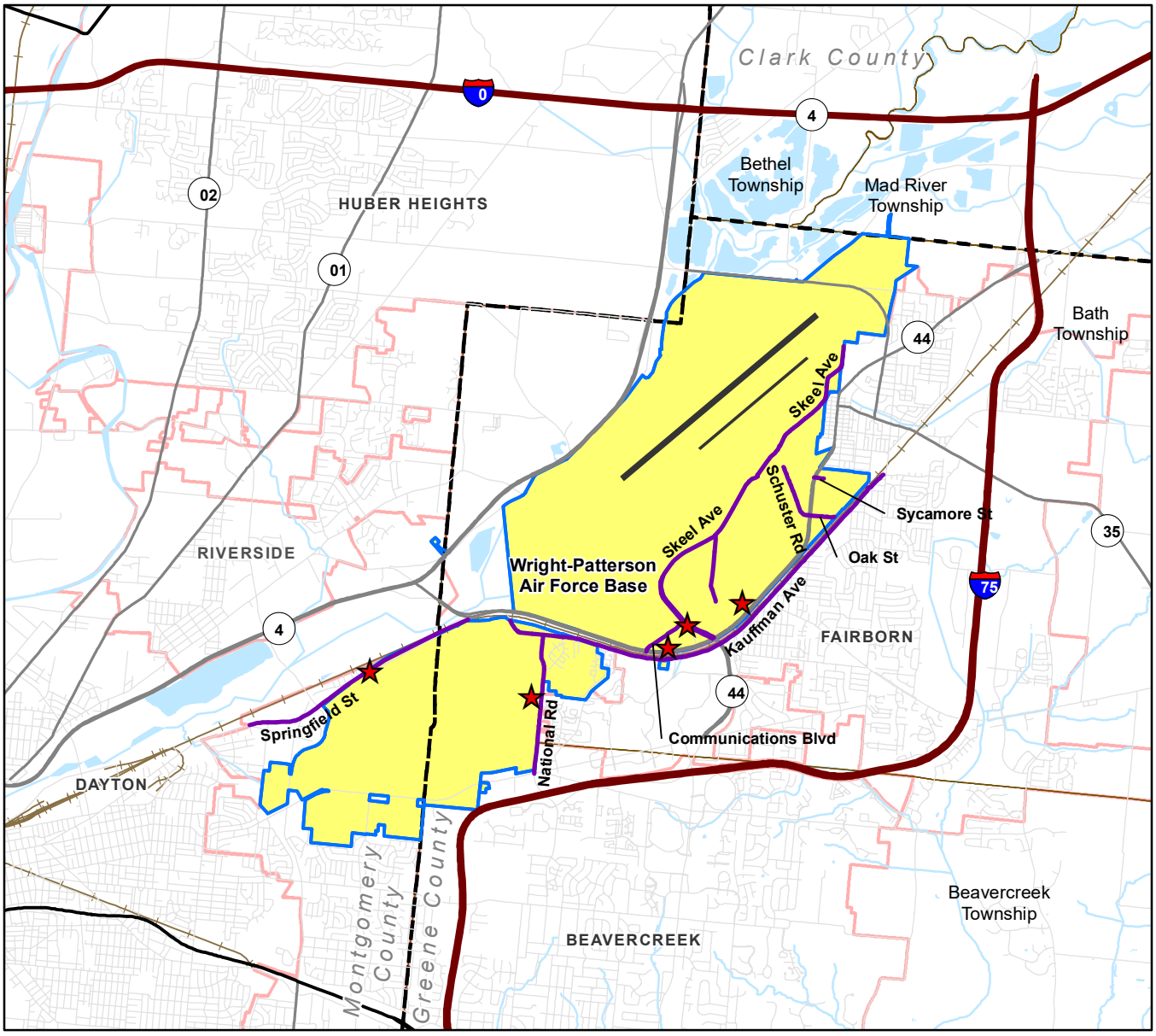
## Roadway Network

The CUP Project Area is supported by a network of interstates, state routes/highways, and internal local roads in and around the base that interconnect all the gate accessways into and out of WPAFB. SR-444, SR-235, and I-675 primarily serve the gates.

- **Interstates:** I-70 runs east and west a few miles north of the WPAFB CUP Project Area. Northeast of the In the Dayton metropolitan area, in Mad River Township, and a few miles north of the City of Fairborn, I-675 runs south from I-70. It then runs along the eastern side of WPAFB until it connects with SR-444 at the northeast end of the base.
- **State Routes:** SR-444 intersects with SR-235 just outside the northeast corner of WPAFB. These two state routes encircle the base and provide the primary access roads to the 11 gates that lead into and out of the

WPAFB complex. Even though the primary access roads to these gates are state routes, many local roadways provide access. SR-4 also provides access to the CUP Project Area coming from the west out of the City of Dayton, which also provides access to SR-235 and SR-444.

- **Local Roadways:** The local roadways that provide direct access to the gates into WPAFB include Schuster Road, Springfield Street, Kaufman Avenue, Communications Boulevard, Skeel Avenue, Oak Street, Sycamore Street, National Road, and Eastbrook Drive.
- **Gates into WPAFB:** Due to the sheer size and configuration of the base, there are multiple gates, both external (into WPAFB) and internal (between various facilities at WPAFB). External gates include the Main Gate and five other entry gates. The gate at the northern end of WPAFB accommodates commercial vehicle inspections.




**Legend**

- Main Gate
- Primary Access Roads
- Interstate
- US Highway
- State Route
- Local Road
- Railroad
- Wright-Patterson AFB
- Runway
- City Boundary
- Township
- County Boundary
- Water Body

Matrix

Source: USGS, 2023. Matrix Design Group, 2023. Wright - Patterson AFB, 2023

0 1 2 Miles

**Figure 4-8 Regional Transportation Network**

## Transit & Public/Private Transportation Services

Since WPAFB has numerous employees and contractors living in cities and communities surrounding the base and the CUP Project Area, they require many transit services to and from the base regularly throughout the day and the week. Due to recent security measures being adopted, these transit services are not allowed in all areas of the base. The two primary public transit bus services in the CUP Project Area are the Greater Dayton Regional Transit Authority (RTA) and Greene CATS Public Transit.

There is also a wide array of public and private vanpool services throughout these communities and multiple private carpool transportation services to and from WPAFB, including those created by the base employees themselves. Abundant private taxis and Uber services also provide transportation to and from the base. The two primary vanpool services for the CUP Project Area are Miami Valley Rideshare and GOHIO Commute Vanpool and Carpool.

A consolidated on-base shuttle provides express shuttle services every hour from 7:30 a.m. until 4:30 p.m.. After-duty hours and weekend transportation is available by request for official business only.

## Local Airports

Airports are important for regional, national, and international connectivity, and they are vital when considering the highly active flight operations that occur daily at WPAFB. The airports near the CUP Project Area include Dayton International Airport, Greene County-Lewis A. Jackson Regional Airport, Springfield-Beckley Municipal Airport, and Renegades Local Airport.

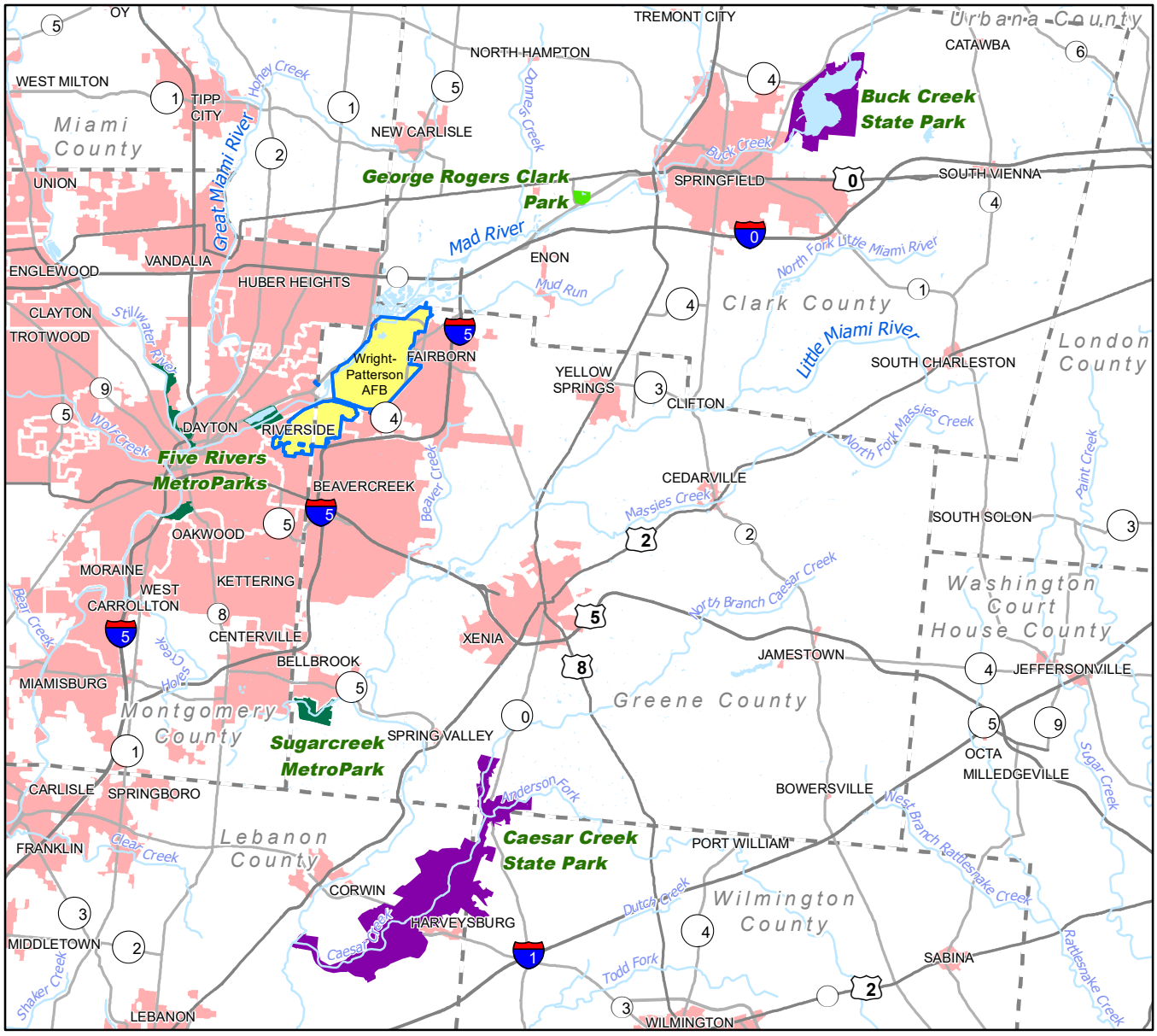
- **Dayton International Airport (DAY)** is the closest international airport to the CUP Project Area, located 10 miles north of downtown Dayton in Montgomery County. It provides regional, national, and international flights. DAY is the hub for the following cargo airlines: PSA, Air Wisconsin, Emery Worldwide, Piedmont, and Heartland. It also provides flights from the following passenger airlines: Allegiant, American, Avelo, Delta, and United.
- **Greene County-Lewis A. Jackson Regional Airport** is the closest regional, public, instrument flight rules (IFR) airport. It is located in the City of Xenia, approximately 10 miles from WPAFB.
- **Springfield-Beckley Municipal Airport** is a municipally owned airport located about five miles south of the City of Springfield, in Clark County. It is a full-service, small aircraft airport.

# 4.8 Natural Resources

WPAFB is in a region with diverse natural resources typical of the Midwest. The surrounding area has a variety of natural features and resources. They include, but are not limited to, the following:

- Rivers
  - The Mad River is a significant water resource in Clark County. It provides recreational opportunities, supports aquatic ecosystems, and is historically important in the region.
  - The Little Miami River flows through Greene County, providing a significant water resource. It supports aquatic ecosystems and recreational activities like fishing and canoeing and contributes to the region's overall environmental health.
  - The Great Miami River flows through Montgomery County, providing a significant water resource. It supports aquatic ecosystems and recreational activities and, historically, has played a role in transportation and industry.
- Parks
  - Buck Creek State Park, located in Clark County, offers a variety of outdoor activities, including boating, fishing, camping, and hiking. The park contributes to the County's natural recreation spaces.
    - George Rogers Clark Park is another natural area in the county that provides opportunities for hiking and enjoying nature. It contains woodlands, meadows, and wildlife habitats.
  - Caesar Creek State Park extends into Greene County, offering opportunities for outdoor activities such as hiking, boating, camping, and wildlife observation. The park contributes to the preservation of natural areas.
    - Sugarcreek MetroPark, located in Greene County, provides residents and visitors with green spaces, hiking trails, and opportunities to appreciate nature. The park includes woodlands, meadows, and wetlands.
  - Five Rivers MetroParks in Montgomery County is a parks system that offers numerous parks and nature preserves. These areas provide outdoor recreation, wildlife observation, and environmental education opportunities.

All four counties within the region have fertile agricultural lands where farmers cultivate crops and livestock. Agriculture is an integral part of the region's economy. In that same vein, the region contains woodlands and forests, which support biodiversity and provide habitats for various plant and animal species. The area also has wetlands crucial to the region's diverse ecosystem.




**Legend**

- State Park
- MetroParks
- Park
- Water Body
- Rivers and Streams
- Wright-Patterson AFB
- County Boundary
- City
- Interstate/US Highway
- State Route

Matrix

Source: Esri, 2023.

0 2 4 8 Miles

**Figure 4-9 Regional Natural Resources**

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# 5 Compatibility Tools

This chapter reviews existing programs, plans, policies, laws, governing regulations, and other tools used, applied, or available for evaluation and/or mitigating compatibility issues in the CUP Project Area. Several of these tools directly or indirectly address compatibility through other topics covered. This review summarizes applicable planning tools and how each may apply to compatibility findings, as defined in Chapter 6: Compatibility Assessment.

# 5.1 Federal Laws, Regulations, and Programs

Federal policy, laws, and programs have evolved to impact almost every aspect of land use. A broad range of federal plans, programs, and regulations impact WPAFB directly or indirectly. These are carried out by the federal government or, in some cases, empower state, regional, county, and local governmental agencies to implement these policies, programs, and regulations. The following federal programs and policies were evaluated to determine areas of improvement that will enable better compatible land use planning at the local and regional levels within the CUP Project Area.

The following list does not exhaustively account for every relevant federal law or program. Still, it attempts to capture those considered relevant to assessing compatibility issues and potential strategies stakeholders might employ to avoid or mitigate conflicts.

**Federal tools assist** land use **decision-makers and planners** at all levels of government **in making informed decisions that enable compatible land use** development between military installations and the surrounding communities. Federal law authorizes federal, state, and local entities to implement regulatory measures and policies to protect the multiple resources involved in land use and military compatibility planning. These measures and policies protect the public's quality of life and general welfare and preserve military facilities and operating areas. Brief descriptions are provided for each identified law, regulation, Department of Defense Instruction (DoDI), or Air Force Instruction (AFI). These are listed in Table 5-1.

**Table 5-1** Federal Planning Tools

| Federal Law, Regulation, or Program | Location |
|---|---|
| AFI 32-1015 – Integrated Installation Planning | 5-16 |
| AFMAN 32-7003 – Environmental Conservation | 5-9, 5-14 |
| AFM 19-10/TM 5-803-2/NAVFAC P-970 – Planning in the Noise Environment | 5-17 |
| Air Force Installation Energy Strategic Plan 2021 | 5-11 |
| Air Force Instruction 90-2001 – Mission Sustainment | 5-20 |
| Air Force Playbook for Foreign Investment Assessments Proximate to Military Equities | 5-18 |
| Archaeological Resources Protection Act | 5-8 |
| Building Resilient Infrastructure and Communities | 5-12 |
| Clean Air Act | 5-12 |
| Clean Water Act | 5-12 |

**Table 5-1** Federal Planning Tools (continued)

| Federal Law, Regulation, or Program | Location |
|---|---|
| Comprehensive Environmental Response, Compensation, and Liability Act | 5-12 |
| Defense Community Infrastructure Program | 5-18 |
| Department of Air Force Policy Directive 90-22 – Air Force Community Partnership Program | 5-20 |
| Department of Defense Climate Adaptation Plan | 5-19 |
| Department of Defense Minimum Antiterrorism Standards for Buildings (UFC 4-010-01) | 5-18 |
| Department of Energy Office of Energy Efficiency and Renewable Energy | 5-10 |
| Department of Housing and Urban Development Noise Regulation | 5-17 |
| DoD Directive 4170.11 – Installation Energy Management | 5-10 |
| DoD Operational Noise Manual | 5-17 |
| DoD Readiness and Environmental Protection Integration Program | 5-14 |
| DoDI 4165.57 – Air Installations Compatible Use Zones Program | 5-16 |
| DoDI 4710.02 – DoD Interaction with Federally Recognized Tribes | 5-9 |
| DoDI 4715.03 – Natural Resource Conservation Program | 5-14 |
| DODI 4715.07 – Defense Environmental Restoration Program | 5-14 |
| DoDI 4715.13 – DOD Operational Noise Program | 5-17 |
| DoDI 4715.16 – Cultural Resources Management | 5-9 |
| DoDI 4715.24 – The Readiness and Environmental Protection Integration Program and Encroachment Management | 5-16 |
| Endangered Species Act | 5-8 |
| FAA Advisory Circular 150/5200-33C – Hazardous Wildlife Attractants on or near Airports | 5-5 |
| FAA Guidance to Law Enforcement | 5-7 |
| FAA Policy: Review of Solar Energy System Projects on Federally Obligated Airports | 5-6 |

**Table 5-1** Federal Planning Tools (continued)

| Federal Law, Regulation, or Program | Location |
|---|---|
| FAA UAS Registry | 5-7 |
| Federal Aviation Act | 5-5 |
| Federal Land Policy and Management Act of 1976 | 5-15 |
| Grid Resilience and Innovation Partnerships Program | 5-10 |
| Intergovernmental Support Agreements | 5-19 |
| Land and Water Conservation Fund | 5-15 |
| Migratory Bird Treaty Act | 5-13 |
| Military Aviation and Installation Assurance Siting Clearinghouse | 5-11 |
| National Environmental Policy Act | 5-13 |
| National Historic Preservation Act | 5-8 |
| National Pollutant Discharge Elimination System | 5-13 |
| Noise Control Act | 5-16 |
| OLDCC's Community Noise Mitigation Program | 5-16 |
| Partners in Flight Program | 5-6 |
| Safe Drinking Water Act | 5-13 |
| Sentinel Landscapes Partnership | 5-14 |
| Sikes Act | 5-13 |
| Telecommunications Act and the Federal Communications Commission | 5-6 |
| Title 14 CFR Part 107 – FAA Small Unmanned Aerial Systems | 5-7 |
| Title 14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace | 5-6 |
| U.S. Aviation Hazard Advisory System | 5-8 |

# Airspace

## Federal Aviation Act

This Act established the FAA in 1958. The mission of the FAA is to regulate civil aviation and U.S. commercial space transportation, maintain and operate air traffic control and navigation systems for both civil and military aircraft, and develop and administer programs relating to aviation safety and the National Airspace System. There are four types of airspace within the National Airspace System:

- **Controlled airspace:** A term encompassing the different classifications of airspace (Class A, Class B, Class C, Class D, and Class E) with defined dimensions where air traffic control (ATC) provides service to IFR and VFR flights according to the airspace classification.
- **Uncontrolled airspace:** Refers to Class G airspace where ATC has no authority or responsibility, and flights generally operate under visual flight rules (VFR).
- **Special-use airspace:** Airspace designated for specific activities or with limitations imposed on non-participating aircraft operations. The six basic types of special-use airspace (SUA) are Prohibited Areas, Restricted Areas, Warning Areas, MOAs, Alert Areas, and Controlled Firing Areas (CFAs).
- **Other airspace:** Includes various types such as Local Airport Advisory (LAA), Military Training Routes (MTR), Temporary Flight Restrictions (TFR), Parachute Jump Aircraft Operations, Published VFR Routes, Terminal Radar Service Areas (TRSA), National Security Areas (NSA), Air Defense Identification Zones (ADIZ), and Defense VFR (DVFR) requirements.

## FAA Advisory Circular 150/5200-33C — Hazardous Wildlife Attractants on or near Airports

This Advisory Circular (AC) guides certain land uses that can potentially attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants.

The FAA recommends the guidance in this AC for land uses that potentially attract hazardous wildlife on or near public-use airports. This AC does not constitute a regulation, is not mandatory, or is legally binding. The FAA will not rely on it as a separate basis for affirmative enforcement action or other administrative penalties. Conformity with this AC is voluntary, and nonconformity will not affect rights and obligations under existing statutes and regulations except as follows:

- Airports that hold Airport Operating Certificates issued under Title 14, CFR, Part 139, Certification of Airports, Subpart D, may use the standards, practices, and recommendations contained in this AC as one, but not the only, acceptable means of compliance with the wildlife hazard management requirements of Part 139.
- The FAA recommends guidance in this AC for airports that receive funding under federal grant assistance programs, including the Airport Improvement Program. See Grant Assurance #34.

## FAA Policy: Review of Solar Energy System Projects on Federally Obligated Airports

This document establishes FAA policy for proposals by sponsors of federally obligated airports to construct solar energy systems on airport property. The FAA is publishing this policy because it is in the public interest to enhance safety by analyzing the ocular impact of proposed solar energy systems on airport traffic control tower personnel. The policy applies to proposed on-airport solar energy systems at federally obligated airports.

## Partners in Flight Program

The DoD has implemented a Partners in Flight program that sustains and enhances the military testing, training, and safety mission through habitat-based management strategies. The program assists natural resource managers in monitoring, inventorying, researching, and managing birds and their habitats. As part of the Partners in Flight program, a strategic plan is created that can be incorporated into the BASH plan. This program reaches beyond the boundaries of the installation to facilitate community partnerships and determine the status of bird populations to prevent the further endangerment of birds.

## Telecommunications Act and the Federal Communications Commission

The Telecommunications Act of 1996 was largely intended to increase competition in the telecommunications marketplace. The increasing use and development of personal mobile phones, satellite transmission, high-speed fiber optics, and related technologies continuously create demand for new telecommunications technology and infrastructure.

New telecommunications tower siting requires compliance with the Federal Communications Commission's (FCC) environmental standards and procedures, including the National Environmental Policy Act (NEPA) and Endangered Species Act, the National Historic Preservation Act, adherence to applicable FAA requirements, and structure registration with the FCC. The actual approval of telecommunications improvements is subject to state and local permitting and review; however, state and local authority is limited by federal law. For instance, states and local jurisdictions cannot base their decisions on any purported environmental effects of radio frequency transmissions.

## Title 14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace

Chapter 1, Subchapter E, Part 77 (Safe, Efficient Use, and Preservation of the Navigable Airspace) of Title 14 of the Code of Federal Regulations (CFR), which codified the Federal Aviation Act, is a critical component of the CFR in establishing a mechanism for determining if proposed structures or objects would constitute vertical obstructions or flight hazards in navigable airspace. Part 77 specifies the distance and dimensions of the imaginary surfaces around civil and military airports used to assess the flight risk from the proposed construction of towers or tall structures.

# Title 14 CFR Part 107 – FAA Small Unmanned Aerial Systems

The FAA governs unmanned aerial systems (UAS), commonly known as drones, in the national airspace. Drone operations for small UAS aircraft, defined as under 55 pounds, can be conducted under the Small UAS Rule (Title 14 Code of Federal Regulations, Part 107), which requires operator certification, among other UAS regulations.

Title 14 CFR Part 107 specifies operating requirements for all UASs under 55 pounds. This includes manually operating the UAS, maintaining a visual line-of-sight, and getting approval from the relevant air traffic control tower before operating a UAS in Class B, C, D, and E airspace using the Low Altitude Authorization and Notification Capability (LAANC) desktop or mobile app. It also sets operational limitations, including a weight limit of 55 pounds, a speed limit of 100 miles per hour, and a height limit of 400 feet, and it only permits daylight operations.

UAS operators must pass a remote pilot certification exam and register with the FAA. Certified UAS operators can request waivers to operational requirements, including altitude, special use of airspace, and flying at night. Exceptions to this rule under the Recreational Use of Model Aircraft Rule require registration of small UASs with the FAA, marking the aircraft with a registration number, and carrying the registration while operating the UAS.

Recreational use of small UAS aircraft is permitted by 49 United States Code § 44809 as an exception to Part 107, provided the operator follows the eight requirements of this exception, including registration of UAS vehicles. This exception is sometimes called the Recreational Use of Model Aircraft Rule.

## FAA UAS Registry

All UAS operating in the national airspace must be registered with the FAA at its Drone Zone website. The only exception made is for model aircraft with a weight under 0.55 pounds. The Drone Zone website is https://faadronezone.faa.gov/#/.

The FAA may take enforcement action against anyone who conducts an unauthorized UAS operation or operates a UAS in a way that endangers the safety of the national airspace system. FAA enforcement tools include warning notices, letters of correction, and civil penalties.

## FAA Guidance to Law Enforcement

The FAA asks local law enforcement agencies to document and provide the following information to the FAA:

- Identity of operators and witnesses (name, contact information)
- Type of operation (hobby, commercial, public/governmental)
- Type of device(s) and registration information (number/certificate)
- Event location and incident details (date, time, place)
- Evidence collection (photos, video, device confiscation)

Additionally, the FAA recommends law enforcement always follow agency policies and take appropriate action based on the facts and circumstances of the incident and site/area-specific laws and rules. FAA enforcement action does not impact any enforcement action(s) taken by law enforcement agencies. Local ordinances that may apply include, but are not limited to, reckless endangerment, criminal mischief, voyeurism, and inciting violence.

## U.S. Avian Hazard Advisory System

The U.S. Avian Hazard Advisory System (USAHAS) is a GIS-based bird avoidance model developed by the U.S. Air Force for the "analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial data." The model provides up-to-date information about bird activity and movements to assist pilots and flight planners in the scheduling and use of flight routes. The model can also be used as a forecasting tool to estimate bird strike risk.

# Cultural

## Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 (ARPA) was enacted to secure the protection of archaeological resources and sites on public lands and Native American lands and foster increased cooperation between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data.

## Endangered Species Act

This act aims to protect and recover imperiled species and the ecosystems they depend on by establishing a program to conserve threatened and endangered (T&E) plants, animals, and their habitats. The Endangered Species Act is administered by two federal agencies, the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). USFWS is responsible for the recovery of terrestrial, freshwater, and catadromous species. NMFS is responsible for marine species and anadromous fish. NMFS manages recovery for 165 endangered and threatened marine species, including 66 foreign species. As of January 2020, the Services have listed 2,273 species worldwide as endangered or threatened, with 1,662 species in the United States.

The DoD manages nearly 500 T&E species and over 550 species at risk of needing listing protections on its installations. Of those, 60 listed and 74 at-risk species exist exclusively on DoD lands.

## National Historic Preservation Act

The National Historic Preservation Act of 1966 established a partnership between the federal government and state, tribal, and local governments supported by federal funding for preservation activities. The law also created the President's Advisory Council on Historic Preservation and the National Register of Historic Places, an official list of important buildings, structures, districts, objects, and archeological sites because of their connection with the past. It also contains Sections 106 and 110. Section 106 requires federal agencies to consider the impact of their actions on historic properties. This process for federal projects (that use federal funds) determines whether the work to be done would harm a site and, if so, a way to avoid or minimize that harm. Section 110 requires all federal agencies to establish preservation programs and designate a preservation officer to coordinate their historic preservation activities.

The DoD historic property portfolio includes 49 individual National Historic Landmarks, 3,171 National Historic Landmark contributing properties, 2,396 individual and contributing historic assets listed in the National Register of Historic Places, over 15,000 historic assets determined eligible for inclusion in the National Register of Historic Places, and over 132,000 recorded archaeological sites.

## DoDI 4710.02 – DoD Interaction with Federally Recognized Tribes

This federal instruction provides procedures for DoD interactions with federally recognized tribes whenever an action is proposed. Installation commanders must establish the initial consultation relationship with the tribe(s) that has a cultural or historical affiliation with installation lands and must involve tribal governments early in the planning process for proposed actions that may potentially affect protected tribal rights, land, or resources.

## DoDI 4715.16 – Cultural Resources Management

Within these instructions is guidance for compliance with federal regulatory requirements for integrated management of cultural resources on DoD land. Cultural resources include historical, archaeological, architectural, and cultural values. The DoD policy sets out three objectives:

- Manage and maintain cultural resources under DoD control sustainably through a comprehensive program that considers preserving historic, archaeological, architectural, and cultural values; is mission-supporting; and results in sound and responsible stewardship.
- Be an international and national leader in the stewardship of cultural resources by promoting and interpreting the cultural resources it manages to inspire DoD personnel and to encourage and maintain U.S. public support for its military.
- Consult in good faith with internal and external stakeholders and promote partnerships to manage and maintain cultural resources by developing and fostering positive partnerships with federal, tribal, state, and local government agencies, professional and advocacy organizations, and the general public.

## AFMAN 32-7003 – Environmental Conservation

The USAF's policy for managing cultural resources supports the military mission by meeting the legal compliance requirements within existing laws and federal environmental protection policies. The program's goals are to identify, manage, and maintain important cultural resources in a spirit of stewardship for the benefit of this and future generations of Americans and to endeavor to integrate cultural resource stewardship with the needs of its primary military mission.

# Energy

## Department of Energy Office of Energy Efficiency and Renewable Energy

The U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is responsible for developing and delivering market-driven solutions for energy-saving homes, buildings, manufacturing, sustainable transportation, and renewable electricity generation. EERE's mission is to create and sustain American leadership in transitioning to a global clean energy economy. Its vision is a strong and prosperous America powered by clean, affordable, and secure energy. The Federal Energy Management Program (FEMP) provides guidance, reference materials, and resource links to help agencies comply with federal laws and requirements. In addition, FEMP and the DOE publishes notices and rules related to federal energy management.

## DoD Directive 4170.11 – Installation Energy Management

Directive 4170.11 requires that installation energy management meet applicable goals and policies and:

- Operate a secure, reliable, and efficient utility infrastructure;
- Effectively and efficiently procure utility commodities; and
- Maximize energy and water conservation efforts.

The availability, reliability, and security of electrical, water, and fuel resources and supporting infrastructure are critical for installation resiliency and continuity in case of events driven by climate change impacts.

## Grid Resilience and Innovation Partnerships Program

As part of the Bipartisan Infrastructure Law, the Grid Deployment Office (GDO) administers a $10.5 billion Grid Resilience and Innovation Partnerships (GRIP) Program to enhance grid flexibility and improve the power system's resiliency against growing threats of extreme weather and climate change.

These programs will accelerate the deployment of transformative projects that will help ensure the reliability of the power sector's infrastructure so that all American communities can access affordable, reliable, clean electricity anytime, anywhere. The Grid and Transmission Program Conductor is a clearinghouse for GDO's transmission and grid resiliency financing programs and other existing DOE transmission and grid programs. There are three primary funding streams within the GRIP program:

- Grid Resilience Utility and Industry Grants ($2.5 billion)
  - This program will fund comprehensive transformational transmission and distribution technology solutions that will mitigate multiple hazards across a region or within a community, including wildfires, floods, hurricanes, extreme heat, extreme cold, storms, and any other event that can disrupt the power system. This program provides grants to electric grid operators, electricity storage operators, electricity generators, transmission owners or operators, distribution providers, and fuel suppliers.

- Smart Grid Grants ($3 billion)
  - This grant program has broad eligibility and is open to domestic entities, including institutions of higher education, for-profit entities, nonprofit entities, state and local governmental entities, and tribal nations.
- Grid Innovation Program ($5 billion)
  - Broad project applications are of interest, including interregional transmission projects, investments that accelerate interconnection of clean energy generation, utilization of distribution grid assets to provide backup power and reduce transmission requirements, and more.

## Military Aviation and Installation Assurance Siting Clearinghouse

Military Aviation and Installation Assurance Siting Clearinghouse (Clearinghouse) works with industry to overcome risks to national security while promoting compatible domestic energy development. Energy production facilities and transmission projects involving tall structures, such as wind turbines, solar power towers, panels, and electrical transmission towers, may degrade military testing and training operations. In the national system of ground-based surveillance radars, the creation of "clutter" generated from wind turbines can present a hazard to air safety and surveillance. Wind turbines near military test and training ranges can also impact airborne military radar capabilities, as electromagnetic interference from generating and transmitting electricity can negatively impact critical DoD testing and training activities. Likewise, solar capture systems may present hazards to aircraft and air traffic control tower operations due to potential "glint" or longer duration "glare" reflecting off panels.

## Air Force Installation Energy Strategic Plan 2021

The Air Force Installation Energy Strategic Plan 2021 supports mission assurance using a mission-centric view to improve the resiliency of energy and water systems that enable Department of the Air Force (DAF) capabilities. To execute this approach, the plan lays out three goals – identify enabling system vulnerabilities, improve resiliency planning, and ensure resiliency results – which have been selected to support the installation energy vision of Mission Assurance Through Energy Assurance. Strategic objectives set the major milestones or actions required to achieve each goal. The plan includes an overview of the DAF Facility Energy Program governance structure introduced in DAF Instruction 90-1701 (which is an updated instruction to [AFPD] 90-17, listed below) as well as a suite of assessment, planning, execution, and verification tools to assist the DAF in realizing these goals. The plan enhances the ability of the DoD to build military readiness in support of a more lethal force and to reform DoD business practices as outlined in the 2018 National Defense Strategy. The plan ensures unexpected disruptions do not impair DAF readiness by taking a mission-focused approach to mitigate potential vulnerabilities in enabling systems supporting critical infrastructure and key military capabilities. The content of this plan will be reviewed every two years and updated as needed to keep pace with the continuously changing operational landscape.

# Environmental

## Building Resilient Infrastructure and Communities

Building Resilient Infrastructure and Communities (BRIC) is a Federal Emergency Management Agency (FEMA) grant. BRIC will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program's guiding principles are supporting communities through capability- and capacity-building, encouraging, and enabling innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency.

## Clean Air Act

The Clean Air Act (CAA) is a comprehensive federal law that regulates air emissions from stationary and mobile sources to control air pollution. The CAA also gives the EPA the authority to limit emissions of air pollutants originating from sources. Under the CAA, the Environmental Protection Agency (EPA) establishes limits for six criteria pollutants through the National Ambient Air Quality Standards (NAAQS). Standards are established to protect public health and welfare. Individual states may have more stringent air pollution laws, but they may not have less stringent standards than those set by the EPA. Under the law, states must develop State Implementation Plans (SIPs) that outline how each state will control air pollution under the CAA.

## Clean Water Act

The Clean Water Act (CWA) governs and provides guidance for managing water resources and controls and monitors water pollution in the U.S. The CWA establishes the goal of eliminating the release of toxic substances and other sources of water pollution to ensure that surface waters meet high-quality standards.

## Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) supports cleaning up sites with hazardous contaminants. It promotes a direct response to the release, or the threatened release, of hazardous substances that may endanger public health or the environment. CERCLA authorities complement those of the Resource Conservation Recovery Act, which primarily regulates ongoing hazardous waste handling and disposal.

Hazardous waste is sometimes present in or around military installations, particularly where munitions and ordnance are stored and used for training. If not disposed of properly, hazardous waste can harm the installation tenants, surrounding communities, and the environment. While the U.S. Environmental Protection Agency has established the Superfund program to clean up contaminated sites can be complex and time-consuming.

## Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 U.S.C. 703-712) was established in 1918 with cooperation from Canada, Mexico, Japan, and Russia to protect migratory bird species. This Act prohibits the killing, capturing, and transporting of protected migratory bird species without Department of Interior authorization. Many birds common to the southern United States are protected under this Act, including ducks, geese, and gulls. The presence of protected migratory birds within air operational areas could delay and/or impact military operations.

## National Environmental Policy Act

The NEPA established the nation's policy regarding protecting and enhancing the environment. It requires federal agencies to analyze and consider the potential environmental impact of their actions. The purpose of NEPA is to promote informed decision-making by federal agencies by providing detailed information concerning significant environmental impacts on ecological and natural resources and the human environment, such as community character, public health and safety, and cultural resources.

All federal agencies, including the DoD, and all federally funded undertakings must comply with NEPA, including documentation requirements, before receiving a permit, approval, or funding. NEPA requires that the military review the potential impact of proposed actions on the environment, including in surrounding civilian communities, and consider measures to reduce, avoid, or mitigate identified adverse environmental impacts.

## National Pollutant Discharge Elimination System

Per the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge into U.S. waters. Individual homes connected to a municipal system that uses a septic system or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if they discharge directly to surface waters.

## Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) ensures drinking water quality in the U.S. The SDWA authorizes the EPA to set national health-based drinking water standards to protect against natural and man-made contaminants. The SDWA applies to every public water system in the U.S. because a reliable source of clean, potable water is necessary for any population center to function and grow and for mission activities at military installations.

## Sikes Act

The Sikes Act requires the DoD to develop and implement Integrated Natural Resources Management Plans (INRMPs) for military installations across the U.S. INRMPs are prepared in cooperation with the USFWS and state fish and wildlife agencies to ensure proper consideration of fish, wildlife, and habitat needs. The Sikes Act requires INRMPs to be reviewed every five years with the USFWS and state fish and wildlife agencies.

## DoDI 4715.03 – Natural Resource Conservation Program

This DoDI guides compliance with federal, state, and local regulatory requirements for the integrated management of natural resources on DoD land. The Instruction specifies that those DoD components responsible for natural resources management shall also ensure that installations prepare an Integrated Natural Resources Management Plan.

## DoDI 4715.07 – Defense Environmental Restoration Program

The Defense Environmental Restoration Program implements a policy to reduce risk to human health and the environment due to military activities as well as facilitate compliance with applicable statutes, regulations, executive orders, and other legal requirements governing environmental restoration by providing necessary policies and procedures and by implementing guidance for conducting environmental restoration activities.

## AFMAN 32-7003 – Environmental Conservation

This manual addresses the management of natural resources on Air Force properties to comply with federal, state, and local standards. This manual provides the framework for documenting and maintaining a natural resources management program. The primary objective of the USAF natural resources program is to ensure continued access to land, and airspace required to accomplish the Air Force mission by maintaining these resources in a healthy condition.

## DoD Readiness and Environmental Protection Integration Program

The DoD Readiness and Environmental Protection Integration (REPI) Program is a key tool for combating encroachment that can limit or restrict military training, testing, and operations. The REPI Program protects these military missions by helping remove or avoid land-use conflicts near installations and addressing regulatory restrictions that inhibit military activities.

The REPI Program is administered by the Office of the Secretary of Defense (OSD). A key component is using buffer partnerships among the military services, private conservation groups, and state and local governments, authorized by Congress in 10 U.S.C. § 2684a.

These win-win partnerships share the cost of acquisition of easements or other interests in land from willing sellers to preserve compatible land uses and natural habitats near installations and ranges that help sustain critical, at-risk military mission capabilities. These partnerships often work across boundaries and protect working lands (e.g., farms, forests, ranches), wildlife habitat, water resources, natural spaces for recreational opportunities, and threatened and endangered species.

## Sentinel Landscapes Partnership

The Sentinel Landscapes Partnership is between federal, state, and local governments, agencies, and nongovernmental organizations to promote sustainable land management practices around military installations and ranges on private land. The partnership aims to strengthen military readiness, conserve natural resources, bolster agricultural and forestry economies, and increase climate change resiliency.

## Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) protects watersheds and drinking water supplies preserves our national heritage, and conserves natural areas and open space for wildlife and recreation – all while providing sustainable, domestic jobs in urban and rural communities across America. The enactment of the Great American Outdoors Act in August 2020 ensures that the LWCF permanently authorizes $900 million for conservation and recreation projects annually. The LWCF has a project toolkit that includes seven unique programs:

- Federal Land Acquisition Program
- State and Local Assistance Program
- Outdoor Recreation Legacy Partnership Program
- Forest Legacy Program
- American Battlefield Protection Program
- Cooperative Endangered Species Conservation Fund – Section 6
- Highlands Conservation Act Grant Program

# Land Use

## Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) authorizes the Bureau of Land Management (BLM) to manage its lands and plan for land uses according to national and local interests. The law mandates that BLM lands identified for development shall uphold and protect the scientific, scenic, historical, ecological, environmental, and other values unique to specific geographies. This law is the impetus for the various resource management plans developed and prepared for the BLM to meet the federal requirements.

## DoDI 4165.57 – Air Installations Compatible Use Zones Program

The Air Installations Compatible Use Zones (AICUZ) Program established a policy and assigned responsibilities for educating personnel and engaging local communities on noise, safety, and compatible land use in and around air installations. All the military branches have adopted the land use compatibility guidelines developed in the AICUZ DoDI. The AICUZ Program promotes long-term compatible land use on and near air installations by:

- Encouraging state and local governments to adopt enabling legislation and compatible land use regulations into their land use planning and control processes;
- Partnering with communities and other eligible entities to protect land by establishing restrictive use and conservation easements to prevent encroachment on air installations from degrading training, testing, and operations; and
- Integrating compatible land use strategies into the test and training range environment for operational noise and safety.

### DoDI 4715.24 – The Readiness and Environmental Protection Integration Program and Encroachment Management

The REPI Program promotes long-term compatible land use and military installation resiliency in the vicinity of, or ecologically related to installations, ranges, associated facilities, range infrastructure, and airspace from incompatible development and other encroachment threats.

### AFI 32-1015 – Integrated Installation Planning

Integrated installation planning guides the Air Force planning portfolio by establishing roles and responsibilities for installation and environmental planners in sustainable development, mission and environment, installation resiliency, and implementing the DoD's AICUZ and Operational Noise Programs. Integrated planning leverages available facilities, services, and resources, both on and off the installation, and promotes relationships with local communities and integration of the mission with local governments.

## Noise

### Noise Control Act

The Noise Control Act of 1972 identified that noise that is not adequately controlled could endanger people's health and welfare. It states that all Americans are entitled to an environment free from noise that can jeopardize their general health and quality of life. Along with state, local, and territorial governments, actions from the federal government were needed to ensure that the objectives of the Act were met. Concurrently, military installations were experiencing the impacts of encroaching urban development adjacent to the installations and the resulting complaints regarding noise from military flight operations. In 1973, the DoD responded by establishing the AICUZ Program.

The Noise Control Act and the AICUZ Program are important because encroaching development and increased population near military installations often create compatibility concerns. As communities grow, the military installations, developers, and communities must work together to mitigate the issue of noise and develop ways to coexist compatibly.

### OLDCC's Community Noise Mitigation Program

The Community Noise Mitigation Program is designed to address communities impacted by military fixed-wing aviation noise for installation noise mitigation at covered facilities. Covered facilities are hospitals, daycare facilities, schools, facilities serving senior citizens, and private residences.

Authorized under the Consolidated Appropriations Act, 2022 (Pub. L. 117-35) Section 8120, the program provided $75 million to remain available for obligation until September 30, 2025. The funds must be expended by five years after that obligation. The funds are allocated with $56.25 million to active-duty military installations and $18.75 million to Reserve component installations, of which $5 million shall be for communities near a military installation that has transitioned to a new aircraft type after January 1, 2019. Fund requests can include meeting the federal match requirements under the Federal Aviation Administration Part 150, Airport Improvement Program, as needed.

Entities eligible to receive a grant include state and local governments. Eligible Community Noise Mitigation projects are any covered facility:

- that is located off a military installation;
- that is within communities impacted by fixed-wing military aviation noise;
- that is located within one mile of a military installation or another location where military aircraft are stationed, as determined by the DoD or FAA noise modeling programs, or within a noise contour of 65 dB DNL or greater; and
- that is construction-ready.

## Department of Housing and Urban Development Noise Regulation

The United States Department of Housing and Urban Development (HUD) has instituted policies through Title 24 CFR Part 51 that promote state and local controls and standards for community noise abatement. The department aims to reduce noise levels within HUD-funded residential developments.

## DoD Operational Noise Manual

The Operational Noise Manual was prepared for DoD by the U.S. Army Center for Health Promotion and Preventive Medicine and released in November 2005. It provides a practical guide for military and civilian personnel with duties and responsibilities in operational noise management so that they can work together to be good neighbors and mitigate noise issues. The manual assists personnel in understanding and implementing current DoD environmental policy and guidance. Most of the manual is devoted to the following subjects: characteristics of sounds, effects of noise, military noise sources, noise monitoring, and reduction of noise conflicts.

## DoDI 4715.13 – DoD Operational Noise Program

The DoD's Operational Noise Program seeks to minimize the effects of military noise on the environment while maintaining military readiness. Services will analyze and incorporate military noise and noise management into comprehensive planning documents, environmental reviews, determinations, and decisional documents following applicable federal laws, regulations, and DoD guidance.

## AFM 19-10/TM 5-803-2/NAVFAC P-970 – Planning in the Noise Environment

The fundamental goal is to protect individuals from noise levels that may jeopardize their health and welfare while facilitating the defense mission. Therefore, planning in the noise environment was developed as a procedural tool designed to aid in developing acceptable noise environments for facilities on military installations or individuals concerned with the noise environment outside the fence. Planners should use the manual to provide an awareness of operational noise that may be expected to occur over a proposed or existing development. The document presents guidance for selecting sites for new facilities within existing or anticipated future noise environments. It discusses noise reduction techniques that may be applied to render marginally acceptable locations suitable for use. The guidelines presented are consistent with the AICUZ Program and land use recommendations generally accepted by the planning community.

# Safety and Security

## Department of Defense Minimum Antiterrorism Standards for Buildings (UFC 4-010-01)

Unified Facilities Criteria (UFC) 4-010-01 sets DoD minimum security standards for use in facility and master planning. The purpose of these standards is to provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks based on the specific protection needs of individual installations and facilities. Required security measures, such as allowable standoff distances, vary relative to facility siting within a controlled perimeter or on an open installation.

## Air Force Playbook for Foreign Investment Assessments Proximate to Military Equities

The Air Force published this document in 2023. The playbook is designed to inform and educate installation staff and surrounding local governments on protocols for obtaining critical information and identifying and addressing potential concerns related to foreign investment transactions near Air Force installations and training and testing areas. This playbook assists in the flow of information for transaction review by the Committee on Foreign Investment in the United States. This federal interagency committee is charged with reviewing certain transactions involving foreign investment in the United States and certain real estate transactions by foreign persons to determine the effect of such transactions on the national security of the United States.

# Other

## Defense Community Infrastructure Program

Piloted in 2019, the Defense Community Infrastructure Program allows the DoD to fund state and local governments for off-base infrastructure projects to support military installations. The program authorizes the department to fund projects that address deficiencies in community infrastructure if the assistance will enhance the military's value, its resiliency, or the quality of life of military families.

Eligible community infrastructure projects are any complete and useable transportation projects; community support facilities (e.g., school, hospital, police, fire, emergency response, or other community support facility); and utility infrastructure projects [e.g., water, wastewater, telecommunications, electric, gas, or other utility infrastructure (with necessary cyber safeguards)] that:

- are located off a military installation;
- support a military installation;
- are owned by a state or local government or a not-for-profit, member-owned utility service;
- will enhance military value, military installation resiliency, and/or military family quality of life at the supported military installation (definitions of these enhancements are provided in Section E, Paragraph 1 of the Notice of Funding Opportunity);

- are endorsed by the local installation commander representing the installation that will benefit from the proposed project; and
- involve ground-disturbing work that has not yet commenced but is construction-ready.

The availability, reliability, and security of electrical, water, and fuel resources and supporting infrastructure are critical for installation resiliency and continuity in case of events driven by climate change.

## Department of Defense Climate Adaptation Plan

The 2021 Climate Adaptation Plan builds upon the actions and activities outlined in the DOD 2014 Climate Change Adaptation Roadmap (DoD 2014b) and meets the requirements of Section 211 of Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad. The Council on Environmental Quality (CEQ) subsequently indicated that the primary purpose of this Plan is to "integrate climate change adaptation and climate resilience across agency programs, management of real property, public lands and waters, and financial services."

DoD policy (DoD 2016a) states that all operations, planning activities, business processes, and resource allocation decisions must include climate change considerations. The purpose of doing so is to ensure the military forces of the United States retain operational advantage under all conditions, leveraging efficiency and resiliency to ensure DoD forces are agile, capable, and effective. Climate change adaptation must align with and support the Department's warfighting requirements. As no entity has the luxury of "opting out" of the effects of climate change, no portion of the Department — not a Service, a Command, or an activity — can opt out of the requirement to adapt to a changing climate. Every element in the Department should consider appropriate ways to align their work with the initiatives and activities contained within this document.

## Intergovernmental Support Agreements

Intergovernmental support agreements (IGSAs) are formal public-public partnerships between the military and state or local governments. The purpose of IGSAs is to provide, receive, or share installation support services. IGSAs can create efficiencies for the military to enhance mission readiness and are an effective partnering strategy. The IGSA statute (10 U.S.C. § 2679) authorizes such agreements based on a determination that the agreement will serve the department's best interests by creating efficiencies or economies of scale, including reducing costs or enhancing mission effectiveness. The law also states that IGSAs are not subject to other provisions of law governing the award of federal government contracts for goods and services. In addition, IGSAs may be entered into on a sole source basis with a state or local government and may use wage rates paid by that state or local government.

At the same time, there are limitations on the use of IGSAs. Specifically, any installation services obtained through the state or local government must already provide an IGSA for its own use, and any contract awarded by the federal government or by a state or local government, according to an IGSA, must be awarded competitively. In addition, IGSAs cannot circumvent the Office of Management and Budget Circular A-76 requirements, which govern competitions to determine whether government employees or private contractors should perform commercial activities. Finally, IGSAs are statutorily limited to a term of no more than 10 years, but the statute does not preclude their renewal after the initial agreement period ends.

### Department of Air Force Policy Directive 90-22 – Air Force Community Partnership Program

The Air Force Community Partnership Program focuses primarily on enhancing mission effectiveness, creating efficiencies or economies of scale, and improving the quality of life for military members and their families while providing mutual benefit to an installation and its surrounding community. The effective development, management, implementation, and evaluation of such partnerships support the mission of WPAFB and its partner communities, enhancing mission viability and quality of life for the local communities.

### Air Force Instruction 90-2001 – Mission Sustainment

The Air Force Mission Sustainment Program preserves and protects military readiness by mitigating or preventing current and potential risks caused by hazards within the installation complex and mission footprint. The Mission Sustainment Program comprises various Air Force programs – AICUZ, REPI, Operations, Public Affairs, and other relevant programs at each specific base that discuss topics and address compatibility issues inside and outside the fence.

## 5.2 State Laws, Regulations, and Programs

State authorities are required to follow federal statutes and regulations, which are administered through state agencies. Additionally, states commonly enact supportive legislation to enhance protections for the environment, development, or military installations. State governments can also allow regional and local jurisdictions to enact regulations and programs to protect certain areas. States generally encourage industry development and expansion in their respective communities and promote economic growth through state-sponsored developmental organizations and programs.

Ohio has no laws or regulations governing land use around military installations. However, the State allows regional authorities, counties, and cities to adopt ordinances and regulations to protect land use around military installations.

## 5.3 Installation Studies and Programs

Military installation development and management plans guide land use and development activities on bases and sometimes on land adjacent to installations. These tools principally guide land use decisions within the boundaries of installations or mission footprints and are instrumental in assisting and guiding land use decisions regarding base operations.

### Air Installations Compatible Use Zones Study, 2022

The AICUZ study for WPAFB was developed in 2022. The AICUZ study aims to help communities plan compatibility around the installation's noise, safety, and imaginary surfaces. The program recommends land use controls within noise zones, accident potential zones, and vertical height of structures within the area surrounding Wright-Patterson AFB. The AICUZ Study provides a land use compatibility analysis for these factors. The AICUZ also considers bird/wildlife aircraft strike hazards, electromagnetic interference, lighting, smoke, dust, and steam within the Hazards to Aircraft Flight Zone. The AICUZ maps were provided as a starting point for this CUP.

## Integrated Natural Resource Management Plan, 2021

The 2021 INRMP was developed in compliance with the Sikes Act to guide natural resource management consistent with the Air Force's mission. The INRMP implements an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner consistent with the military mission; integrates and coordinates all natural resources; provides for sustainable multipurpose uses of natural resources; and provides public access for use of natural resources subject to safety and military security considerations.

## Installation Development Plan

The WPAFB Installation Development Plan is the installation's planning document for future development, real property, and facility projects on the installation for the next 20 to 30 years. The Plan aligns with the strategic vision for the installation and includes a planning vision for facilities in Areas A and B.

# 5.4 Local Regional Tools

Regional economic, residential, and transportation needs span large geographic areas that include military installations. While the military is a stable economic contributor, it is not the sole provider for many regions. However, development forces driving regional expansion are interwoven with military installations. Military operations can negatively impact incompatible land uses within surrounding communities while also being a regional economic engine. This conflict is mitigated by utilizing regional and local ordinances, organizations, plans, programs, and studies to build collaborative partnerships that identify opportunities to enhance community growth and protect existing and future military mission sets.

## Organizations and Regulations

### Miami Valley Regional Planning Commission

Since 1964, the MVRPC has provided planning services to southwest Ohio. The MVRPC promotes collaboration among communities, stakeholders, and residents to advance regional priorities and serves as a common ground where area partners work toward a shared vision across the region.

Web Page: https://www.mvrpc.org/

### Wright-Patterson Regional Council of Governments

The WPRCOG comprises the Cities of Dayton, Fairborn, Huber Heights, Beavercreek, and Riverside, as well as Bath Township. The WPRCOG was formed out of a mutual interest and desire to promote compatible development and activities supporting the continued operations of WPAFB and Springfield Air National Guard Base. Through cooperation and coordinated powers and duties, WPRCOG members provide residents with improved efficiency and the sharing of benefits and costs for regional economic development and land use planning while supporting the military. The authority of the WPRCOG is limited to the objectives as approved by the WPRCOG Board of Directors. It shall not interfere with any independent authority of any member community or political subdivision.

Web Page: https://wright-pattcog.com/

## DaytonDefense

DaytonDefense is a nonprofit industry association based in Dayton, Ohio, that promotes regional economic development for local defense contractors, WPAFB, and the federal sector. DaytonDefense works with defense businesses and professionals in Dayton and is committed to integrating and promoting the business interests of Dayton-area defense contractors, aligned with the interests of all those who live and work in the Dayton area.

Web Page: https://daytondefense.org/

## Dayton Development Coalition

The Dayton Development Coalition's mission is to recruit, retain, and expand job opportunities in the Dayton region. The Coalition collaborates with local, state, and federal partners in advancing the region's economic priorities. It is a regional network partner for JobsOhio. In 2022, the Coalition released Wright-Patt 2030, a plan outlining the region's strategic efforts to grow and retain military missions, encourage community partnerships, and grow industries supporting the base.

Web Page: https://daytonregion.com/

## Dayton Region Military Collaborative

The Dayton Region Military Collaborative (DRMC) provides a discussion platform for military-community communication. Members share the status of their initiatives and provide an easier way to reach key stakeholders. The DRMC platform allows the military and the community to work together to address common opportunities and challenges while exploring and supporting partnership efforts for win-win situations.

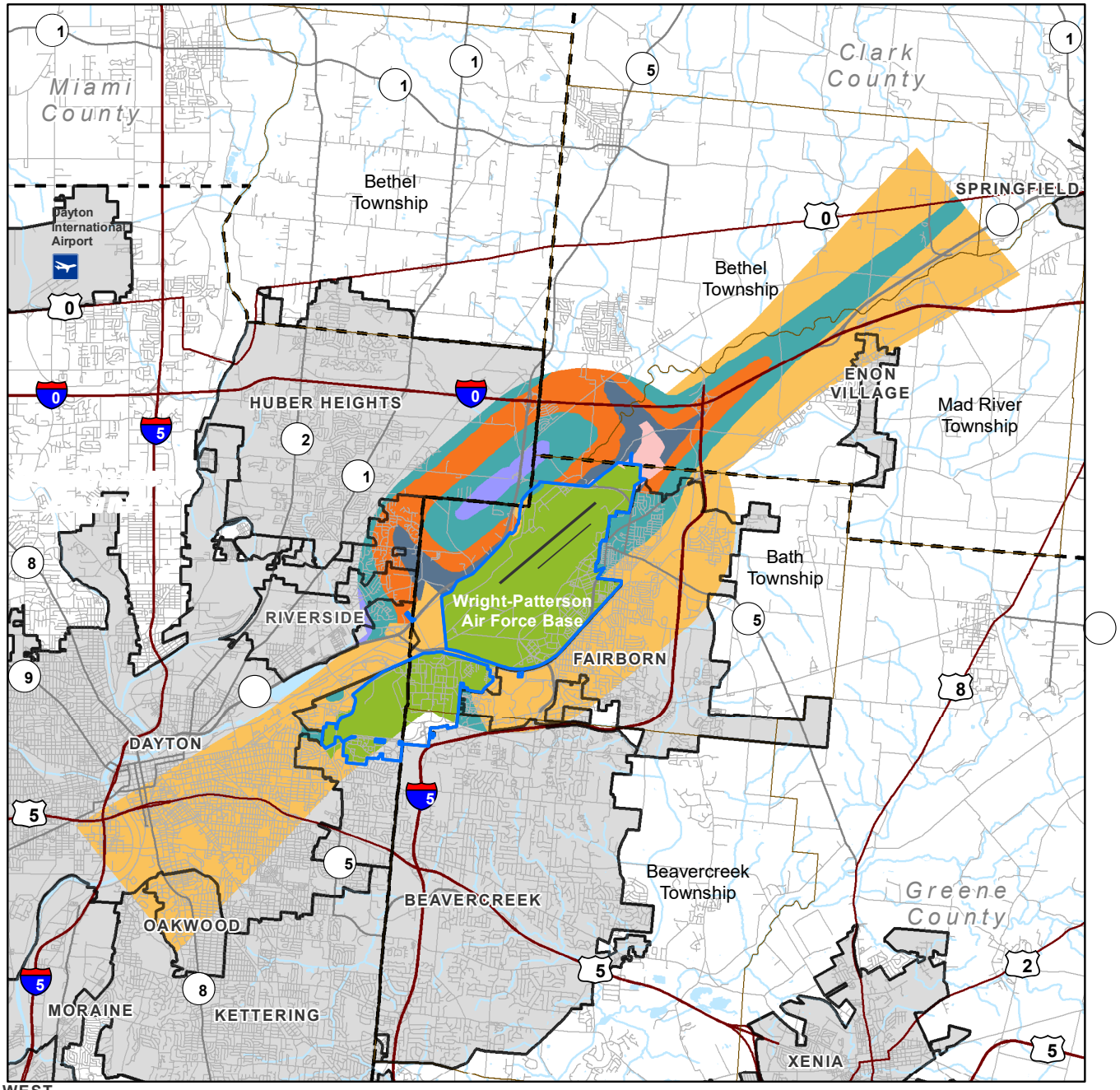
Web Page: https://www.collaborationdayton.org/

## Wright Patterson AFB Joint Land Use Study, 1996

The WPAFB Joint Land Use Study (JLUS) was developed in 1996 in collaboration with community residents, WPAFB leaders, stakeholders, and local officials. The Study aimed to ensure the vitality of Clark and Montgomery Counties and regional jurisdictions and encourage a successful partnership between the jurisdictions and the installation.

## Wright-Patterson AFB Airport Zoning Regulations, 1997

The document provides land use regulations within six defined zoning districts, referred to as the Airport Overlay Zoning Districts, surrounding WPAFB. These districts consist of land use and construction requirements in addition to the zoning of the local jurisdictions. When a parcel falls within more than one district with differing requirements, the most stringent requirement applies.




**Airport Zoning Districts**

- District I – Runway Protection Zone
- District 2 – 75 to 79 dB DNL Noise Contour
- District 3 – 70 to 74 dB DNL Noise Contour
- District 4 – 65 to 69 dB DNL Noise Contour
- District 5 – Built-Up Areas
- District 6 – Federally Owned Public Lands
- N/A - Not Applicable

- Wright-Patterson AFB
- City Boundary
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Local Road
- Runway

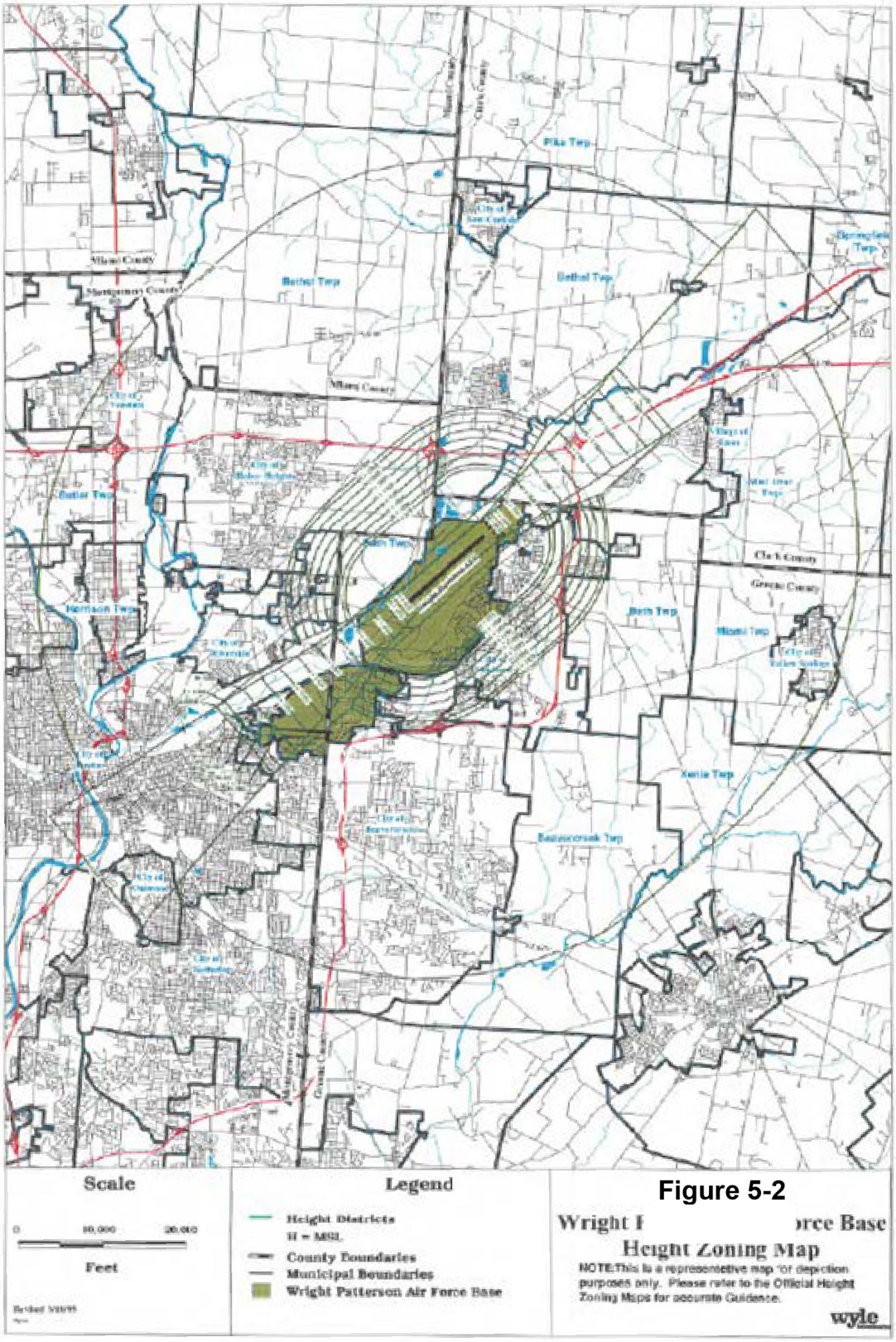
Matrix

Source: Wright-Patterson AFB Airport Zoning Regulations, 1997.
(Digitization) Matrix Design Group, 2023.

0 1 2 4 Miles

**Figure 5-1 Wright-Patterson Airport Zoning Districts**

**Figure 5-2** Wright-Patterson AFB Height Zoning Map



## Ordinances and Plans

In Ohio, cities and counties regulate land uses through various planning efforts, such as comprehensive plans and zoning ordinances. Table 5-2 summarizes each jurisdiction's planning documents and planning regulations related to military compatibility. The sections that follow the table provide additional information from the documents.

**Table 5-2** Assessment of Local Tools to Address Compatibility

| Jurisdiction | Comprehensive Plan | Zoning: Density | Zoning: Height Restrictions | Zoning: Lighting | Zoning: Sound Attenuation |
|---|---|---|---|---|---|
| City of Beavercreek | ■ | ■ | □ | □ | □ |
| City of Dayton | ■ | ■ | ■ | ■ | ■ |
| City of Fairborn | ■ | ■ | ■ | ■ | ■ |
| City of Huber Heights | ■ | ■ | ■ | ■ | ■ |
| City of Riverside | ■ | ■ | ■ | ■ | □ |
| Bath Township | ■ | ■ | ■ | ■ | ■ |
| Beavercreek Township | ■ | □ | □ | □ | □ |
| Clark County | ■ | ■ | ■ | □ | ■ |
| Greene County | ■ | □ | ■ | □ | ■ |
| Montgomery County | ■ | □ | ■ | □ | ■ |

*Legend:*

- ■ *The tool exists and addresses land use issue(s) related to military compatibility.*
- ■ *The tool is utilized but does not address land use issue(s) related to military compatibility.*
- ■ *The tool is utilized but only partially addresses land use issue(s) related to military compatibility.*
- □ *The jurisdiction does not employ this tool.*

## Local Comprehensive Plans

A comprehensive plan provides an overview of a community's history, current condition, and future vision. Comprehensive plans present a vision for the community's future highlighted by goals and objectives that the community seeks to implement within 20 years of publication. Comprehensive plans often address economic development, housing, implementation strategies, infrastructure, land use, recreation, transportation, utilities (such as water, electricity, and sewer), and zoning. Details within each comprehensive plan, if available, that account for or address WPAFB as a distinct neighbor, district, or character area are shown below.

### City of Beavercreek

Though the city has a Land Use Plan, it does not have a Comprehensive Plan.

### City of Dayton

Dayton's CitiPlan 2020 vision from 1999 does not include a planning vision or district around WPAFB.

### City of Fairborn

Fairborn's 2016 Comprehensive Plan seeks to promote neighborhood and corridor improvements to WPAFB employees, families, and visitors through the following initiatives:

- Provide a competitive residential and commercial community that supports the installation needs.
- Seek to limit heights to ensure buildings do not impede aircraft operations at WPAFB.
- Create a partnership between WPAFB and the City of Fairborn.
- Identify and provide the necessary goods, services, and programs for WPAFB staff, families, and visitors in the downtown.
- Develop marketing materials specifically for attracting WPAFB personnel and visitors into downtown Fairborn.
- Identify and provide the necessary goods and services for WPAFB staff, families, and visitors in the downtown core and along the Broad Street corridor.

### City of Huber Heights

Huber Heights' most recent Comprehensive Plan dates from 2011 and does not include compatible planning for WPAFB imaginary surfaces. The city is updating its Plan.

### City of Riverside

Riverside's most recent Comprehensive Plan Update became effective in September 2023. The Plan acknowledges the City's participation in the WPRCOG and its role in growing and maintaining missions at WPAFB. The Plan also establishes an Air Force District for areas of WPAFB adjacent to the City. At the time of this writing, the city is updating its zoning code to achieve its Comprehensive Plan goals and improve compatibility with this CUP.

### Bath Township

Bath Township leverages the Land Use Plan *Perspectives 2040* and utilizes the six established goals:

- Protect Farmland
- Preserve Natural Resources
- Revitalize Existing Communities
- Focus on Strategically Balanced Land Development
- Expand and Diversify the Local Economy
- Enhance Quality of Life

### Beavercreek Township
The Comprehensive Plan for the Township was updated in 2012. It does not discuss compatible planning around WPAFB.

### Clark County
Clark County has a Comprehensive Plan that was updated in 2018. It promotes compatible land use around WPAFB.

### Greene County
Greene County employs a Land Use Plan instead of a traditional comprehensive plan. Its land use plan, *Perspectives 2040 was adopted in August 2023. It builds upon the success of previous planning efforts that began in the late 1970s and the previous document, Perspectives 2020. The focus of Perspectives 2040 is to continue strategies that work and* implement new strategies and concepts to manage future land use.
It includes Implementation Strategy #5, which is labeled "Encourage compatible land-use decisions around WPAFB," with the goal of "Expand and Diversify the Local Economy."

### Montgomery County
Montgomery County's Comprehensive Plan does not include a planning vision or district around WPAFB.

## Local Ordinances
Local ordinances, development codes, and zoning codes regulate land uses and can be effective tools for implementing policy to support military-community compatibility. This can be done by regulating the types of land uses in the jurisdiction and factors related to such land use, including density/intensity, lighting, heights, and sound attenuation. These are important factors to consider as they relate to the operations and mission of WPAFB.

While the local communities generally do not have specific language within their comprehensive plans, the 1997 WPAFB Airport Zoning Regulations exist to ensure that the development surrounding WPAFB is compatible with the base. Clark, Greene, Miami, and Montgomery Counties adopted the Airport Regulations. Montgomery County is the lead Airport Zoning Inspector for the regulations, but implementation is delegated to local jurisdictions. The WPAFB Zoning Regulations require compliance with the sound level reduction standards (in Table A of the regulations) for all proposed uses and structures within the zoning districts; restrictions on the height of trees, buildings, and structures; and light and electrical interference limitations.

### City of Beavercreek
The City's land use and zoning codes were updated in 2020/2021. However, no land use regulation impacts or impacts WPAFB flight operations.

### City of Dayton
Dayton's zoning code was established in 2006 and most recently updated in 2022. There is no mention of planning around land uses impacted by aircraft operations from WPAFB.

### City of Fairborn

The City of Fairborn adopted its current zoning code in 2017. Height restrictions exist to ensure safe takeoff and landing of aircraft at WPAFB. The code seeks to limit aviation hazards presented by structures built within the flight path of the runways at WPAFB; consultation with the WPAFB Zoning Board is required to maintain "general conformity with regulations governing 'Aircraft Approach and Airspace Areas.'" The zoning code requires outdoor lighting to comply with outdoor lighting requirements.

### City of Huber Heights

Huber Heights republished its City Code in 2019. This regulation includes: "...The proposed development meets all ...[WPAFB] height or abatement requirements."

### City of Riverside

The City of Riverside's zoning regulations reference compatibility with WPAFB concerning the heights of structures.

### Bath Township

Bath Township's current zoning regulations were certified in 2008. Height restrictions exist to ensure the safe takeoff and landing of aircraft at WPAFB. Wireless communication towers under 200 feet in height must comply with FAA/WPAFB guidance. The Township has adopted the WPAFB Airport Zoning Regulations to "...ensure appropriate density and noise building techniques are implemented." This ensures that neither the Township nor the installation encroaches/impacts the approved uses within the Regulations. All requests for zoning changes, variances, conditional uses, and zoning certificates in the Township must conform to the Regulations. Montgomery County's Chief Building Inspector is responsible for zoning administration and enforcing the Regulations.

### Beavercreek Township

The Township does not have code provisions that address compatibility with WPAFB.

### Clark County

Zoning in Clark County is delegated to the cities and townships. The respective cities and townships discuss applicable zoning code provisions relative to compatibility with WPAFB.

### Greene County

Zoning in Greene County is delegated to the cities and townships. The respective cities and townships discuss applicable zoning code provisions relative to compatibility with WPAFB.

### Montgomery County

Montgomery County's zoning is delegated to the cities and townships within its boundaries. The respective cities and townships discuss any applicable zoning code provisions relative to compatibility with WPAFB.


# 6 Compatibility Assessment

Compatibility can be defined as the balance, or compromise, between community needs and interests and military needs and interests in relation to military readiness.

Compatibility planning aims to promote a collaborative environment in which community and military entities communicate and coordinate to identify and implement mutually supportive actions that allow both parties to achieve their objectives. This collaborative approach provides the context for developing and recommending policies and actions through a CUP Implementation Plan.

This chapter identifies compatibility issues and provides technical background on the findings relevant to the CUP.

## 6.1 Assessment Overview

A compatibility issue is a matter that impacts, hinders, or presents an obstacle to current or future military missions or nearby communities. These issues often require collaborative action to be prevented, resolved, or mitigated. This chapter assesses compatibility issues – or challenges – identified during the development of the WPAFB CUP. Compatibility issues may originate in nearby communities and could impact, hinder, or adversely affect military missions. Conversely, compatibility issues may arise on military installations and adversely affect nearby communities. Additionally, this CUP identifies best practices. Best practices are tools and strategies that project stakeholders can actively employ to ensure current and future compatibility with military missions. This chapter provides information for stakeholders to be sufficiently aware of and knowledgeable about the compatibility issues and best practices for the Project Area and the surrounding communities and military resources.

The CUP assessed 24 factors to discover potential compatibility issues detailed in this chapter. The CUP Project Team used several variables to determine whether military and community plans, programs, and activities are compatible or in conflict. The compatibility issues were identified through the following:

- Meetings with the Steering Committee,
- Public workshops, and
- The technical evaluation and experience of the Project Team.

Throughout the development and before the publication of the WPAFB CUP, opportunities for additional stakeholder input were made available on the project website and at stakeholder events.

The compatibility assessments in this chapter provide foundational information for stakeholders and readers for the strategies presented in Chapter 7. Strategies offer specific, viable recommendations to mitigate or prevent encroachment. The information provided may also guide stakeholders in developing solutions beyond the implementation strategies.

## Compatibility Factor Overview

Several variables determine whether military and community activities, plans, and programs are compatible or incompatible. For the WPAFB CUP, 24 compatibility factors were used to identify challenges, opportunities, and solutions within the Project Area. These compatibility factors are categorized into social, resource, and development. The compatibility factors evaluated here may have one or more challenges or concerns associated with each specific factor. Some challenges may apply to multiple compatibility factors and require distinct approaches. Other compatibility factors were evaluated but determined not to present specific concerns, issues, or challenges at a level that would impact the mission of WPAFB. Additionally, this chapter presents some compatibility factors as topics of awareness to monitor in the future.

Social factors are an emerging component of compatible use studies and are increasingly important as military installations and defense communities grow together. These factors include communication and coordination among the base and stakeholders and related policies, programs, military family support, and public services such as transportation, education, and access to medical care.

Resource factors account for shared physical or environmental resources that equitably affect military installations and defense communities, such as air quality, or present competing requirements, such as access to clean water or competing land or development interests. Resource factor assessments are fundamental for addressing base and community resiliency and developing collaborative implementation strategies, such as shared infrastructure projects or joint response preparation and planning. Resource factors include conservation, preservation of cultural heritage, environmental protection, and access to open spaces.

Development factors include traditional compatibility factor assessments related to land use, development, the capabilities and capacities of public infrastructure, and the potential impacts of future projects on military installations. They also include public health and safety concerns related to military training and operations, such as aviation safety, noise, dust, light and glare, or vibrations. Conversely, they also consider risks to the safety of military personnel, specifically pilots and aircrew, due to vertical obstructions and/or energy development.

### Social Factors

- Communication/Coordination
- Cultural Resources
- Housing Availability
- Public Services
- Public Trespassing

### Resource Factors

- Air Quality
- Biological Resources
- Frequency Spectrum Capacity
- Land/Airspace Competition
- Resiliency
- Scarce Natural Resources
- Water Quality/Quantity

### Development Factors

- Anti-Terrorism/Force Protection
- Dust/Smoke/Steam
- Energy Development
- Frequency Spectrum Impedance
- Infrastructure Extension
- Land Use
- Light and Glare
- Noise
- Roadway Capacity
- Safety
- Vertical Obstructions
- Vibration

## Compatibility Factor Evaluation Methods

This section outlines the methodology used to assess the findings identified in the WPAFB CUP. The findings in this Plan document the recognized best practices and compatibility issues for the military installation, nearby communities, and project stakeholders.

Findings of best practices currently in use by WPAFB and stakeholders promoting compatibility within the region are highlighted in this report. The assessment of the best practices is intended as a review of the successful measures the community has undertaken to address mission compatibility and how the initiatives can be utilized or expanded for continued success. These best practices are also identified in the CUP Implementation Plan.

Compatibility findings were assessed to ascertain the existing or potential impacts, expressed as the severity of current or future risk posed to the military mission or surrounding communities, or in some instances, both.

Examining compatibility issues involved a comprehensive and inclusive discovery process to identify significant stakeholder issues relative to the 24 factors. During the beginning phase of the Plan, interviews were conducted with key project stakeholders to discuss the CUP process and document any compatibility issues they felt existed or could exist in the future.

Additional compatibility issues were identified through meetings with the CUP Steering Committee, at public workshops, and based on the technical evaluation and experience of the project consultant. Opportunities for additional stakeholder input were provided on the project website and at other stakeholder events throughout the Plan.

## Compatibility Factors Evaluated Without Findings

Of the 24 compatibility factors considered, 13 were inapplicable to this CUP based on the lack of issues identified by stakeholders, the public, and the CUP team. These factors are listed below:

- Air Quality
- Frequency Spectrum Capacity
- Infrastructure Extensions
- Public Services
- Scarce Natural Resources
- Frequency Spectrum Impedance
- Legislative Initiatives
- Public Trespassing
- Vertical Obstructions
- Energy Development
- Housing
- Light and Glare
- Vibration

Although no compatibility issues relating to these 13 factors were identified, they are defined and briefly summarized in this section to acknowledge that each factor was considered and evaluated.

### Air Quality

Air quality is defined by criteria for air pollutants and hazardous air pollutants regulated at the federal and state levels. For compatibility, the primary concerns are pollutants that limit visibility, such as particulates, ozone, etc., and potential non-attainment of air quality standards that may limit future operational changes or new growth/development at the installation or in the region.

### Energy Development

The development of energy sources, including alternative energy sources such as solar, wind, or geothermal, could pose compatibility issues related to glare (solar energy), vertical obstruction (wind turbines and geothermal steam plumes), and radar operations (wind generation). It is in the interest of the military and the communities to collaborate and support alternative energy development for energy security and economic reasons.

### Frequency Spectrum Capacity

WPAFB does not directly control frequency spectrum allocation and management. Instead, spectrum management for military installations falls under the purview of the DoD, specifically through its spectrum management authorities. The DoD, including agencies like the 88 ABW Spectrum Manager, coordinates spectrum allocation, usage, and interference mitigation for military operations.

### Frequency Spectrum Impedance

Impedance, or interference, pertains to the range of electromagnetic frequencies used for communication and other transmissions, including radio, cellular phones, and television channels. Increasing demand for frequency bandwidth from commercial applications such as cellular phones, computer networks, GPS units, and mobile radios directly competes with the military's existing and future requirements.

### Housing

Local housing availability addresses the supply of and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel stationed at an installation and the supply of military family housing provided by the DoD.

### Infrastructure Extension

Infrastructure plays an important role in land use compatibility. It can enhance the operations of an installation and nearby communities by providing needed services while eliminating competition for those resources. Conversely, infrastructure can create encroachment issues if facilities are expanded without considering the consequences of future development. Extending or expanding community infrastructure to areas adjacent to an installation can induce growth that may result in incompatible uses and conflicts between a military mission and community activities and needs. Within general planning efforts and through appropriate consideration and guidance, infrastructure extensions can serve as a mechanism to guide development toward appropriate areas, protect sensitive land uses, and improve compatibility between community land uses and military missions.

### Legislative Initiatives

Legislative initiatives at the federal, state, and local levels can significantly impact compatibility planning by allowing or restricting local jurisdictions' abilities to control land use and planning activities near military assets. Legislation can prompt changes in state and local laws and ordinances to support the objectives of recommended CUP strategies.

### Light and Glare

Light emitted from communities at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations. Conversely, high-intensity light generated from airfield lighting and needed in military areas may negatively impact an adjacent community.

### Public Services

Concerns about public services include the assurance that adequate services such as police, fire, emergency services, parks and recreation, and water/wastewater/stormwater infrastructure are of good quality and available for use by the installation and surrounding communities as the area develops. The supply and demand of these public services during emergency situations is also considered.

### Public Trespassing

Public trespassing addresses both intentional and unintentional trespassing on a military installation. The potential for trespassing increases with the proximity of public use areas such as hiking and off-roading areas.

### Scarce Natural Resources

Pressure to gain access to valuable natural resources (such as oil, natural gas, minerals, and water) located on military installations, within military training areas, or on public lands historically used for military operations can impact land utilization and military missions.

### Vertical Obstructions

Vertical obstructions comprise buildings, trees, structures, equipment, or other features of varying heights that encroach into the navigable airspace used for military operations. Generally, the height and distance of the object from the nearest airfield or heliport are the two primary factors for an object to be considered a vertical obstruction. When located at a certain height and/or in a specific location, these objects can present a safety hazard to the public and military personnel and potentially impact military readiness.

The objects of greatest concern are those closest to an airfield; however, objects reaching 100 feet or more can compromise low-level flight operations by limiting the areas where such operations can occur. These objects can include a range of obstructive features from man-made, such as telephone poles and power lines, to natural, such as tall trees and other features of the land.

### Vibration

Vibration is an oscillation or motion that alternates in opposite directions and may occur from an impact, explosion, noise, mechanical operation, or other environmental change. Whether excessive or unusual, vibration may be caused by military, civilian, or industry activities and can disrupt civilian activities and impact quality of life.

## 6.2 Previous Compatibility Efforts

Perhaps nowhere today is the question of the DoD's landowner responsibility more prominent than at military air installations. Airfields, in general, are viewed as incompatible with all but the most rural regions. However, many airfields exist within thriving communities. Besides the flying activities, which present a high-noise environment and some accident potential, air bases often present many other potential threats to the surrounding community. Extensive munition stockpiles, vast amounts of stored volatile fuels, and conveying pipelines are certainly the most overt. However, the potential effects of noisy ground testing procedures and air, water, and ground pollution, to name a few, are equally dangerous. The DoD is acutely aware of its responsibility to minimize the public's exposure to the hazards associated with air installations while protecting its bases' operational capabilities. Accomplishing this mutual goal is not a simple feat. Instead, it is a complex problem with many dynamic and interactive elements.

The DoD established the AICUZ Program and carried out installation-specific studies to assist local governments in adhering to land use compatibility guidelines. These guidelines are integrated into various community plans, zoning ordinances, subdivision regulations, building codes, and related documents. WPAFB has commissioned and partnered with the community on various compatibility studies in 2022, 1995, and 1975. These studies have served as a resource for the Office of the Secretary of Defense-funded compatibility studies and as springboards to establish and enhance regulations, to set up the Joint Airport Zoning Board, and to be used by the community in land use discussions, policy initiatives, legislative priorities, and funding opportunities.

### 1975 AICUZ and Introduction of Zoning Regulations

In 1975, following the establishment of AICUZ, the WPAFB Joint Airport Zoning Board was formed. Its purpose was to enforce zoning regulations to prevent incompatible land use around WPAFB. The main aim was safeguarding residents' well-being by ensuring that surrounding areas adhered to appropriate land use compatible with the safety and noise zones. To achieve this, 11 zoning regulation districts were established. These districts combine the accident potential and aircraft noise zones from the 1975 AICUZ Study. The regulations imposed specific, tailored limitations on land use activities within each district.

### 1995 AICUZ, 1996 Joint Land Use Study, and 1997 Revised Airport Zoning Regulations

The 1995 WPAFB AICUZ update introduced planning noise contours based on a maximum mission set, utilizing the DNL metric. Long-term planning by local land use authorities involves strategies to promote compatible development of current and future land use. AICUZ studies employ planning contours to provide a long-term perspective (typically five to 10 years) on the expected aircraft noise environment during projected aircraft operations. This aligns with the planning horizon used by state, tribal, regional, and local planning bodies. It is worth noting that the 1995 AICUZ Study set a planning horizon of 20 years. Given the long-range nature of planning, the Air Force updates the AICUZ planning contours whenever future missions and operations necessitate changes to the aircraft noise contours.

The 1995 AICUZ Study was followed by the 1996 JLUS, which consolidated the 11 zoning districts into six districts. Like the 1975 zoning regulations, the land use restrictions that applied would stay in place. The JLUS and revised zoning regulations enhanced these regulations by including:

- restrictions on specific facility types,
- restrictions on residential land use, and
- standards for sound level reduction performance in residential and commercial structures.

The adjustments and inclusions saw the land use controls that included restrictions on the following:

- Facility types, such as:
  - Animal hospitals and kennels,
  - Auditoriums,
  - Concert halls,
  - Educational facilities or services,
  - Institutional facilities,
  - Medical and health service facilities,
  - Playgrounds or neighborhood parks,
  - Sports areas,
  - Transient lodging, and
  - Selected commercial and industrial uses.
- Height
- Lights and electrical interference
- Standards for lot coverage
- Standards for the sound level reduction performance of residential and commercial structures
- Construction of residences
- Manufacture and storage of flammable materials

# 2022 Air Installations Compatible Use Zones Study

The 2022 AICUZ Study for WPAFB is an updated version of the 1995 AICUZ Study. The need for the update arose from several factors, including changes in land use over two decades, regional comprehensive plans, adjustments to the DoD's land use compatibility tables concerning safety and noise, and the Hazards to Aircraft Flight Zone (HAFZ).

Within the AICUZ Study is a generalized land use breakdown assessing the land surrounding the base within the imaginary surfaces, referred to as the HAFZ by Air Force planners. The 2022 AICUZ Study conducted a detailed land use analysis and compatibility assessment within the aircraft safety zones — the CZs and APZs — and the aircraft noise contours. Additionally, the Study evaluated potential future development within the HAFZ around WPAFB. It also identified the current flight paths.

WPAFB assumes responsibility for flight safety, noise abatement, and active participation in existing local jurisdictional land use planning processes as part of its AICUZ Program responsibilities. Air Force policy and guidance stipulate that installation leadership must periodically review current flight operation practices and assess their compatibility with populated areas and other local conditions. Below is a list of actions that **WPAFB has committed to undertaking:**

- Ensure that, wherever possible, air operation planners route flights over sparsely populated areas to reduce the exposure of people and property to a potential accident.
- Periodically review existing traffic patterns, instrument approaches, weather conditions, and operating practices and evaluate these factors related to populated areas and other local conditions. This review aims to limit, reduce, and control the impact of noise from flying operations on surrounding communities.
- Consider the establishment of a community forum between the installation and surrounding stakeholders to discuss land use and other issues of concern; the installation anticipates holding these meetings on an annual basis.
- Schedule land use planning meetings to provide a forum for agencies to discuss future development and address issues that may surface because of new proposals.
- Provide copies of the AICUZ Study to local, county, tribal, and regional planning departments and zoning administrators to aid in the planning process, as well as provide copies to the appropriate state and federal agencies.

**The AICUZ Study recommended the below actions for local governments:**

- Local government planners should consider AICUZ policies and guidelines when developing or revising city, town, or county comprehensive plans and use AICUZ overlay maps and Air Force Land Use Compatibility Guidelines to evaluate existing and future land use proposals.
- Local governments should modify or update zoning ordinances, as necessary, to reflect the compatible land uses outlined in the AICUZ Study, including the maintenance of the WPAFB Airport Zoning Regulations that are currently in place.

- Local governments should ensure that new development applications or properties applying for a change of use are submitted to WPAFB to assess those applications for potential impacts on defense missions. The WPAFB 88th ABW/PA Office can provide a land use planning point of contact.
- Local governments should review their capital improvement plans, infrastructure investments, and development policies to ensure they do not encourage incompatible land use patterns near WPAFB, with particular emphasis on utility extension and transportation planning.
- Local governments should implement or modify height and obstruction ordinances that reflect and are consistent with current Air Force and 14 CFR 77 requirements, presented in this study as HAFZs.
- Fair disclosure ordinances should be enacted to require disclosure of those AICUZ Study items that directly relate to military operations at WPAFB.
- Where allowed, local governments should require real estate disclosure for individuals purchasing or leasing property within noise zones, CZs, or APZs.
- Local governments should enact or modify building/residential codes to ensure that any new construction near WPAFB has the recommended noise level reduction measures incorporated into the design and construction of structures.
- Government planning bodies should monitor proposals for tall structures, such as wind turbines and communication towers, to ensure that new construction does not pose a hazard to navigable airspace around WPAFB. Where appropriate, they should coordinate with the FAA on the height of structures.
- Local government land use plans and ordinances should reflect AICUZ Study recommendations for development in CZs, APZs, and noise zones.
- Local governments should consult WPAFB on planning and zoning actions that can affect installation operations.
- Local governments should invite Air Force leadership to be ex officio members on boards, commissions, and regional councils addressing long-range development and other planning policies.
- Local governments should encourage the development of a working group of cities, county, and WPAFB representatives to discuss land use concerns and major development proposals.

**The AICUZ recommended the below actions for real estate professionals and brokers:**

- They should know where noise zones, CZs, or APZs encumber land near the installation and invite installation representatives to meetings to discuss the AICUZ Program.
- They should disclose noise impacts to all prospective buyers of properties within areas with noise levels greater than 65 dB DNL or within the CZs or APZs.
- They should require the Multiple Listing Service to disclose noise zones and the location of CZs or APZs for all listings.

**The AICUZ recommended the below actions for developers:**

- They should know where the noise zones and CZs or APZs encumber land near the installation and consult with WPAFB on proposed developments within the AICUZ footprint.
- They should participate in local discussions regarding existing zoning ordinances and subdivision regulations to support the compatible land uses outlined in this AICUZ Study by implementing a zoning overlay district based on noise contours, CZs, and APZs.

**The AICUZ recommended the below actions for local citizens:**

- They should participate in local forums with the installation to learn more about the installation's missions.
- They should become informed about the AICUZ Program and learn about its goals, objectives, and value in protecting the public's health, safety, and welfare.
- When considering property purchases, they should ask local real estate professionals, city planners, and installation representatives about noise and accident potential.

# 6.3 Compatibility Findings

## Social Factors

Social factors assessed are services, identifiable social artifacts and conditions, and governmental factors that may create compatibility issues between the community and the military. Social factors include Communication/Coordination, Cultural Resources, Housing Availability, Public Services, and Public Trespassing.

Three compatibility factors in this category were found to have issues:

- Communication/Coordination
- Cultural Resources
- Biological Resources

## Communication/Coordination

Communication/coordination (COM) refers to programs, plans, and partnerships that promote interagency communication and coordination and disseminate information to the public and other stakeholders.

**Jurisdictions and military installations should proactively offer pertinent and up-to-date information to the public.**
**This practice ensures that residents and other stakeholders stay well-informed about ongoing activities, fostering confidence and garnering community support.**

Interagency communication serves the general welfare by promoting a comprehensive planning process that includes all stakeholders. Coordination supports developing and including mutually beneficial policies for local communities and the military in local planning documents, such as comprehensive plans.

COM-1

### External coordination with WPAFB and tenant organizations needs to be more consistent.

WPAFB's extensive scale, numerous tenants, diverse mission sets, and operational presence can lead to coordination and collaboration challenges outside the fence line.

Communication between WPAFB and communities throughout the CUP Project Area exists and is generally positive. Although good relationships exist between agencies, elected officials, organizations, and WPAFB, communication protocols must be included in city codes or memorandums of agreement. While information sharing benefits all stakeholders involved, informal communication is often based on relations that individuals have with one another.

Most communities in the Project Area do not have formalized communication with staff or leadership at WPAFB to discuss long-range planning goals and visions for community growth. Formalized communication processes will set

clear roles and responsibilities for how and whom to communicate with within each city and within WPAFB when compatibility issues and concerns arise regarding community growth, collaboration opportunities, or incompatible development.

In that vein, the WPRCOG was established in 2022 and brought together the cities of Beavercreek, Dayton, Fairborn, Huber Heights, and Riverside, and Bath townships. Today, the WPRCOG includes participation from Greene County, the MVRPC, and Wright State University and may grow. Establishing a formal agreement between the WPRCOG and the installation would ensure that lines of communication are understood when there are changes in base leadership and elected officials.

Additionally, military personnel often oversee the various tenants and major WPAFB organizations. Therefore, developing active communication channels and formalizing an agreement that includes coordination protocols, attendees, goals, and maintained/active contact lists will significantly enhance communication, coordination, and collaboration opportunities.

One positive example of a collaboration opportunity is WPAFB and Wright State University's intergovernmental service agreement. The agreement allocates an office and laboratory space in the Neuroscience Engineering Collaboration Building to Air Force researchers, allowing them to work in a facility that houses the region's only advanced magnetic resonance imaging (MRI) scanner dedicated exclusively to research. The partnership strengthens the region as a research, science, and technology leader.

COM-2

**No formalized development review process exists.**

Many neighboring communities and some regional agencies do not engage in formalized communication with WPAFB regarding development and planning processes. Some communities do engage in formalized coordination with WPAFB, but it is specific to certain types of development. This can result in inconsistent coordination of development proposal review.

WPAFB and the surrounding jurisdictions have formal and informal communication methods to discuss and share information about various topics. One such important topic for coordination is development proposals in the community. While each jurisdiction has formalized processes for reviewing development proposals, these processes do not generally include coordination with WPAFB. Formally integrating WPAFB into existing community development review processes allows WPAFB to identify any potential compatibility issues before development is approved. Currently, the surrounding communities coordinate with WPAFB informally. This informal communication, or limited coordination, can become problematic when building and construction permits are provided that do not

require sound attenuation or that create vertical obstructions or other potential incompatibilities that arise from a lack of formalized communication procedures.

Formalized communication is also important for coordinating land uses with regional planning agencies. Regional and state agencies generally plan for larger areas than cities, which could cover more of the Project Area. The plans and programs that these agencies implement can have an impact on the installation by setting the framework for development to occur. Examples of regional agencies that would benefit from ongoing communication include the MVRPC, which develops regional plans and provides planning support to member communities; the Ohio Department of Transportation, which plans and programs roadway improvements; and the Ohio Public Transit Authority, which plans and programs public transit improvements. Integrating WPAFB into existing regional and state agency planning processes will allow WPAFB to proactively inform regional development decisions before physical development can potentially create compatibility issues.

The WPRCOG provides an open forum to pursue federal and state grants, promote compatible growth, and mitigate encroachment. While it provides a forum for open dialogue between regional communities and WPAFB, there are no codified regulations for communication or coordination between cities, counties, townships, and regional and state planning agencies, and the installation. This may prevent new community and installation staff from understanding compatibility issues or knowing when to consult with the installation/communities if there is potential for compatibility concerns. Additionally, informal communication is discretionary; therefore, there is potential for incompatible development to occur if such developments are not communicated in advance and if WPAFB is not included in the review of development plans.

Formalized communication between the installation and communities should outline roles, responsibilities, and points of contact for communicating development proposals to the installation and methods for installation review, which should include a timeframe for review.

COM-3

## A need exists for greater WPAFB outreach to the public.

Residents have noted aircraft noise is an issue for neighborhoods around the base. Additionally, many residents expressed concerns about a lack of information regarding PFAS compounds stored and used at WPAFB since the 1970s.

WPAFB conducts operations that have the potential to impact the community. As such, it is important that flight operations are communicated to the public often to help answer community members' questions. Ongoing communication will also help limit complaints about nuisances, such as noise. The community receives communications about WPAFB and its facilities through the WPAFB Public Affairs Office (PAO), part of the 88th Air Base Wing. The PAO communicates with the community through various outlets, including press and media releases, social media, and the WPAFB website.

These communication methods are both direct and indirect. The PAO provides community notices through news releases for certain operations occurring at WPAFB facilities. For example, the PAO provides notifications when air shows or other non-recurring flight activity occurs at WPAFB. The PAO could send these releases to local municipalities to post on their respective websites and publish them on the WPAFB website.

The PAO also sends releases to media contacts, distributing information through their respective media outlets. These outlets include newspapers, local TV stations, local radio stations, and local magazines. In addition to press and media releases, the PAO uses social media to communicate information to communities. WPAFB has Facebook, Instagram, and X (formerly Twitter) accounts. In addition to utilizing its social media pages to distribute information, the PAO reaches out to local municipalities to post WPAFB-related content on their social media platforms. The WPAFB website also serves as an outlet for disseminating information, resources, and notices to the community inside and outside the base.

WPAFB has stored and used Per- and Polyfluoroalkyl Substances (PFAS) since the 1970s, primarily as Aqueous Film Forming Foam (AFFF). The foam was used as a fire suppressant to combat fuel fires. The product was stored in tanks inside hangars and on firefighting vehicles.

Congress enacted the 2020 National Defense Authorization Act in response to public concern surrounding PFAS contamination by issuing several directives, including a provision requiring the DoD to phase out AFFF at all military installations by October 1, 2024. In response, the Air Force established an AFFF Sundown Policy outlining its plan to lock out and tag out all AFFF hangar systems.

Residents may be unaware of the actions taken by WPAFB to remove existing supplies of AFFF and protect areas susceptible to groundwater intrusion. There are also cutting-edge processes under development and in various stages of implementation that show promise in removing PFAS compounds in groundwater. Such positive stories and status updates could be hosted on a dedicated web page.

A dedicated web page for each issue will support transparency and stewardship as good neighbors to support greater awareness. WPAFB can establish a web page with up-to-date PFAS information, publicizing existing and completed actions taken by the base would alleviate concerns, increase transparency, and allow community members to become involved and educated on the condition of the water supply, cleanup efforts, and the potential short- and long-term impacts of toxic PFAS compounds.

COM-4

### Collaborate on the implementation of CUP recommendations.

Implementing the CUP recommendations will require ongoing coordination and collaboration between equity stakeholders to monitor progress, address potential challenges, and share lessons learned and successes that other CUP partner communities may replicate.

The WPAFB CUP provides strategies (see Chapter 7: Implementation Plan) that identify partners and suggest a timeframe for each recommended strategy. For the recommendations to be successfully implemented, a partnership committee is recommended. Implementation is not part of this OLDCC-funded CUP. However, the OLDCC provides funding for applicants who submit grant proposals for additional follow-on funding for the implementation phase of the recommended strategies in the Implementation Plan.

Collaboration can take place in various ways; the recommended approach is establishing a partnership committee to oversee the Implementation Plan. The implementation phase should take a holistic approach to each strategy and develop an action plan, formulate milestones, and target completion dates for the recommendations. The Steering Committee vetted these recommendations, fully supporting each identified responsible party and corresponding partner(s).

The WPAFB Partnership Committee can guide the jurisdictions, organizations, agencies, and WPAFB in fulfilling the CUP strategies. The Committee should develop a regular meeting schedule, invite additional stakeholders as necessary, and establish an execution timeline to achieve each recommendation. The strategies promote compatible growth around WPAFB and are not all-inclusive. The Partnership Committee can provide a forum where partners prevent additional encroachment or incompatible growth that may arise after publication by providing an open forum to discuss issues beyond the Implementation Plan.

COM-5

## Increase public awareness of the WPAFB Airport Zoning Regulations.

Enhance public awareness of the WPAFB Airport Zoning Regulations for transparency, thereby promoting compatible land use and economic development, protecting property values, and strengthening community trust.

Zoning regulations were established in 1975 when Clark, Greene, Miami, and Montgomery Counties created the WPAFB Airport Zoning Regulations comprising 11 zones. These regulations were updated in 1997. The revision was necessary because significant changes in aircraft activity occurred during the intervening period. It was also motivated by a desire on the part of both WPAFB and the Joint Airport Zoning Board to ensure continued cooperation between the base and neighboring jurisdictions in promoting compatible land use development.

During a review of the existing regulations, all the Counties adopted the zoning and height regulations outlined in the 1997 WPAFB Airport Zoning Regulations. Of the jurisdictions within the six zones, only Bath Township has formally adopted the regulations within its land development code. The City of Fairborn has adopted the height restrictions and requires consultation with the WPAFB Joint Airport Zoning Board to maintain general conformity with regulations governing the aircraft approach and airspace areas.

Because the zoning regulations are adopted at the county level, there is potential for incompatible development as the public or local planning staff may not be fully aware of the existing regulations. Therefore, growth may occur without a clear understanding of the current guidelines. The WPAFB zoning districts can be included in all public GIS websites to allow developers and residents to understand the locations pertaining to regulations visually. Having digital and PDF maps of the existing regulations on accessible platforms allows jurisdictions within the area administered by the Zoning Board to inform potential development proposals upfront and before the project/proposal is submitted. This reduces the duration of the planning staff review process, provides greater awareness, and streamlines the approval process for future development.

COM-6

## Amend the WPAFB Joint Airport Zoning Board for inclusivity.

The Joint Airport Zoning Board was established to enact the 1997 Airport Zoning Regulations and has oversight and participation from counties surrounding WPAFB, but it has limited awareness among townships and cities. This can create development challenges for local governments when they provide development guidance.

The four counties that manage the implementation of the zoning regulations defer to the local jurisdiction's planning and review processes — except the City of Dayton, as Montgomery County conducts its own review for compliance with regulations.

The Airport Zoning Board convenes infrequently, typically meeting once a year. Its role includes adopting noise contours and regulations, such as sound mitigation and land use control, and amending them when necessary in collaboration with WPAFB. In the daily application of these regulations within the four-county area, each building regulations department reviews plans for compliance with the WPAFB Zoning Regulations for properties within the six zones. The Board also handles variance requests related to height and noise contour regulations, with each of the four counties having a participating member on the Board.

The noise level reduction requirements are effective across all member counties and uniformly apply to new construction in municipal and unincorporated township lands within the zoning overlay boundaries. Height issues are rare outside the six planning districts. As a result, the Board seldom encounters height or light intrusion issues within the HAFZ. Most reviews primarily focus on residential development within the zones, with plans assessed to ensure correct noise reduction levels before approval.

In 2022, the Wright-Patterson AFB Regional Council of Governments was established. The members of the WPRCOG are not participants on the Board. Amending the Board to include planning directors or senior staff would establish a unified approach to development around the base. Inclusion would also ensure that each planning division fully appraises the existing WPAFB Zoning Regulations. The inclusion of WPAFB in an advisory role, along with the establishment of regular meetings to discuss and document the number of development proposals within the regulated zones will foster an understanding of each proposal and promote compatible growth within the controlled areas.

As discussed in COM-2, "No formalized development review process exists," each jurisdiction would benefit by developing a coordination process that establishes a timeframe for reviewing and providing an assessment of development proposals that may impact operations at WPAFB. This will allow the expanded WPAFB Joint Zoning Board to discuss development trends, record the number of developments approved and proposed, discuss best practices in the region, and maintain uniform guidance for regional developers.

## Cultural Resources

Cultural resources are objects, places, and practices that are especially representative of, and/or meaningful to, a specific group of people, their worldview, belief system, or way of life. Cultural resources include pre-contact period and historic-period artifacts, archaeological sites, buildings, structures, districts, and landscapes, as well as historic-period records and photographs. "Historic properties" are cultural resources that are listed or eligible to be listed in the National Register of Historic Places and are protected under the National Historic Preservation Act (NHPA) and other federal and state laws.

CR-1

### Enhance public awareness of Air Force-related cultural resources.

Enhancing public awareness of Air Force-related cultural resources, such as the Wright Brothers Memorial and the National Museum of the Air Force is vital to preserving their historical legacy, fostering patriotism and respect, educating future generations, and strengthening community ties to the nation's military heritage.

Aircraft operations began in the region in 1904, with the Wright brothers flying across Huffman Prairie Flying Field. Over 100 years of storied history exist concerning flight at WPAFB. Today, the birthplace of flight, Huffman Prairie Flying Field, is a historic state landmark and part of the Dayton Aviation Heritage National Historic Park.

While many know where the Wright brothers took off, fewer are aware of the technological innovations and successes in the region's history. WPAFB was a manufacturing hub and innovation center for WWI and WWII, building planes and aircraft parts that directly led to air dominance during these wars. It has maintained its position as a center of innovation since WWII and continues to contribute to advancements in aviation.

That history is documented inside the many hangars at the National Museum of the Air Force, where over 350 aircraft, missiles, and other historical and cultural artifacts are located, making it the world's largest military aviation museum. The public has a general understanding of the role the museum plays in preserving this part of aviation history but expanding educational partnerships and STEM-type activities at WPAFB, along with outdoor activities, artifact displays, and retail and dining options, can help the greater WPAFB area become a bigger attraction for residents and tourists alike. Promotion of such offerings through flyers, billboards, social media, and information kiosks could generate additional tourist traffic in the region.

# Resource Factor Assessments

Resource factors account for a wide variety of shared physical or environmental resources that equitably affect military installations and defense communities, such as air quality, or that present competing requirements, such as access to clean water or competing land or development interests. Resource factor assessments are fundamental for addressing base and community resiliency and developing collaborative implementation strategies, such as shared infrastructure projects or joint response preparation and planning. Resource factors include conservation, preservation of cultural heritage, environmental protection, and access to open spaces.

Three compatibility factors in the resource factor category were found to have issues:

- Resiliency
- Biological Resources
- Land/Airspace Competition
- Water Quality/Quantity

## Resiliency

RES-1

**Implement best practices to adapt to the effects of climate change.**

The ability of a military base to withstand or adapt to persistent impacts associated with climate change, including severe weather, drought, flooding, and wildland fires, is resiliency. These events can present planning and operational challenges for the military as environments change and resources are depleted, both on installations and in surrounding communities. Resiliency is installation-specific, dependent on enhanced local capacities and redundancies — military and civilian — to ensure the functionality of critical systems and infrastructure and to sustain mission requirements during disasters and their prolonged effects.

Climate change presents a significant challenge that impacts various aspects of infrastructure, resources, and ecosystems, affecting both Wright-Patterson AFB and the surrounding community. The finding that emphasizes implementing best practices to adapt to the effects of climate change underscores the critical need for proactive measures to enhance resiliency in the face of changing environmental conditions.

**Understanding Climate Change Impacts:** The first step in implementing climate change adaptation best practices is to thoroughly understand the specific impacts of climate change on the region. This includes assessing vulnerabilities related to extreme weather events, temperature fluctuations, and changes in precipitation patterns that could affect water resources, energy infrastructure, transportation networks, and natural habitats.

**Integration of Resiliency Strategies:** Once the impacts of climate change are identified, integrating resiliency strategies becomes imperative. This involves developing and implementing a comprehensive set of measures that enhance the ability of both Wright-Patterson AFB and the surrounding community to withstand, recover from, and adapt to the effects of climate change. These strategies may include:

- Infrastructure Resiliency: Upgrading infrastructure to withstand extreme weather events, improving drainage systems, enhancing building design for energy efficiency and climate resiliency, and incorporating green infrastructure solutions.
- Water Resource Management: Implementing water conservation measures, enhancing water storage and distribution systems, developing alternative water sources, and promoting sustainable water use practices.
- Energy Resiliency: Diversifying energy sources, investing in renewable energy technologies, improving energy efficiency in buildings and operations, and developing resilient energy grids and microgrids.
- Transportation Planning: Integrating climate-resilient transportation planning, promoting alternative transportation modes, enhancing road and transit infrastructure to withstand climate impacts, and developing emergency evacuation plans.
- Natural Resource Conservation: Protecting and restoring natural habitats, promoting sustainable land use practices, conserving biodiversity, and managing ecosystems to enhance resiliency to climate change impacts.
- Emergency Management and Preparedness: Enhancing emergency response capabilities, developing climate-informed disaster preparedness plans, improving early warning systems, and coordinating response efforts between stakeholders.

## Biological Resources

Biological resources include species listed by federal and state agencies as threatened or endangered, along with those species' habitats. Biological resources may also include "species of concern," which refers to organisms that need concentrated conservation efforts and areas such as wetlands and migratory corridors critical to an ecosystem's overall health and productivity. The presence of sensitive biological resources in an area where increased use or development is planned may warrant special considerations and protective measures and should be identified as a concern early in the planning process.

BIO-1

## There is a need to continue to preserve and protect natural ecosystems.

Regional growth can increase pressure on natural habitats near WPAFB. These natural areas serve as effective encroachment buffers surrounding WPAFB, and preservation should continue to be a priority to support land use compatibility and resiliency.

WPAFB is built on land donated by the Miami Conservancy District. Parts of the base's land reside within existing floodplains and are limited to development. Therefore, areas within the base are protected habitats.
The Natural Resources Program at the base has observed the federally endangered Indiana bat and the Northern long-eared bat. WPAFB strives to increase, maintain, and promote ecosystems where they can thrive. In 2017, the base became the first military installation designated as a Bee City USA community. The base also manages one of the most extensive tallgrass prairies in the region, State Landmark Huffman Prairie Flying Field, which is a stop along the monarch butterfly migratory path. Managing these threatened and endangered species and their habitats on the installation is a major component of the Natural Resources Management Program.


Natural ecosystems are also enjoyed by residents and preserved outside the base at Huffman MetroPark, Eastwood MetroPark, MetroParks Mountain Biking Area, Fairfield Park, Hebble Creek Reserve, and Cemex Reserve, in addition to various other locations. These undeveloped open spaces support the natural environment's ability to manage floodwaters, support biodiversity, and reduce the potential for incompatible land use around WPAFB.

North of WPAFB is the interchange of I-70 and I-675. The area consists of a significant amount of open space along the Mad River, including agriculture and vacant land use outside and within portions of the safety zones. The federal government provides funding through the DoD and other programs to protect land and limit encroachment on military bases nationwide. One program is the Sentinel Landscapes Partnership, which works with willing landowners and land managers to advance sustainable land use practices around military installations and ranges. Founded in 2013, the Partnership's mission is to strengthen military readiness, conserve natural resources, bolster agricultural and forestry economies, increase public access to outdoor recreation, and enhance resiliency to climate change.

The land north of WPAFB, due to its location along the Mad River and abundant agricultural uses, is a good candidate for land preservation. Preservation can occur through perpetual easements or the donation of development rights — to ensure the land remains undeveloped. The Land Trust Alliance is a resource that provides information on conservation and identifies potential partners to protect the natural ecosystem.

Frequent questions asked by landowners include the following:

- What is an easement?
  - It is a one-time purchase of development rights.
  - It provides a permanent reduction in taxes.
  - Conservation easements are legal agreements between a landowner and a land trust.
    - The easement will permanently protect the land's conservation values by limiting the types of land use.
- Does the land need to become an untouched natural environment?
  - Owners are encouraged to continue to use the land to farm, fish, hunt, and build structures or homes based on the rights reserved in the easement.
  - Perpetual easements restrict certain land uses and purchase the development rights for various agreed-upon development types.
- Can the protected land be sold? Who is the owner?
  - The land belongs to the owner, not the land trust.
  - Each landowner may sell or pass the land on to heirs.
  - The conservation easement remains in effect, and the terms apply to all future landowners.
- How does a land trust protect the land?
  - When entering into a voluntary conservation agreement with a land trust, the agreed-upon terms include the forfeiture of certain development rights.
    - This may include forfeiting the right to build tall structures or subdivide the land while retaining the full right to grow crops, fish, and hunt.
    - The agreement runs with the land and applies to future owners.
  - The land trust ensures the agreement's terms are followed.

## Land/Airspace Competition

The military manages and uses land and airspace for testing, training, and operational missions. These shared resources must be available and of sufficient size, cohesiveness, and quality to accommodate effective training and testing. They can also impact future development and operations for all users.

**Civilian, commercial, and military land/air operations can compete for limited available land and airspace – especially when the areas are desirable for military training, recreational use, and residential use and have abundant resources.**

LAS-1

### The growth of aviation at Dayton International Airport creates airspace competition.

A planned electric vertical takeoff and landing aircraft (air taxi) production facility at Dayton International Airport will increase air traffic in the region.

The company, Joby, received U.S. Air Force airworthiness certification in 2021. It plans to build a facility that delivers up to 500 aircraft annually at Dayton International Airport, supporting up to 2,000 jobs. The 140-acre site it has selected has the potential to support significant further growth over time, providing enough land to build up to 2 million square feet of manufacturing space. Construction on the manufacturing facility will begin in 2024, and production will begin in 2025.

The production aircraft is designed to transport a pilot and four passengers. The aircraft can travel up to 100 miles at speeds below 200 mph, transporting people quickly, quietly, and with zero emissions. The company plans to operate these aircraft as part of aerial ridesharing networks in cities and communities worldwide starting in 2025.

Joby's aircraft, which has already begun flying at Edwards AFB in California, is the first electric air taxi stationed on a U.S. military base and is believed to be the first delivery of an electric air taxi in the U.S. Joby's partnership with the DoD dates back to its 2016 engagement with the Defense Innovation Unit, which granted the company early funding and access to test ranges and expertise that have aided its aircraft development program. Operations at Edwards AFB with Joby aircraft demonstrated a range of logistics missions, including cargo and passenger transportation operated by both Joby and U.S. Air Force personnel. In partnership with the U.S. Air Force, NASA will also use the aircraft for research to determine how they could fit into the national airspace, benefiting the entire air taxi industry.

The State of Ohio, JobsOhio, and local political subdivisions have established incentives and benefits of up to $325 million to support the development of the facility, while Joby plans to invest up to $500 million as it scales up operations at the site. Joby is also pursuing U.S. Department of Energy financing under the Title XVII Loan Guarantee Program, which provides access to low-interest loans for clean energy projects and would support the scaling of the facility.

While the company's headquarters, research and development, and pilot production facility will remain in California, aircraft may be flown out of the facility for test proficiency and/or to their destination. The company has communicated well with the USAF and local, state, and federal officials. With the presence of Dayton International Airport within the imaginary surfaces of WPAFB, there is concern that the demand for existing and future air operations at the airport may create airspace congestion and competition. Completing a memorandum of agreement to understand and develop a course of action to mitigate potential flight conflicts between WPAFB, Dayton International Airport and Joby International are advised.

LAS-2

**The future proliferation of commercial drones can create airspace conflicts and safety concerns.**

As drones transition from emerging technology to everyday commercial use, they can pose operational threats from an intentional or unintentional overflight of WPAFB to surveil activities and create potential flight hazards and midair collision risks for military aircraft.

Drones, or UASs, have increased across the U.S. recently due to their reduced cost, size, and availability. As of October 2023, over 863,728 UASs have been registered with the FAA. Approximately 500,000 registered drones are for recreational use, while 350,000 are for commercial use.

Both recreational and commercial drones create security concerns for military personnel and equipment, as many drones have built-in cameras. Drone operations near military installations create security risks for the military if the drone is used to capture video or photographs of federal property, operations, activities, and/or facilities. In addition to these security concerns, risk is associated with improper use of drones near airports, creating potential midair collisions and posing a hazard to aircraft safety. Whether these actions are intentional or unintentional, UAS activity is a concern to WPAFB.

The FAA regulates UASs in active airspace and requires that UASs meet certain size and weight requirements to be registered for authorized use. Additionally, the FAA creates no-fly zones, or restricted flight areas, for UASs, such as around airports or over military installations (Figure 6-1 for WPAFB). The FAA also monitors and tracks UASs flying in unauthorized areas. It receives more than 100 reports of unauthorized drone flights a month nationwide.

To provide information and education regarding these restricted areas, the FAA has developed the B4UFly mobile app. The free app provides information on FAA restrictions and interactive maps to assist drone operators with learning where they can and cannot fly their drones. Through this app, drone users cannot request or obtain airspace authorization to fly in controlled airspace. Authorization to fly in controlled airspace must be approved by the FAA in advance. UAS pilots can submit requests to fly in restricted airspace by visiting https://faadronezone-access.faa.gov/. The State of Ohio requires users to follow federal drone laws, and state and local jurisdictions have no additional regulations on the use of drones.

In addition to federal regulations, technology applications, such as geofencing or limiting the range a UAS can fly, can keep UASs out of areas of concern and thereby limit hazards. Geofencing uses GPS or radio frequency identification to create a geographic boundary that location-aware devices avoid. However, few manufacturers have incorporated this technology into their UASs, as the law does not require it. Increasing awareness includes placing signage in state and local parks within imaginary surfaces or HAFZ. Prioritizing areas within the no-fly zone provides additional situational awareness to recreational users. Drone restrictions are shown in Figure 6-1 below.

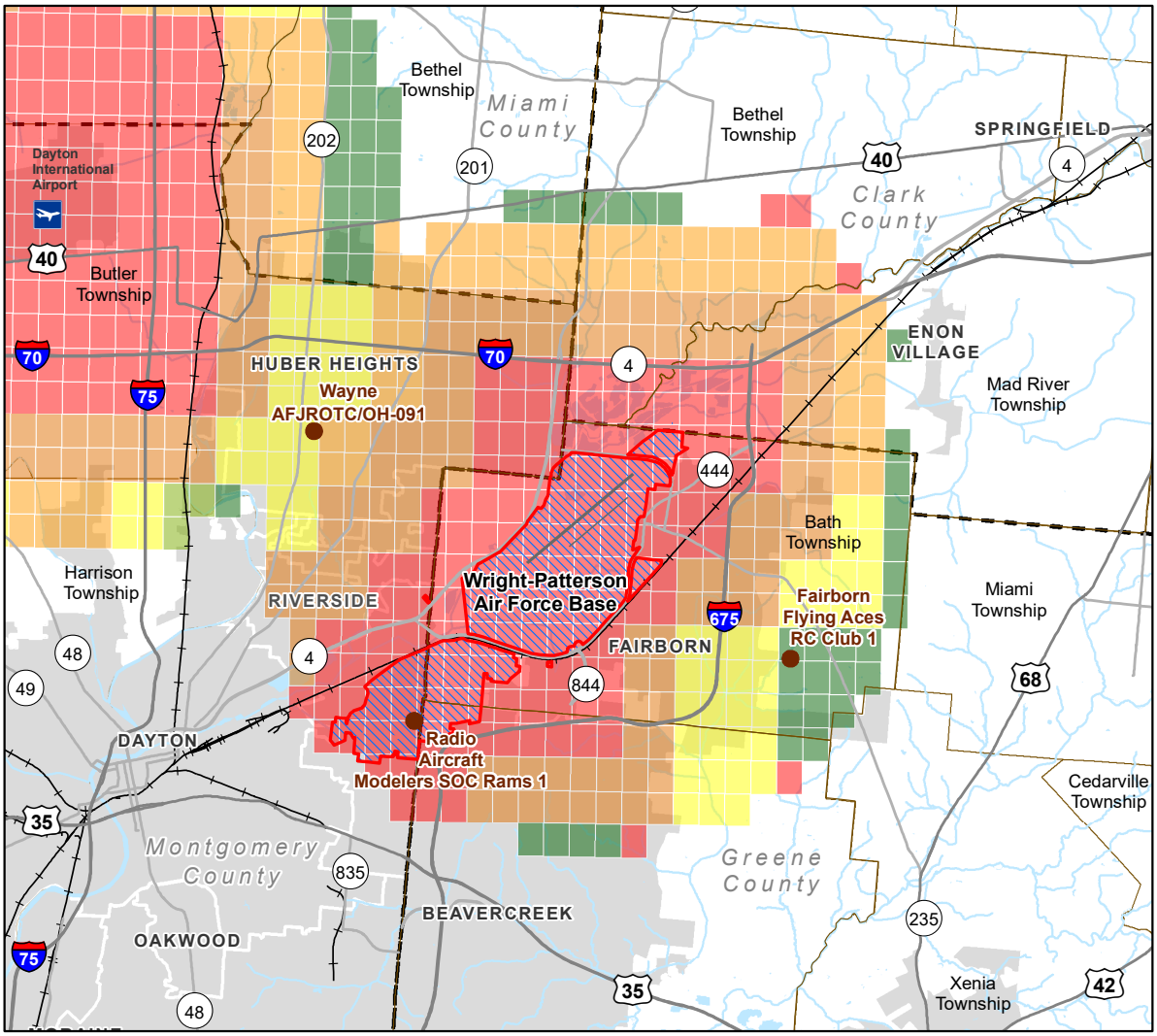



**Figure 6-1 Drone Restrictions**

## Water Quality/Quantity

Water quality/quantity (WQQ) concerns include ensuring that adequate, good-quality water supplies are available in the military and surrounding communities to support current and future agriculture, residential, commercial, and industrial growth.

WQQ-1

**The antiquated condition of Huffman Dam creates a potential impact to flood control and facility protection.**

Huffman Dam is one of five flood control dams built in 1921 as part of the Miami Conservancy District's (MCD) response to the catastrophic Great Dayton Flood of 1913 to protect downstream communities from flooding. Due to its age, the dam needs improvement to continue serving its flood control purpose.

The Miami River Valley comprises three converging river systems: the Stillwater, Mad, and Miami Rivers. In 1913, A devastating flood in the Miami Valley resulted in 400 fatalities and $100 million in damages. Five dams were constructed to prevent future destruction, but this infrastructure is over a century old.

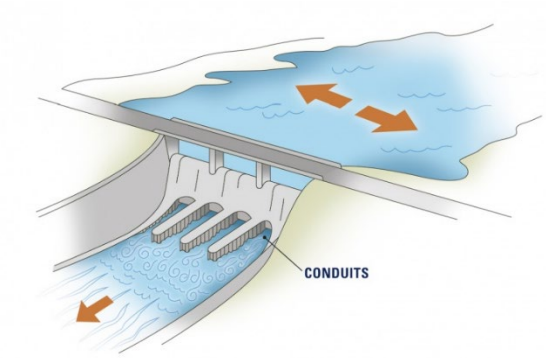
The flood of 1913 had a profound impact on the way the region planned and executed strategies to protect local communities from future floods. One key outcome was the establishment of the MCD in 1915. The MCD built five earthen dams, with Huffman Dam being the most important to the operational integrity of WPAFB. These dams do not create permanent reservoirs; they temporarily store floodwater from heavy or prolonged rains. It can take weeks to drain the accumulated floodwater fully during periods of extremely high water.

These areas, including the 9,180-acre retarding basin for Huffman Dam, have specific development restrictions and requirements to prevent flood-related issues.


*1959 aerial of flooding at WPAFB. Source: Miami Conservancy District*

In 1922, the district sold over 3,700 acres of land, making up Area A of WPAFB. The MCD and WPAFB coordinate on the proposed development on land below 835 feet above mean sea level. Flooding in 1959 saw the water level at Huffman Dam reach 809 feet above mean sea level, resulting in flooding that inundated the runway and affected half the base.

Huffman Dam was constructed to create a retention basin in the valley above it. It spans a 3,340-foot section of the Mad River Valley and stands 65 feet high. Part of the structure is made of Portland cement concrete and includes a spillway positioned directly above three conduits. The spillway crest is situated at 835 feet above mean sea level. In the event of a maximum high-water event, it would likely take weeks to completely drain the retarding basin as the dry dam can store 54.43 billion gallons of floodwater.




*An example of how dry dams operate. Source: The Miami Conservancy District*

Most of the land owned by WPAFB was initially part of the MCD. MCD-designated floodplains and any development within these areas required coordination between the base and the district before construction. These restrictions have ensured that development, if possible, is built outside areas susceptible to flooding. Originally, the MCD requested written permission for any development below 830 feet above mean sea level; today, some facilities exist within the floodplains.

*Huffman Dam conduits and spillway. Source: Miami Conservancy*

Changing climate patterns and aging dam infrastructure significantly threaten WPAFB's operational capabilities, potentially damaging the base and surrounding communities.

Concerns about the age of the dams managed by MCD are being raised. Partnerships and funding opportunities are being explored to enhance, repair, and ensure these dams can continue to serve their purpose for 100 more years.

Additionally, changing environmental factors, including increased rainfall frequency and intensity, pose a risk of flooding within the retarding basin, potentially causing damage to facilities and affecting operational capabilities. Assessing and addressing these concerns is essential for effective flood control and facility protection.

WQQ-2

## Address public concern over groundwater chemicals from WPAFB.

Public concerns about harmful chemicals potentially leaching from WPAFB into the surrounding groundwater exist. Some of these chemicals, possibly including PFAS, often used in firefighting foams, have been identified as being of particular concern due to their potential health impacts and environmental persistence.

PFAS are a group of man-made chemicals used in various residential, commercial, and industrial applications due to their unique properties that make products resistant to oil, grease, water, soil, and stains. The commercial use of PFAS began in the 1950s, and by the 1970s, the DoD started utilizing PFAS, specifically in fire extinguishing foam. Subsequently, fire departments and airports also adopted the use of these chemicals. In Area A, near the current fire training area, the Air Force is installing a PFAS treatment system to remove PFAS from groundwater, which is expected to be operational in the fall of 2024. The U.S. EPA published final drinking water regulations in April 2024, establishing maximum contaminant levels for PFAS compounds in public drinking water systems.

In 1988, the City of Dayton received a designation for its aquifer as a "sole source aquifer" under the Safe Drinking Water Act. The aquifer is considered the sole source of drinking water for over 2.5 million residents and businesses in Southwestern Ohio.

PFAS can accumulate and persist in the human body for extended periods. Evidence from laboratory animal and human epidemiology studies indicates that exposure to these compounds can lead to various health effects, including cancer, reproductive issues, developmental concerns (e.g., low birth weight), cardiovascular problems, and liver and kidney complications, as well as immunological effects.

### How does the EPA Approach PFAS?

The EPA's approach is shaped by the unique challenges of addressing PFAS contamination. The EPA cannot solve the problem of PFAS compounds by tackling one route of exposure or one use at a time. Rather, it needs to take a life-cycle approach to PFAS to make meaningful progress.

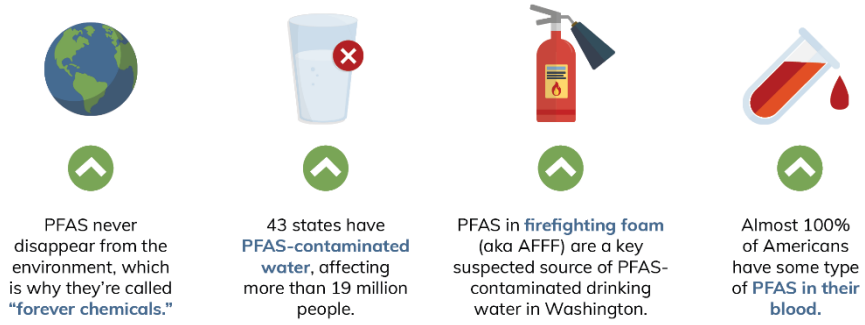
PFAS pollution is not a legacy issue — these chemicals remain in use in U.S. commerce. As such, the EPA cannot focus solely on cleaning up the downstream impacts of PFAS pollution. The Agency needs to also look upstream to prevent new PFAS contamination from entering air, land, and water and exposing communities.

As the Agency takes tangible actions both upstream and downstream, the EPA will continue to pursue a rigorous scientific agenda to better characterize toxicities, understand exposure pathways, and identify new methods to avert and remediate PFAS pollution.

As the EPA learns more about the family of PFAS chemicals, the Agency can do more to protect public health and the environment. In all this work, the EPA will seek to hold polluters accountable for the contamination they cause and ensure disadvantaged communities equitably benefit from solutions.

Acknowledging the widespread presence of these PFAS compounds in 2016, the EPA established lifetime health advisory levels for PFAS in drinking water at 70 parts per trillion. Today, the EPA is reviewing the current guidance. It is possible that in the future, manufacturers may be wholly or partially liable for cleanup and mitigation efforts in the future.

In June 2023, the EPA postponed the expected publication of a final rule designating PFAS, along with its salts and structural isomers, as a hazardous substance under the CERCLA also known as the Superfund. This proposed rule aims to enhance transparency regarding releasing these harmful chemicals and hold responsible parties accountable for contamination cleanup. It would mandate immediate reporting of releases of PFAS meeting or exceeding the reportable quantity to various authorities, including the National Response Center, state or tribal emergency response commissions, and local or tribal emergency planning committees. Notably, entities would not be required to report past releases of PFAS since it was not previously classified as a hazardous substance.




*Department of Ecology, Washington State, accessed Nov. 28, 2023*

These PFAS compounds are used in manufacturing a wide array of products. They are incredibly resistant to breakdown, making them long-lasting pollutants in water, soil, and the human body. Their unique properties have led to their use in various products, such as nonstick cookware, fast-food wrappers, and dental floss. Commercially produced PFAS compounds for human consumption and those used and stored by the DoD have migrated into groundwater and drinking water nationwide. Various public, private, and public-private partnerships actively seek solutions to remove these chemicals from drinking water.


*Various Common Sources of PFAS. Department of Ecology, Washington State, accessed Nov. 28, 2023*

A widely used firefighting foam known as Aqueous Film Forming Foam was one such product. AFFF contained PFAS. The PFAS within AFFF, commonly used in the 1970s, raised concerns about potential health risks. This potential source of contamination at WPAFB stemmed from the use of AFFF stored in tanks inside aircraft hangars and on firefighting trucks. Because these chemicals do not naturally degrade due to their strong chemical bonds, they can migrate into local drinking water wells if not adequately managed. In 2023, to address this issue, WPAFB constructed an interceptor trench system in Area B and an organic clay treatment filter on the base to treat stormwater and groundwater before releasing it into local waterways. The Ohio EPA is participating in WPAFB's water remediation, overseeing the project to ensure it meets state and federal regulations.

The Air Force began to transition to more environmentally friendly foam mixtures in 2017 to reduce or eliminate the use of these chemicals. Presently, the Air Force has implemented these additional measures to minimize unnecessary foam releases:

- Retrofitting all fire vehicles with a switch mechanism to test functionality without discharging AFFF into the environment
- Standardizing hangar systems and replacing older systems containing the old foam formulation during building renovations
- Conducting fire training exercises without AFFF to prevent soil and groundwater impacts
- Treating uncontained AFFF releases as hazardous material spills and mandating immediate cleanup

In July 2023, the Air Force transitioned from the older chemical mixture to a newer, environmentally compliant, and safer alternative. WPAFB has diligently followed the guidance provided by the Air Force and DoD to reduce, mitigate, and, where possible, eliminate exposure to these chemicals. Given the base's proximity to rivers, lakes, and drinking water reserves, it must adhere to existing and future federal requirements for cleanup and restoration efforts.

## Development Factor Assessments

Development factors impact or are impacted by economic development, growth, and existing land use. These factors include traditional compatibility factor assessments related to land use, development, the capacities of public infrastructure, and the potential impacts of future projects on military installations. They also include public health and safety concerns related to military training and operations, such as aviation safety, noise, dust, light and glare, or vibrations. Conversely, they also consider risks to the safety of military personnel, specifically pilots and aircrew, from vertical height obstructions and/or energy development.

Five compatibility factors in the resource factor category were found to have issues:

- Anti-Terrorism/Force Protection
- Land Use
- Noise
- Roadway Capacity
- Safety

## Anti-Terrorism/Force Protection

Anti-Terrorism/Force Protection (AT/FP) relates to the safety and security of personnel, facilities, and information on a military installation. DoD AT/FP standards require all installation components, such as access gates, to adhere to design/planning criteria and minimum construction standards that mitigate vulnerabilities and threats to an installation and its occupants. Important aspects of these criteria and standards include access control and clearance zones around installation perimeters to maintain sight lines and manage access to the installation. Due to current domestic and global conditions, military installations have implemented more restrictive standards to address AT/FP concerns. These measures may vary based on daily activities and include increased security checks and/or the creation of physical barriers at entry points (e.g., gates, spike barriers, tire shredders).

AT-1

### Address potential impacts of drones to WPAFB.

The advancement and accessibility of drones, or UAS technology, present a potential safety and security concern for WPAFB.

Drones are easily accessible throughout the nation. Today, they can be used for recreation and are commonly used to video-record aerial imagery of sports, nature, facilities, roadways, and commercial and recreational activities. Small drones can also drop munitions and surveil conflict areas worldwide.

Drones disrupt operations at WPAFB, which is concerning. WPAFB provides various research and technological advancements in medical, aviation, and other services. It also hosts the Air Force Materiel Command, home to the Air Force Institute of Technology. It is the command center for numerous agencies, such as the Life Cycle Management Center, Research Laboratory, Air and Space Intelligence Center, and many others.

The implications of UASs can be significant and raise security concerns. Among them are the following:

- Security Risks
  - Surveillance Threats: Drones equipped with cameras can be used for unauthorized surveillance, gathering sensitive information about the facility's layout, infrastructure, and activities.
  - Potential for Espionage: Adversaries may deploy drones to conduct espionage, collecting data that could be used for nefarious purposes such as cyberattacks or physical breaches.
- Breach of Physical Security
  - Delivery of Harmful Payloads: Drones can transport and deliver harmful payloads, including explosives or chemical substances, posing a direct physical threat to the facility and its personnel.

  - Intrusion and Reconnaissance: Drones might be employed to conduct reconnaissance missions to identify vulnerabilities, potential entry points, and security measures in place.
- Communication Interception
  - Signal Interception: Drones equipped with the right technology can intercept communication signals, potentially compromising classified information or sensitive communications within the facility.
- Counter-Surveillance Challenges
  - Detection Difficulties: Detecting small, low-flying drones can be challenging, particularly if designed to operate quietly or at a distance. This makes it harder for security personnel to identify and neutralize potential threats.
- Regulatory Compliance
  - Regulatory Challenges: Adherence to regulations regarding the operation of drones near sensitive facilities is crucial. However, enforcing these regulations can be challenging, especially if the operator intentionally tries to avoid detection.
- Response and Mitigation
  - Anti-Drone Systems: Implementing counter-drone technologies and systems can help detect and mitigate potential threats. This includes using signal jammers, radio frequency detectors, and, in extreme cases, methods to disable and/or take control of the drone physically.
- Policy and Legislation
  - Legal Frameworks: Establishing and enforcing clear policies and legislation regarding the operation of drones near sensitive facilities is essential. This helps deter unauthorized drone activity and provides a legal basis for responding to such incidents.
- Technological Advancements
  - Emerging Threats: As drone technology advances, the potential threats posed by drones may evolve. Facilities must stay up to date on technological developments and continuously adapt their security measures.

Overall, the implications of UASs around military facilities underscore the importance of comprehensive security measures, including technological solutions and robust policy frameworks. It is a complex and dynamic challenge that requires ongoing attention to emerging threats and the development of effective countermeasures.

While the area around WPAFB is known as a no-drone fly zone, establishing protocols to ensure that drone sightings around the base are reported quickly and judiciously is highly advised. Working groups and adopting national best practices may reduce drone-related incursions and damage.

## Land Use

Local jurisdictions' comprehensive plans and zoning ordinances can be the most effective tools for preventing or resolving land use compatibility issues. These tools ensure the separation of land uses that differ significantly in character or may adversely impact one another, regardless of use similarity. For instance, industrial uses are often separated from residential uses to avoid the industrial impacts of noise, odors, and lighting on residents.

Land use planning and regulation are the government's responsibility, designed to protect the public's health, safety, and welfare. Land use planning near and around military installations is similarly used to evaluate land use compatibility, as local jurisdictions consider compatibility factors such as noise when locating residential developments near commercial or industrial areas.

As the land between local municipalities is developed or the land between a local municipality and the perimeter of a military installation is developed, both entities are affected. New residents, tenants, or building owners may not fully know the implications of locating near an active military installation or training area.

The Air Force consolidated its planning functions into one Air Force Instruction 32-1015 in 2019, which includes the Air Force AICUZ Program. The land use compatibility tables for military Installations can be found in DODI 4165.57 Air Installations Compatible Use Zones. The AICUZ Instruction includes general land use guidelines for safety and noise associated with aircraft operations. The 2022 WPAFB AICUZ Study incorporated the general land use compatibility guidelines per the DODI.

The land use compatibility assessment in this CUP is based on the land use guidelines found in DODI 4165.57 AICUZ. These guidelines are provided in Table 6-1 for safety and Table 6-2 for noise and referred to in the following land use, noise, and safety factor sections as the basis for compatibility assessment where applicable.

Land uses in the table are based on the U.S. Department of Transportation publication Standard Land Use Coding Manual (SLUCM) for identifying and coding land use activities. Some land use guidelines require the user to reference additional information in the Legend and Notes section at the end of the table. While the land uses are based on the DODI, land uses that may conflict with other compatibility requirements have been identified as follows:

- BASH potential land use conflicts are identified with the icon
- Dust/smoke/steam potential land use conflicts are identified with the icon
- Glint/glare potential land use conflicts are identified with the icon
- Frequencies of potential land use conflicts are identified with the icon
- Vertical obstructions and potential land use conflicts are identified with the icon

It is important to note that DoD land use guidance comprises recommendations to facilitate compatible development. Many properties in the communities surrounding WPAFB are either developed or subject to zoning, which governs use, residential density, and nonresidential intensity of development. Given these conditions, amending zoning to

support DoD land use recommendations must be sensitive to personal property rights and values to avoid creating a taking of private property rights. A property owner can argue the "taking" or loss of beneficial use of their property and seek relief in civil court to compensate for a loss in development potential. For this reason, any changes to the zoning or use of the property must be conducted with full transparency, input, and support from affected property owners to avoid potential challenges to amendments.

The land use compatibility guidelines used to assess compatibility around military installations are below in Table 6-1 (Safety Zones) and Table 6-2 (Aircraft Noise).

**Table 6-1** Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones

| | Safety Zones | | | |
|---|---|---|---|---|
| **Land Use Name & SLUCM Category** | **Clear Zone** | **APZ I** | **APZ II** | **Density Restrictions** |
| **Residential Use Group (SLUCM Category 10)** | | | | |
| Residential uses, inclusive of all residential units, i.e., any type of single or multiple dwelling unit | N | N | Y[1,2] | Maximum density of 2 dwelling units per acre |
| Mobile home parks or courts | N | N | N | |
| Transient lodgings | N | N | N | |
| **Manufacturing Use Group (SLUCM Categories 20 & 30)** | | | | |
| Food and kindred products; textile mill products; manufacturing; stone, clay, glass, primary metal and fabricated metal products; manufacturing | N | N | Y | Maximum FAR of 0.56 in APZ II |
| Fabric products; leather and similar materials; chemicals and allied products; petroleum refining and related industries; rubber and miscellaneous plastic products; manufacturing; precision manufacturing | N | N | N | |
| Lumber and wood products; manufacturing furniture and fixtures; paper and allied products; printing, publishing and allied industries; miscellaneous manufacturing | N | Y | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |

**Table 6-1** Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

| Land Use Name & SLUCM Category | Safety Zones: Clear Zone | APZ I | APZ II | Density Restrictions |
|---|---|---|---|---|
| **Transportation, Communication, and Utilities Use Group (SLUCM Category 40)** | | | | |
| Rail, motor vehicle, aircraft, marine, etc. transportation, highway and street right-of-way, automobile parking and utilities, telephone, cellular and radio communication | N[3] | Y[4] | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |
| Solid waste disposal (landfills, incinerators, etc.) | N | N | N | |
| **Trade (SLUCM Category 50)** | | | | |
| Wholesale trade | N | Y | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |
| Retail trade — building materials | N | Y | Y | Maximum FAR of 0.20 in APZ I & 0.40 in APZ II |
| Retail trade — hardware, paint and farm equipment stores | N | Y | Y | Maximum FAR of 0.12 in APZ I & 0.24 in APZ II |
| Retail trade — including neighborhood centric shops | N | N | Y | Maximum FAR of 0.16 in APZ II |
| Mass retailing, super stores, strip malls, shopping centers,[5] discount clubs, home improvement stores, etc.; eating and drinking establishments[12] | N | N | N | |
| Retail trade — prepared and unprepared food such as groceries, bakeries, confectionaries, meat markets and fast-food restaurants with drive-through service[12] | N | N | Y | Maximum FAR of 0.24 in APZ II |

**Table 6-1** Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

| Land Use Name & SLUCM Category | Safety Zones | | | |
|---|---|---|---|---|
| | Clear Zone | APZ I | APZ II | Density Restrictions |
| **Trade (SLUCM Category 50) [continued]** | | | | |
| Retail trade — automotive, marine craft, aircraft, and accessories | N | N | Y | Maximum FAR of 0.14 in APZ I & 0.28 in APZ II |
| Retail trade — apparel and accessories, furniture, home furnishings, and equipment | N | N | Y | Maximum FAR of 0.28 in APZ II |
| Other retail trade | N | N | Y | Maximum FAR of 0.16 in APZ II |
| **Services (SLUCM Category 60)** | | | | |
| Finance, insurance, real estate, personal, professional, and miscellaneous services (office use only) | N | N | Y | Maximum FAR of 0.22 in APZ II |
| Cemeteries | N | Y[6] | Y[6] | |
| Warehousing and storage services | N | Y | Y | Maximum FAR of 1.0 in APZ I & 0.22 in APZ II |
| Repair services and contract construction | N | Y | Y | Maximum FAR of 0.11 in APZ I & 0.22 in APZ II |
| Hospitals, nursing homes and other medical facilities; educational services, childcare services, child development centers, and nurseries | N | N | N | |
| Governmental services | N | Y | Y | Maximum FAR of 0.24 in APZ II |

**Table 6-1** Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

| Land Use Name & SLUCM Category | Safety Zones: Clear Zone | APZ I | APZ II | Density Restrictions |
|---|---|---|---|---|
| **Cultural, Entertainment and Recreational (SLUCM Category 70)** | | | | |
| Nature exhibits | N | Y[7] | Y[7] | |
| Cultural activities, auditoriums, concert halls, places of worship; outdoor music shells, museums, outdoor displays, amphitheaters, sports arenas, spectator sports, resorts, and group camps or other places of assembly | N | N | N | |
| Amusements — fairgrounds, miniature golf, driving ranges; amusement parks, etc. | N | N | Y[11] | 50 people per acre |
| Recreational activities (including golf courses, riding stables, water recreation), parks | N | Y[7] | Y[7] | Maximum FAR of 0.11 in APZ 1 & 0.22 in APZ II |
| Other cultural, entertainment, and recreation | N | Y[6] | Y[6] | |
| **Resource Production and Extraction (SLUCM Category 80)** | | | | |
| Agriculture and livestock farming, including grazing and feedlots | Y[8] | Y[8] | Y[8] | |
| Agriculture-related activities | N | Y | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |
| Forestry activities[9] | N | Y | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |
| Fishing activities | N[10] | Y | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |
| Mining activities | N | Y | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |

**Table 6-1** Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

| Land Use Name & SLUCM Category | Safety Zones: Clear Zone | APZ I | APZ II | Density Restrictions |
|---|---|---|---|---|
| **Resource Production and Extraction (SLUCM Category 80) [continued]** | | | | |
| Other resource production or extraction | N | Y | Y | Maximum FAR of 0.28 in APZ I & 0.56 in APZ II |
| **Other (SLUCM Category 90)** | | | | |
| Undeveloped land | Y | Y | Y | |
| Water areas | N | N | N | |

***Key to Safety Compatibility Table***

*Y (Yes) – Land use and related structures are compatible without restrictions.*

*N (No) – Land use and related structures are not compatible and should be prohibited.*

*$Y^x$ – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.*

*$N^x$ – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.*

***General notes for all uses:***

*a. The suggested maximum occupancy for commercial, service, or industrial buildings or structures in APZ I is 25 people per acre and 50 people per acre in APZ II. Outside events should normally be limited to assemblies of not more than 25 people an acre in APZ I and maximum assemblies of 50 people an acre in APZ II.*

*b. Recommended FARs are calculated using standard parking generation rates from Institute of Transportation Engineers trip and parking generation guidance for various land uses, vehicle occupancy rates, and desired density in APZ I and II. For APZ I, the formula is FAR = 25 people per acre / (average vehicle occupancy x average parking rate x (43560/1000)). The formula for APZ II is FAR = 50 / (average vehicle occupancy x average parking rate x (43560/1000)).*

*c. No structures (except airfield lighting and navigational aids necessary for the safe operation of the airfield when there are no other siting options), buildings, or aboveground utility and communications lines should normally be located in Clear Zone areas on or off the air installation. For pilot and public safety, the Clear Zone is subject to the most severe restrictions.*

*d. Safety of flight should be considered when evaluating development that includes explosive potential; generates smoke, steam, ash or dust, and steam; creates electronic interference, lighting, or glare; or tall structures.*

*e. Development of renewable energy resources, including solar and geothermal facilities and wind turbines, may impact military operations through hazards to flight or electromagnetic interference. Each new development should be analyzed for compatibility on a case-by-case basis that considers both the proposal and the potentially affected mission.*

*f. Water features and other activities that may present bird/wildlife aircraft strike hazards or activities that produce dust or light emissions that could affect pilot vision are generally not compatible and should be evaluated on a case-by-case basis.*

*g. Evaluation of potential land management actions occurring on public and private lands, such as prescribed burns, should identify the hazard (i.e., visual impairment) to aircraft flight safety to de-conflict operations occurring at the base (i.e., scheduled exercises and training requirements).*

*h. This compatibility table identifies places of worship and tribal ceremonies as cultural gatherings. However, religious institutions provide a wide variety of services and in these instances refer to the applicable category.*

***Footnotes specific to certain land uses:***

*1. The suggested maximum density for detached single-family housing is two dwelling units per acre to encourage retention of farming and open space.*

*2. Where a parcel is partially located in an APZ II, clustered development is encouraged on the portion outside the APZ while maximizing open space within the APZ.*

*3. All roads within the Clear Zone are discouraged, but if required, they should not be wider than two lanes and the rights-of-way should be fenced (frangible) and not include sidewalks or bicycle trails. Nothing associated with these roads should violate obstacle clearance criteria.*

*4. Aboveground passenger terminals and aboveground power transmission or distribution lines are not recommended. Prohibited power lines include high-voltage transmission lines and distribution lines that provide power to cities or towns or regional power for unincorporated areas.*

*5. A shopping center is an integrated group of commercial establishments that is planned, developed, owned, or managed as a unit. Shopping center types include strip, neighborhood, community, regional, and super-regional facilities anchored by small businesses, a supermarket or drug store, discount retailer, department store, or several department stores, respectively. The maximum recommended FAR should be applied to the gross leasable area of the shopping center.*

*6. Land uses in the APZs should be passive open space; ancillary places of public assembly are not recommended.*

*7. Low-occupancy facilities are compatible with these uses; however, playgrounds and marinas are not recommended.*

*8. Activities that attract concentrations of birds creating a hazard to aircraft operations are not compatible.*

*9. Lumber and timber products removed due to establishment, expansion, or maintenance of Clear Zone lands owned in fee will be disposed of per applicable DoD guidance.*

*10. Controlled hunting and fishing may occur for the purpose of wildlife management.*

*11. Amusement centers, family entertainment centers, or amusement parks designed or operated at a scale that could attract or result in concentrations of people, including employees and visitors, greater than 50 people per acre at any given time are incompatible in APZ II. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.*

*12. "Eating and drinking establishments" are distinguished from retail trade or fast-food based on the predominant purpose of the restaurant to provide food and beverages to persons seated on premises. This includes cafes, tea rooms, and outdoor cafes that involve low customer turnover and greater numbers of people dining on-site. Restaurants with drive-through service that offer quick, fast-food service, often accomplished by a limited menu of already prepared items and that have typically high customer turnover and lower numbers of customers dining on-site, fall within the retail trade or fast-food category.*

**Table 6-2** Department of Defense Land Use Compatibility Guidelines for Aircraft Noise Zones

| Land Use Name and SLUCM Category | A-Weighted DNL/CNEL Levels | | | | | |
|---|---|---|---|---|---|---|
| | < 65 dB | 65 - 70 dB | 70 - 75 dB | 75 - 80 dB | 80 - 85 dB | 85+ dB |
| **Residential Use Group (SLUCM Category 10)** | | | | | | |
| Residential uses, inclusive of all residential units, i.e., any type of single or multiple dwelling unit | Y | N[1] | N[1] | N | N | N |
| Mobile home parks or courts | Y | N | N | N | N | N |
| Transient lodgings | Y | N[1] | N[1] | N[1] | N | N |
| **Manufacturing Use Group (SLUCM Categories 20 & 30)** | | | | | | |
| Manufacturing and industrial uses | Y | Y | Y[2] | Y[3] | Y[4] | N |
| Precision manufacturing | Y | Y | Y[2] | Y[3] | N | N |
| **Transportation, Communication, and Utilities Use Group (SLUCM Category 40)** | | | | | | |
| Rail, motor vehicle, aircraft, marine, and other transportation and communication systems and utilities | Y | Y | Y[2] | Y[3] | Y[4] | N |
| Highway and street right-of-way, automobile parking | Y | Y | Y | Y | Y | N |
| Telephone, cellular, and radio communication | Y | Y | Y[2] | Y[3] | N | N |
| **Trade (SLUCM Category 50)** | | | | | | |
| Wholesale trade | Y | Y | Y[2] | Y[3] | Y[4] | N |
| Building materials, hardware, and farm equipment sales | Y | Y | Y[2] | Y[3] | Y[4] | N |
| Mass retailing, super stores, strip malls, shopping centers, discount clubs, home improvement stores, etc.; eating and drinking establishments | Y | Y | Y[2] | Y[3] | N | N |

**Table 6-2** Department of Defense Land Use Compatibility Guidelines for Aircraft Noise Zones (continued)

| Land Use Name and SLUCM Category | A-Weighted DNL/CNEL Levels | | | | | |
|---|---|---|---|---|---|---|
| | < 65 dB | 65 - 70 dB | 70 - 75 dB | 75 - 80 dB | 80 - 85 dB | 85+ dB |
| **Services (SLUCM Category 60)** | | | | | | |
| Finance, insurance and real estate, personal, professional, and miscellaneous services, religious activities | Y | Y | Y[2] | Y[3] | N | N |
| Cemeteries | Y | Y | Y[2] | Y[3] | Y[4] | Y[5] |
| Warehousing/storage & repair services | Y | Y | Y[2] | Y[3] | Y[4] | N |
| Hospitals/medical, childcare & development services, educational facilities | Y | Y[2] | Y[3] | N | N | N |
| Nursing homes | Y | N[1] | N[1] | N | N | N |
| Governmental | Y | Y | Y[2] | Y[3] | N | N |
| **Cultural, Entertainment, and Recreational (SLUCM Category 70)** | | | | | | |
| Cultural activities, auditoriums & concert halls | Y | Y[2] | Y[3] | N | N | N |
| Nature exhibits | Y | Y | N | N | N | N |
| Public assembly | Y | Y | N | N | N | N |
| Outdoor music shells, amphitheaters | Y | N | N | N | N | N |
| Outdoor sports arenas, spectator sports | Y | Y[6] | Y[6] | N | N | N |
| Amusements | Y | Y | Y | N | N | N |
| Outdoor recreational activities | Y | Y | Y[2] | Y[3] | N | N |
| Resorts, camps, parks & other camping, entertainment, or recreational activities | Y | Y | Y[2] | N | N | N |

**Table 6-2** Department of Defense Land Use Compatibility Guidelines for Aircraft Noise Zones (continued)

| Land Use Name and SLUCM Category | A-Weighted DNL/CNEL Levels | | | | | |
|---|---|---|---|---|---|---|
| | < 65 dB | 65 - 70 dB | 70 - 75 dB | 75 - 80 dB | 80 - 85 dB | 85+ dB |
| **Resource Production and Extraction (SLUCM Category 80)** | | | | | | |
| Agriculture and Forestry | Y | Y[7] | Y[8] | Y[9] | Y[9] | Y[9] |
| Livestock farming, animal breeding | Y | Y[7] | Y[8] | N | N | N |
| Fishing, mining, and other resource production and extraction | Y | Y | Y | Y | Y | Y |

***Key to Noise Compatibility Table***

*Y (Yes) – Land use and related structures are compatible without restrictions.*
*N (No) – Land use and related structures are not compatible and should be prohibited.*
*$Y^x$ – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.*
*$N^x$ – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.*

***General notes for all uses:***

*a. Compatibility designations in Table 1 generally refer to the principal use of the site. If other uses with greater sensitivity to noise are proposed, a determination of compatibility should be based on that use which is most adversely affected by noise and its contribution to the successful use of the property.*
*b. Where a proposed development falls within two DNL and CNEL noise zones, the land use recommendations of the higher noise should be used. For example, if a proposed development is exposed to 70 dB DNL and CNEL, land use recommendations for the 70-75 DNL and CNEL noise zones should be applied.*
*c. When appropriate, noise level reduction (NLR) may be necessary to achieve compatibility. NLR (outdoor to indoor) is achieved through the incorporation of sound attenuation into the design and construction of a structure. Measures to achieve an indoor noise reduction do not necessarily solve noise issues outside the structure and additional evaluation may be warranted. Building location, site planning, design and use of berms and barriers can help mitigate outdoor noise exposure, particularly from aircraft ground maintenance run-ups. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.*
*d. Land uses below 65db DNL are generally compatible. However, localities, when evaluating the application of these guidelines, should consider possible annoyance tied to land uses that involve predominately outdoor activities or where quiet is a basis for the use.*
*e. Land use that involves outdoor activities in areas above 80db DNL are not recommended.*

***Footnotes specific to certain land uses:***

*1. Residential.*
*a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-70 and strongly discouraged above DNL 70. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals. These evaluations should clearly demonstrate that the community's need for additional residential property could not be met if development was prohibited in these zones and that the expense of additional noise attenuation will not undermine affordable housing goals.*
*b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB in DNL 65-70 and 30 dB in DNL 70-75 should be incorporated into building codes and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-80.*
*c. Normal permanent construction can be expected to provide an NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation, upgraded sound transmission class ratings in windows and doors, and closed windows year-round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.*

*2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.*

*3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.*

*4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.*

*5. Buildings where the public is received are not recommended.*

*6. Land use is compatible provided special sound reduction systems are installed.*

*7. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 25 dB should be incorporated into the design.*

*8. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 30 dB should be incorporated into the design.*

*9. Residences are not compatible.*

LU-1

## Assess inconsistent noise regulations in local zoning codes.

The Airport Zoning Regulations regulate noise-sensitive land uses within noise contours, but these Regulations are not mirrored in local government zoning regulations. This can create inconsistencies in information and guidance conveyed to the public and development community by local government planning staff.

When developments are submitted or developers review existing codes and regulations, there is often an assessment of the existing jurisdiction that controls land use development. County codes are often overlooked because developers may assume that the local code supersedes any county requirement.

The Airport Zoning Regulations include Chapter 4: Sound Level Reduction (SLR) Design Requirements. This chapter details permissible building standards for ceilings, doors, floors, ventilation, walls, and windows to ensure that structures are built to reduce the interior sound level in the zone where they are developed. The appointed Airport Zoning Inspector should conduct a compliance inspection before the building becomes certified for occupancy.

It has been over 25 years since the 1997 WPAFB Airport Zoning Regulations were enacted. Four participating counties adopted the regulations: Clark, Greene, Miami, and Montgomery. These regulations were adopted after the 1997 Joint Land Use Study. The WPAFB Airport Zoning Board was established to implement the regulations. Montgomery County was initially established as the Airport Zoning Inspector to ensure compliance. Over time, the approval and review inspection authority was delegated to the local jurisdiction. Dayton does not have local jurisdiction and sends development applications to Montgomery County for review and compliance inspections.

Over 25 years have passed since adopting and enforcing the noise guidelines found within the WPAFB Airport Zoning Regulations. During that time, the adoption of these regulations was not formalized in local codes; however, inspection authority was delegated to each local jurisdiction. It is possible that during the review process of a development proposal, a staff-level planner would be unaware of the existing county regulations as they are not

codified inside the local jurisdiction's codebook. Due to this, it is also possible that some structures built after 1997 are out of compliance.

Additionally, the lack of noise regulations within local zoning codes excludes the DoD's recommendation that all residential development exists outside of the 65 dB DNL or greater noise contours (this is due to the inability to mitigate noise levels outside the structure). The DoD guidance, as written in footnote 1a of Table 6-2, states:

> **"Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-70 and strongly discouraged above DNL 70. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals. These evaluations should clearly demonstrate that the community's need for additional residential property could not be met if development were prohibited in these zones and that the expense of additional noise attenuation will not undermine affordable housing goals."**

To further enhance the effectiveness of these regulations, the WPRCOG should take the lead in updating the 1997 Airport Zoning Regulations. The WPRCOG encompasses the cities within the regulated areas. These cities can adopt the existing 1997 regulations into their land use planning codes. Furthermore, the WPRCOG should consider creating a comprehensive future land use plan. This plan could include assessing existing land use across all parcels covered by the Airport Zoning Regulations. The land use plan can then be shared with each jurisdiction's regulatory authority board for adoption. This collaborative effort will guide the reviews conducted by the Development Board and Planning and Zoning Commission, ensuring that development aligns with both the military mission and the jurisdiction's needs, leading to mutually beneficial outcomes.

LU-2

### There is a lack of airfield safety zone regulations in local zoning codes.

Local zoning regulations do not regulate compatible land uses within the CZ, APZ I, and APZ II.

The Airport Zoning Regulations, when established, do not address land use inside the safety zones. The primary reason is that most of the developable land is within a floodway and has few uses. The land in the southern safety zone outside WPAFB is partially located in Huffman MetroPark and within the floodways of the Mad River.

Inside Clark County to the north of WPAFB, a significantly larger portion of the safety zones exists outside WPAFB. WPAFB has one Class A and one Class B runway. The combined safety zones for these runways extend to the intersection of I-70 and I-675. These areas include portions of the Sandhill Dog Park, undeveloped land, and various industrial companies.

There are no land use regulations in place to limit, mitigate, or prevent continued land use development in portions of Greene County and Clark County within the safety zones. Also, there is no formalized coordination process in which development proposals are reviewed by WPAFB, in an advisory role, to assess the risk to flight safety and compatibility concerns on proposed development before financial investments are placed on the proposed land use.

For example, the paving materials and concrete facilities near the airfield may create dust/steam/smoke that impedes pilot vision during takeoff and landing. Additionally, the resting pools of water on site are bird attractants that can damage the propeller-driven aircraft based at WPAFB. The business owners do not have a memorandum of agreement with WPAFB to mitigate potential flight hazards due to regular operations.

LU-3

### The 1997 WPAFB Airport Zoning Regulations do not reflect the latest DoD-compatible land use guidance for airfield safety zones.

The 1997 Airport Zoning Regulations are over 25 years old. They should be updated using digital technology to ensure they correspond with current DoD land use guidance for development within airfield safety zones and imaginary surfaces. The maximum buildable heights within the Airport Zoning Regulations do not reflect the complete boundary of current imaginary surfaces or the dynamic nature of how maximum buildable heights are calculated.

As mentioned in LU-2, there is no existing guidance for land use inside the safety zones within the 1997 regulations. It is possible that the exemption occurred due to floodways in much of the land covered by the safety zones. However, this exception leads to the potential for land use development that is incompatible with flight operations. No coordination procedure exists to review development plans before approval is given inside or near the safety zones.

In 2022, the DoD took a significant step by updating the AICUZ Instruction. This encouraged residential land use outside areas with aircraft noise levels exceeding 65 dBA or higher. Before this update, the guidance emphasized implementing sound-reduction strategies to lower indoor sound levels. However, following comprehensive assessments, the guidance was revised to better account for the impact of aircraft noise that cannot be effectively mitigated within structures. Consequently, the presence of aircraft operations may affect the outdoor enjoyment of the community due to elevated noise levels.

Notable changes between the 1975 regulations and the revised 1997 regulations include:

- The use of Mission Capacity Contours for assessing noise impacts, rather than specific year noise exposure contours, was originally introduced in the 1997 regulations, marking a change from the 1975 regulations. This approach was supported by the jurisdictions surrounding WPAFB, WPAFB itself, and the DoD Office of

Economic Adjustment. However, the practice has since been updated, and Mission Capacity Contours are no longer used in USAF requirements.

- Consolidation of 11 districts into six districts
  - District 1 – Runway Protection Zones
  - District 2 – 75-79 dB DNL Noise Zone
  - District 3 – 70-74 dB DNL Noise Zone
  - District 4 – 65-69 dB DNL Noise Zone
  - District 5 – Built-up Areas
  - District 6 – Federally Owned Public Lands
- Appendix A of the 1997 JLUS provides the correlation between the 1975 and 1997 districts and describes changes to the sound level reduction construction design requirements. The requirements for noise reduction effectiveness have been examined and updated in view of the changes in building materials available since 1975.

This change will result in a simpler system of Zoning Districts for both evaluation and administration.

The AICUZ land use compatibility guidance encourages residential land use outside the noise zones. However, if sound reduction measures were taken, residential land use could be deemed "incompatible with exemptions." This assessment has often been misunderstood to imply that if sound level reduction strategies were implemented during construction, noise would not be an issue for residents living within the sound footprint. This does not account for the sound outside the residence, which cannot be mitigated.

Today, noise is a major encroachment issue around military bases. To correct this misunderstanding, the DoD reissued the AICUZ guidance with a continued emphasis on improving land use planning by encouraging local planning agencies to require an assessment that no reasonable alternative location is available for residential property(ies).

Meanwhile, the Airport Zoning Regulations have historically promoted compatible land use around the base. There is a possibility that the regulations have been overlooked during development reviews. This is partly due to the administrative structure, where Montgomery County is the de facto airport zoning inspector, a position held by the Chief Building Inspector for Montgomery County. The Inspector participates on the WPAFB Airport Zoning Board, and local jurisdictions have the authority to manage the restrictions — except for Dayton, which sends plans to Montgomery County for review.

The 1997 Airport Zoning Regulations provide clear guidance on land use zones, including a runway protection zone, and emphasize the importance of noise level reduction strategies when planning within airport zoning districts two through four. The choice of noise reduction strategies depends on the noise zone in which the proposed land use is located.

The community should enhance its land use compatibility with aircraft operations. Below are three recommended strategies:

1. Review and Update Airport Zoning Regulations.

- Conducting a thorough review of Airport Zoning Regulations to incorporate revisions based on updated land use compatibility guidelines is crucial. This ensures that regulations are in line with current requirements.
- Assessing existing zones is equally important, as it allows for necessary adjustments to maintain alignment with evolving standards.

This step is vital to keep land use regulations up to date and compatible with the area's changing dynamics of aircraft operations. It helps prevent potential conflicts and adequately addresses safety and noise considerations.

2. Consider Adopting 2022 AICUZ Aircraft Noise Contours.
    - Given the subtle shifts in aircraft noise contours over time, it is advisable for the Airport Zoning Board to contemplate adopting the 2022 AICUZ aircraft noise contours into planning codes and land use regulations.

This measure is valuable for accurately reflecting the noise impact of aircraft operations, which can significantly affect the community. Ensuring that zoning regulations align with the latest data enhances transparency and safety.

3. Amend Zones Outside WPAFB.
    - Focusing on amending regulations for the five zones outside the base is crucial. This proactive approach helps prevent incompatible development and guarantees the long-term compatibility of land use with aircraft operations.

Amending these zones is essential to avoid potential land use conflicts and ensure that the community's growth and development aligns with the safety and operational needs of WPAFB.

Incorporating these recommendations into the community's planning and development processes will enable proactive management of land use compatibility issues, fostering a safer and more harmonious coexistence with aircraft operations. Ultimately, taking these actions contributes to an improved quality of life for residents while supporting the mission of WPAFB.

LU-4

### Review and address the application of height regulations surrounding WPAFB.

Height regulations in local zoning codes reference the FAA requirements or the Airport Zoning Regulations but lack transparency and clarity on how these requirements are administered.

The absence of height regulations around an active military airfield raises significant concerns and potential safety issues. Without established regulations or guidance to find and understand them, controlling the height of structures within the HAFZ is difficult.

The following complications may arise due to a lack of formalized processes or understanding of the height regulations impacting parcels under development review:

- Airspace Vulnerability/Unrestricted Airspace Access
  - The lack of height regulations may lead to unauthorized intrusion into restricted airspace, posing a direct threat to the safety of aircraft operating in the vicinity.
- Challenges in Emergency Response/Limited Emergency Landing Options
  - Tall structures, in the absence of regulations, reduce available emergency landing options for aircraft facing engine failure or other emergencies, increasing the potential for accidents.
- Compromised Instrument Approaches/Precision Landing Challenges
  - In the absence of regulations, tall structures could disrupt the precision approach paths critical for instrument landings, making it difficult for pilots to execute safe and accurate landings.
- Heightened Bird/Wildlife Aircraft Strike Hazard/Attracting Birds
  - Tall structures may attract birds, heightening the risk of bird strikes during takeoff and landing. This poses a serious hazard, as bird collisions can lead to engine damage and other critical issues.
- Increased Obstacle Risk/Impaired Flight Safety
  - Without height regulations, tall structures can become prominent obstacles for departing and arriving aircraft, elevating the risk of collisions.
- Navigational Disruptions/Interference with Systems
  - Tall structures may interfere with the proper functioning of navigational aids and communication systems, potentially jeopardizing the ability of pilots to receive accurate information and communicate effectively.
- Regulatory Ambiguity/Compliance Challenges
  - The absence of clear regulations may result in ambiguity regarding safety standards, leading to challenges in ensuring that structures adhere to necessary safety measures and do not compromise aviation safety.
- Urban Development Conflicts/Zoning and Planning Issues
  - The lack of height regulations may result in conflicts with established zoning regulations and urban development plans designed to maintain the safety and functionality of airfield infrastructure.
- Visibility and Marking Concerns/Inadequate Visibility
  - Without height regulations, structures may obstruct airfield lighting systems and other navigational aids, compromising their visibility to pilots and increasing the risk of operational difficulties.

Ultimately, the absence of height regulations around an active military airfield poses a serious threat to aviation safety, necessitating the establishment of clear and comprehensive regulations to address these concerns and ensure the safe operation of aircraft in the vicinity.

LU-5

## Review and address utility pole lines and tree airfield compliance issues.

Airfield compliance issues center around utility pole lines along SR-235 and trees on private property obstructing WPAFB imaginary surfaces.

The overhead utility lines at the north end of the Wright-Patterson Air Force Base runway present a significant operational hazard to flight operations. They pose a threat to aircraft taking off and landing. These lines are located near the flight path, creating a risk of collision or interference with aircraft during critical phases of flight. The height and configuration of the utility lines increase the likelihood of accidents, especially during adverse weather conditions or low visibility.

Potential risks associated with utility lines near WPAFB include:

- Collision Risk: Aircraft taking off or landing may inadvertently encounter the power lines, leading to consequences such as loss of control, structural damage, or even fatalities.

*Overhead utility lines at the north end of the Wright-Patterson AFB runway.*

- Electromagnetic Interference: The electromagnetic fields generated by the power lines can interfere with aircraft systems, including navigation and communication equipment, posing a risk to flight safety.
- Visual Distraction: Pilots may be visually distracted by the presence of the power lines, especially during critical maneuvers, increasing the risk of spatial disorientation or misjudgment.

Trees on private property near the WPAFB imaginary surfaces, such as approach and departure paths, create a hazard by encroaching into airspace reserved for safe flight operations. These obstructions can impede aircraft takeoffs and landings, affect navigational aids, and increase the risk of accidents during flight.

- Obstacle Collision Risk: Aircraft departing or approaching WPAFB may encounter trees on private property, leading to potential collisions, structural damage, or loss of control.
- Nuisance to Navigation: Trees obstructing imaginary surfaces can interfere with navigational aids, including instrument approach procedures and visual flight rules, compromising flight safety and accuracy.
- Visual Distraction: Pilots may be visually distracted by obstructions near critical flight paths, which can impact their situational awareness and decision-making capabilities.

## Noise

Sound that reaches unwanted levels is referred to as noise. The central issue with noise is its impact, or perceived impact, on people and animals (wild and domestic). Exposure to prolonged high sound levels can significantly impact activities, health, safety, and quality of life.

NOI-1

There is incompatible development within the noise contours.

Noise-sensitive land uses, such as residential, educational, and childcare facilities, places of worship and public assembly, medical facilities, and long-term care facilities subject to low-level aircraft overflight, can experience noise levels that impact quality of life.

The DoD recognizes the significant challenges posed by noise generated during military operations and the prolonged exposure to such noise in neighboring communities. Unlike visual or environmental factors, noise often extends beyond the boundaries of military installations and is more noticeable to the public. As a result, noise-related issues generate numerous complaints from the community and heavily influence decisions regarding land use planning near military installations. Noise concerns dominate funding requests through the DoD's REPI Program, which aims to safeguard land around installations and training ranges from incompatible development.

Additionally, the OLDCC has initiated the Community Noise Mitigation Program, like the FAA's Airport Improvement Program. The Community Noise Mitigation Program has targeted funding for communities affected by military aircraft noise, focusing on qualifying facilities within the fixed-wing aircraft noise contours of 65 dB on the DNL scale and higher.

Developing in high aircraft noise zones presents several challenges and concerns, primarily related to the potential negative impacts on residents, the environment, and overall quality of life. Key issues associated with development in areas characterized by high aircraft noise include the following:

1. Noise Pollution and Health Effects

Prolonged exposure to high levels of aircraft noise has been associated with various health issues, including stress, sleep disturbance, and an increased risk of cardiovascular problems. Residents in these areas may experience reduced overall well-being.

2. Quality of Life

High levels of aircraft noise can disrupt daily activities for residents, affecting their ability to concentrate, relax, and communicate effectively. This can lead to a diminished quality of life for those living inside a high-noise zone.

3. Property Values

Properties located in high aircraft noise zones may experience reduced market values due to the perceived negative impact on livability. Potential homebuyers may be less inclined to invest in areas with significant noise pollution.

4. Land Use Planning Challenges

Development in high aircraft noise zones may face zoning restrictions and land use planning challenges. Authorities may impose limitations on the structures and activities permitted in these areas.

5. Regulatory Compliance

Developers must adhere to noise regulations and standards, which may involve implementing noise mitigation measures such as soundproofing buildings. Failure to comply with these regulations can result in legal issues and delays in project approval.

6. Community Opposition

Residents and local communities may resist new developments in high aircraft noise zones due to concerns about the negative impact on their daily lives. Conversely, residents could see restrictions on residential development within the aircraft noise contours as unnecessary and seek permits to build within the noise zones. This can lead to community opposition and protests.

7. Schools and Institutions

High aircraft noise can affect educational institutions in the area, disrupting learning environments and potentially impacting students' academic performance.

8. Sound Attenuation Expenses/Noise Mitigation Costs

Developers may incur additional costs to implement noise mitigation measures, such as installing sound barriers, double-glazed windows, and other technologies designed to reduce the impact of aircraft noise on residents.

Developing high aircraft noise zones requires careful consideration of the potential impacts on residents, the local environment, and the overall livability of the area. Effective planning, community engagement, and adherence to noise regulations are essential to mitigate these issues and create sustainable, harmonious communities in such

zones. Generalized land use within the noise contours at WPAFB is shown on Figure 6-1, and incompatible land use within the noise contours is found in Figure 6-2. Additional details can be found within the 2022 WPAFB AICUZ.

WPAFB typically receives very few noise complaints related to aircraft operations. This is largely due to the base's long-standing presence in the community and the efforts of the WPAFB Airport Zoning Board, which ensures that developments incorporate sound level reduction measures inside structures to mitigate the noise generated by aircraft flying overhead. The WPAFB Public Affairs department can establish clear communication protocols. These protocols will inform the community when deviations from the standard aircraft operations schedule exist. For instance, they can be particularly useful when military aircraft are temporarily stationed at WPAFB during adverse weather events.

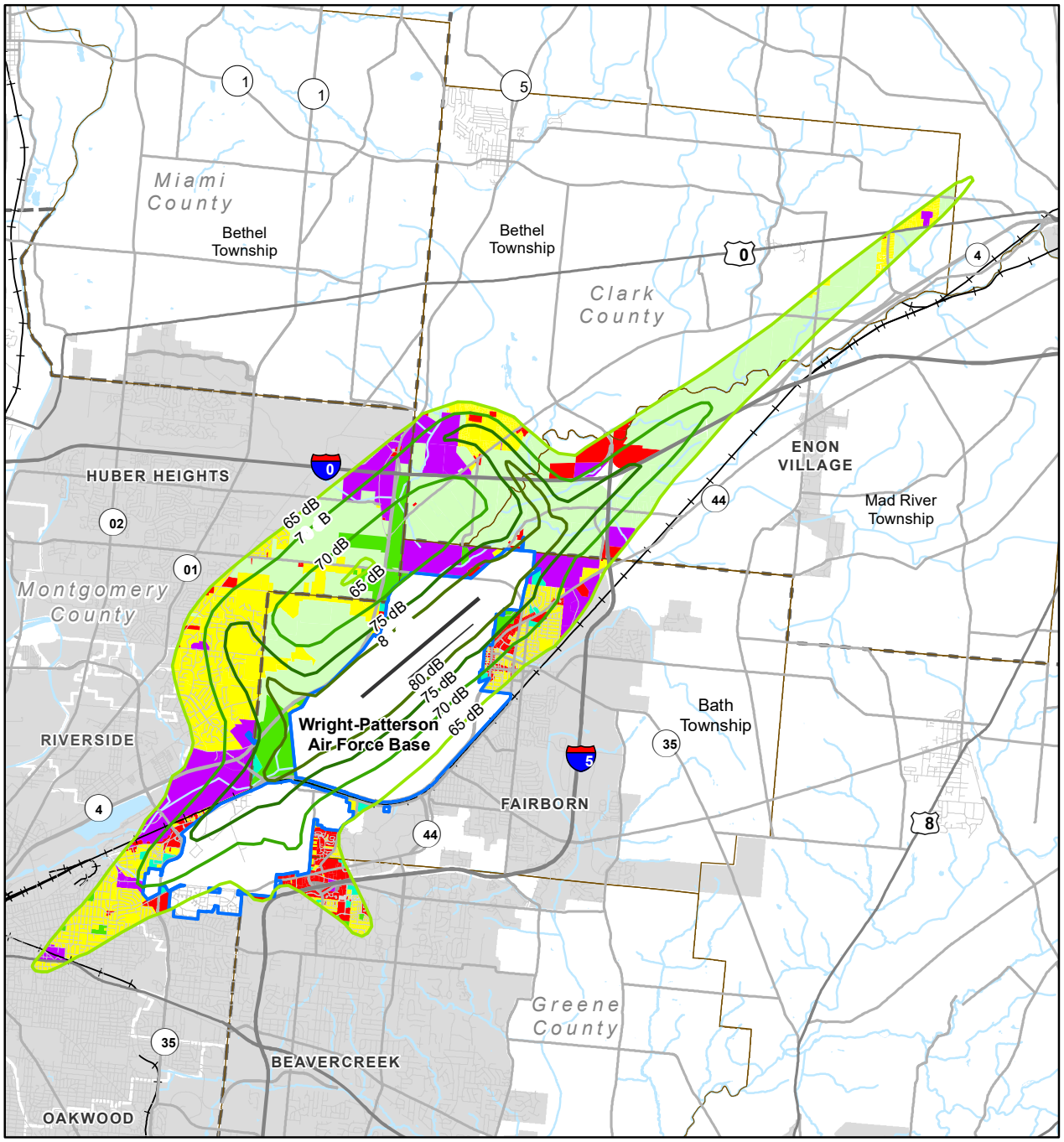



**Figure 6-2 Existing Land Use and Airfield Noise Contours**

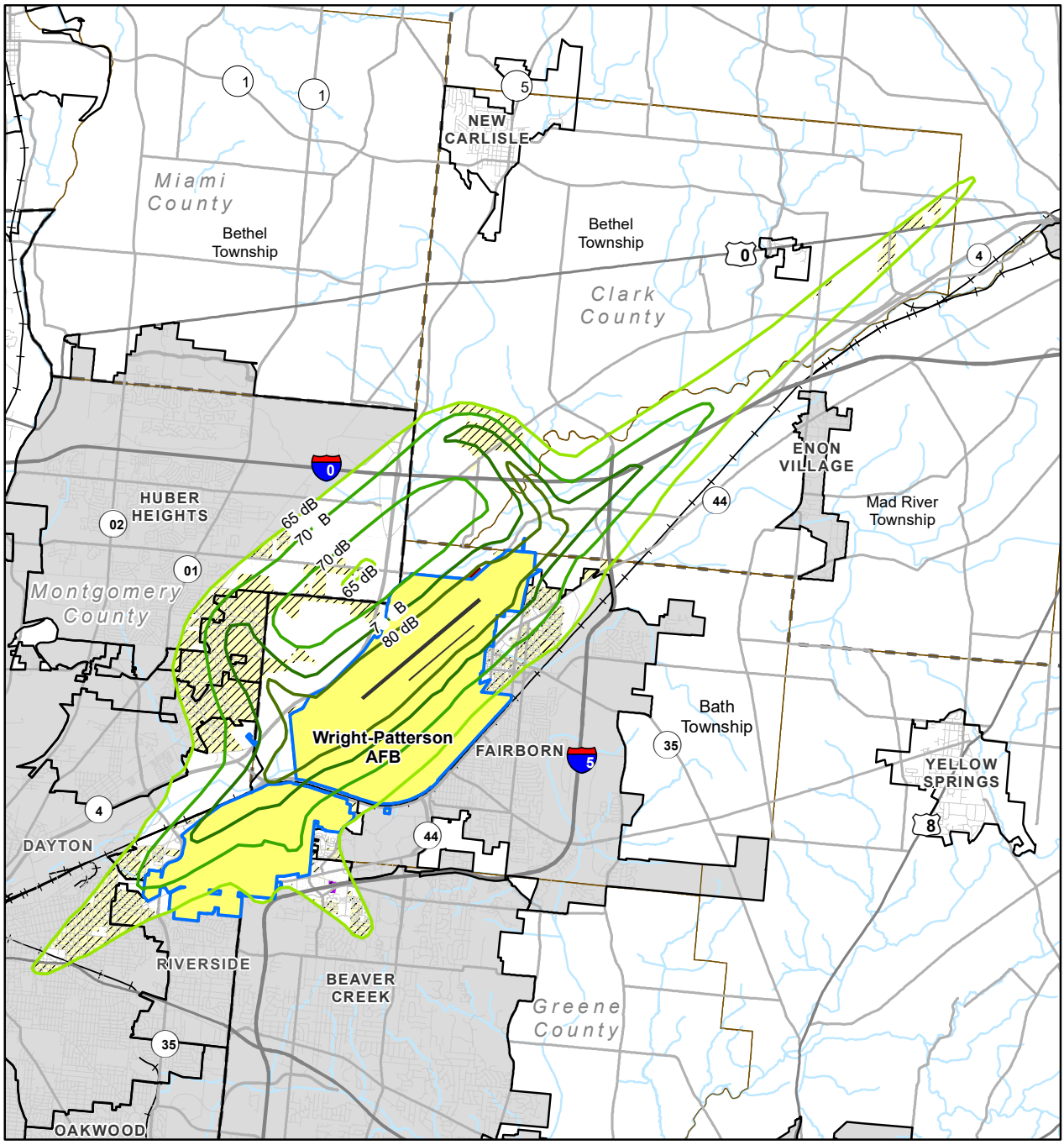
As shown on Figure 6-3 and detailed in Table 6-3, the most incompatible land use is residential. However, individual housing assessments were not conducted due to the costs involved in determining if they were built with sound attenuation standards, which have been required, at a minimum, since 1997 for the specific noise zone in which they are located. Residential units built following the DoD's land use compatibility recommendations in Table 6-2 remain incompatible due to aircraft noise. There is no way to mitigate the sound outside a structure or residence. The compatibility guidelines are designed to promote the well-being of residents and acknowledge the impact aircraft sound can have on the enjoyment of indoor and outdoor activities.

**Table 6-3** Existing Incompatible Acreage within the Aircraft Noise Zones

| Jurisdiction | Land Use | 65-70 DNL | 70-75 DNL | 75-80 DNL | 80+ DNL | Total Acres |
|---|---|---|---|---|---|---|
| Bath Township | Commercial | | | | 13.59 | 13.59 |
| | Industrial | 5.92 | | | | 5.92 |
| | Public/ Quasi-Public | | | | 1.43 | 1.43 |
| | Residential | 64.49 | 275.43 | 80.31 | 9.22 | 429.46 |
| City of Beavercreek | Commercial | 259.90 | | | | 259.90 |
| | Public/ Quasi-Public | 26.19 | | | | 26.19 |
| | Recreation/Open Space | 9.96 | | | | 9.96 |
| | Residential | 116.56 | | | | 116.56 |
| | Transportation/ Communication/ Utilities | 78.73 | | | | 78.73 |
| Bethel Township (Clark County) | Residential | 304.21 | 134.58 | 132.89 | | 571.68 |
| Dayton | Residential | 830.46 | 497.14 | 244.37 | | 1,571.96 |

**Table 6-3** Existing Incompatible Acreage within the Aircraft Noise Zones (continued)

| Jurisdiction | Land Use | 65-70 DNL | 70-75 DNL | 75-80 DNL | 80+ DNL | Total Acres |
|---|---|---|---|---|---|---|
| Fairborn | Industrial | | .59 | | | .59 |
| | Residential | 322.43 | 138.18 | 25.88 | | 486.49 |
| Huber Heights | Residential | 278.43 | 236.34 | | | 514.77 |
| Riverside | Residential | 529.87 | 306.45 | 92.32 | | 928.64 |
| Total Acres | | 2,827.15 | 1,588.71 | 575.77 | 24.24 | 5,015.87 |




Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.

**Figure 6-3 Compatibility Assessment within the Aircraft Noise Contours**

## Roadway Capacity

Roadway capacity refers to the adequacy of existing freeways, highways, arterials, and local roads in providing sufficient mobility, connectivity, and access to military installations and points of interest in surrounding communities.

As urban development expands into rural areas, roads once used primarily to provide access for agricultural uses and limited local traffic begin to function as urban arterial roadways. These once-rural roads often become the main transportation corridors for all types of traffic – from residential to commercial trucking – and can assist or impede access to military installations. As transportation systems provide more capacity, these facilities may increase traffic flow leading to congestion.

RC-1

**Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.**

The level of WPAFB traffic entering/exiting the base causes congestion, affecting the surrounding road network, including residential neighborhoods.

With over 30,000 Airmen and civilian and contractor employees, WPAFB is Ohio's largest single-site employer. Due to the large workforce employed inside and outside WPAFB, congestion related to the start and end of each business day is expected. Most vehicular movement in and out of the base does not disrupt residents going to and from work or dropping off and picking up children from school.

Roads around Areas A and B experience traffic congestion, which can create safety issues and increase travel times for traffic going to and around the installation. The areas are separated by SR-444, a common thoroughfare that connects Wright State University, local parks, various security entrances/exits, and the communities on either side of the Mad River. Concerning Area B, there has been a recent uptick in residential and employee traffic traveling to and from the installation using Kauffman Avenue/SR-444. Kauffman Avenue and SR-444 run directly along the fence line of Area B and are used by many residents, students, and employees to travel to work and school.

I-675 and State Route (SR) 844 are also used to access Areas A and B. Traffic exiting these highways causes backups and delays due to ID checks. Gate access issues include surges in gate usage, lack of staff, or attempted unauthorized access situations. One of the top priorities at a military installation is keeping the installation secure, which involves screening vehicles and individuals passing through the entry gates. A single authorized vehicle entering the base with the proper credentials does not typically take long to process with the proper credentials; however, a gate's capacity during heavy traffic onto WPAFB may create congestion for those entering during peak travel times.

Several projects have been planned or programmed to improve regional roadway network congestion, considering that the accessibility and reliability of transportation routes to and from Wright-Patterson AFB are vital for daily operations and emergency readiness.

In Riverside, planned improvements to Springfield Street, Harshman Road, and Woodman Drive include exploring traffic circle designs and enhanced pedestrian pathways to alleviate congestion, improve safety, and establish a streamlined route into Wright-Patterson AFB. This new intersection configuration will create an accessible gateway to the base, provide continuous traffic flow, and contribute to overall community connectivity, benefiting residents and base personnel. The traffic circle can also serve as a visual gateway to the base and the National Museum of the U.S. Air Force, incorporating static displays in the circle's center.

In the City of Beavercreek, the I-675 and Grange Hall interchange project aims to ease traffic congestion for southbound commuters heading to the base. The project aims to reduce delays, improve traffic flow, and create faster and more reliable routes. For Wright-Patterson AFB, these enhancements mean enhanced operational readiness, with a more dependable pathway for personnel commuting from the south. An improved interchange also benefits resiliency by offering an effective evacuation route and supporting emergency base logistics.

The City of Huber Heights has proposed realigning New Carlisle Pike, linking it with East Chambersburg Road near State Routes 4 and 235. This realignment will provide alternative routing, relieve congestion, and open commercial development opportunities near Wright-Patterson AFB. The reconfigured route will improve traffic safety and provide enhanced access during peak hours, supporting a quick and efficient response for military operations. As Huber Heights develops, the additional infrastructure support from the realignment strengthens the regional transportation network essential for mission continuity at Wright-Patterson AFB.

## Safety

Safety zones are areas where development should be restricted due to the higher risks to public safety. Issues to consider include APZs, weapons firing range safety zones, and explosive safety zones.

SA-1

### Assess incompatible development in the Accident Potential Zones.

Incompatible land uses in APZ I and APZ II create potential concerns for public health, safety, and welfare in the event of an aircraft mishap.

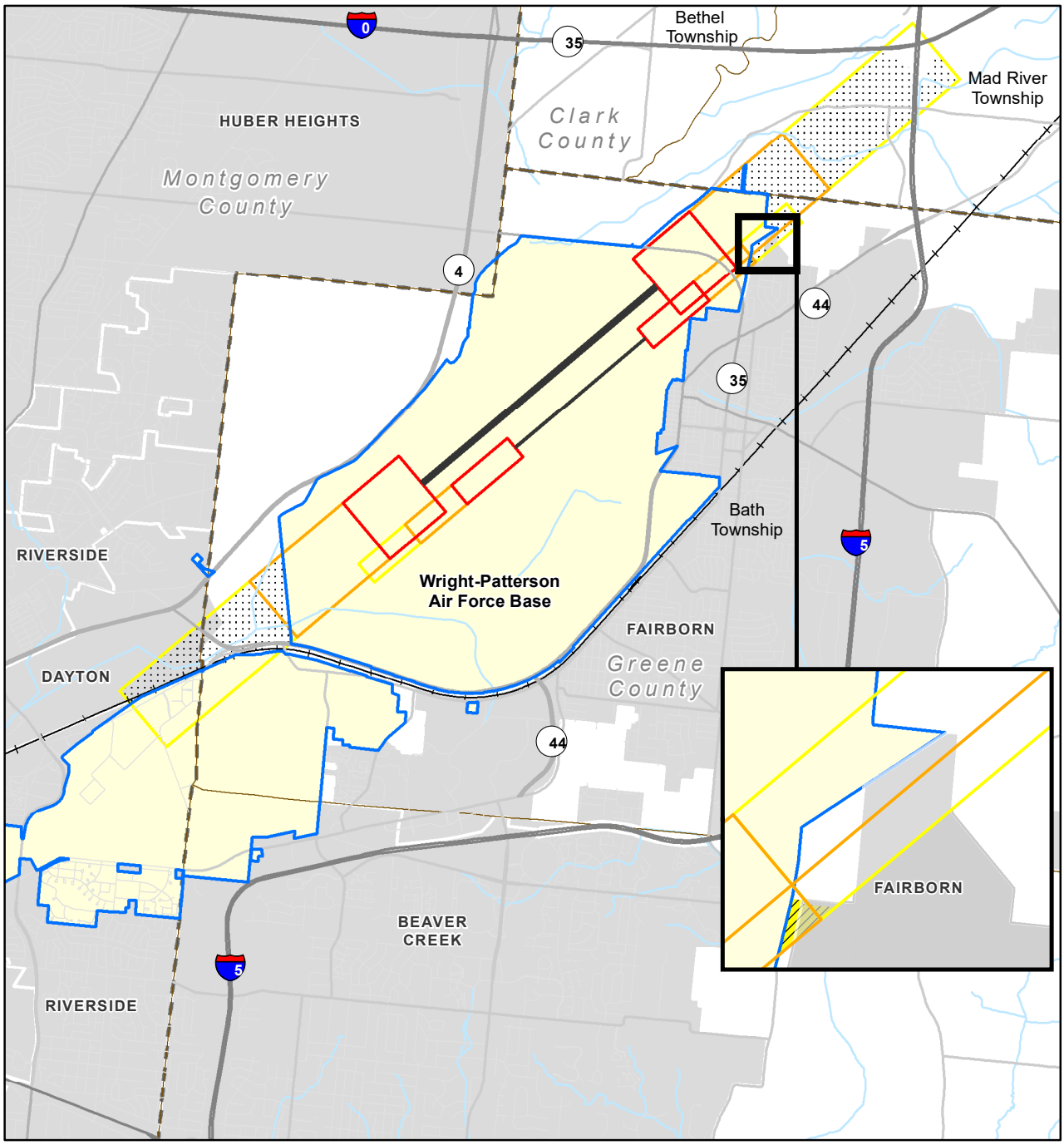
The land use northeast of Runway 23L includes several land use types. Although there is some development along the edges of the APZs, most of the land within the APZs remains open or used in a compatible manner.
The APZ II area also reaches the I-70 and I-675 interchange, which has some commercial activities and land uses associated with transportation activities; however, transportation infrastructure is generally compatible as it does not

include large concentrations of people. Overall, as shown on Figure 6-4, the safety zones north of WPAFB are relatively undeveloped, or the existing land uses are generally compatible with aircraft operations.

The City of Fairborn's Water Treatment Plant is located next to Sandhill Park on the eastern edge of the Class A safety zones. While the facility sits on the edge of APZ I, the Sandhill Road Water Treatment Plant draws water from the Mad River Buried Valley Aquifer through two wellheads. The remaining land in Greene County is composed of forested areas inside the APZs. In Clark County, the land is designated agriculture, and the Comprehensive Plan attempts to ensure the area remains minimally developed, seeking to keep it as agricultural land. Much of the land is located within the Mad River Floodway and has limited development potential.

To the south of WPAFB, the land is primarily public/quasi-public land associated with Huffman MetroPark and flood control areas (such as Rohrer's Island) along the Mad River. Overall, these areas are considered compatible with aircraft operations.

The potential for incompatible development increases when no regulations or limited zoning is in place to protect the safety zones. It is possible that a formalized coordination process between WPAFB and the surrounding jurisdictions could alleviate potential concerns by allowing WPAFB to review the proposed development in an advisory capacity and provide a compatibility assessment of the potential development proposal. For example, industrial uses in APZ II are allowed, provided the floor area ratio (the ratio of a building's total floor area to the size of the parcel upon which it is built) is reduced, and the proposed land use limits the concentrations of people to 50 or less per acre.




**Generalized Existing Land Use**
- Residential

**Compatibility**
- Compatible
- Incompatible
- Conditionally Compatible

**Airfield Safety Zones**
- Clear Zone
- Accident Potential Zone I
- Accident Potential Zone II

- Runway
- Wright-Patterson AFB

- City
- Township
- County
- Railroad

Matrix

Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.

0 ½ 1 Miles

**Figure 6-4 Compatibility Assessment within the Accident Potential Zones**

SA-2

## Assess bird and wildlife attractants near the runway.

While conservation areas surrounding WPAFB reduce the potential for development encroachment, they are also habitats for birds and wildlife that can create hazards for aircraft strikes (Bird/Wildlife Aircraft Strike Hazards).

WPAFB has an active Bird/Wildlife Aircraft Strike Hazard Plan. It provides a program to minimize the hazards of bird and wildlife strikes to aircraft at WPAFB. The Plan is based on hazards from local wildlife, including resident and migratory bird populations. Implementation is ongoing, and certain portions of the Plan are active during the bird migration season.

The communities around WPAFB have done a commendable job protecting areas near WPAFB, including various parks and undeveloped open space. A significant amount of agricultural land north of WPAFB in Clark County is not anticipated or targeted for development. The Mad River runs through Clark and Montgomery Counties, and the floodways along the river basin are incompatible with many types of development and will remain undeveloped.

The rivers, open space, undeveloped land, agriculture uses, and parks provide excellent habitats for birds and wildlife. Wildlife and birds pose an ongoing threat to aircraft operations. The number of bird strikes, as shown in Table 6-4 for the past five years, peaked in 2018 at 46 incidents. Since 2019, annual bird strikes have not exceeded 20 incidents. It is important to note that bird strikes that directly hit a propeller or a jet engine intake can cause aircraft failure in flight; the birds do not have to be large to cause significant damage.

**Table 6-4** Reported Bird Strikes at WPAFB, 2018-2022

| Incident Type | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Bird Strike | 46 | 18 | 7 | 15 | 19 |

The communities and WPAFB can develop a memorandum of agreement to manage bird habitats or attractants that increase hazards along the flight arrival and departure paths and closed patterns. Incorporation of a BASH military influence area (MIA) that restricts or requires mitigation strategies for landfills, transfer stations, golf courses, wetlands, stormwater ponds, waste disposal operations, wastewater treatment facilities, dredge disposal sites, and other potential land use types that attract congregations of birds along frequently used flight paths is recommended. The BASH MIA should be incorporated into the local code of ordinances to provide guidance for developers and landowners.

## Dust/Smoke/Steam

DSS-1

Dust/Smoke/Steam interference with aircraft navigation.

Dust, smoke, and steam are airborne particles that can reduce visibility, impair aircraft systems, and create hazardous conditions for flight operations at WPAFB. These particles can originate from sources such as nearby industrial activities, construction sites, wildfires, or natural phenomena, posing risks to aircraft, personnel, and infrastructure.

Particles of dust and other materials found in the air are referred to as particulate matter. PM10 and PM2.5 are considered toxic, with particles less than 10 µm (micrometer) in diameter and less than 2.5 µm, respectively. They can be caused by many phenomena, including vehicular traffic on unpaved roads and surfaces, wind blowing over unpaved and unvegetated areas, vehicle maneuvers, explosions, aircraft operations, and earth-moving activities such as construction, demolition, and grading. Smoke can be created by fire (controlled burns, agricultural burning, and artillery exercises), industrial activities, and other processes. Similarly, steam can be created by industrial and other activities and is more prominent during cooler weather. Dust, smoke, and steam present compatibility issues if they are sufficient In quantity to impact flight operations, such as by reducing visibility or if they damage equipment.

Potential risks associated with dust, smoke, or steam include:

**Reduced Visibility:** Dust, smoke, and steam can reduce visibility, especially during takeoff, landing, and low-altitude maneuvers, increasing the risk of collisions, runway incursions, and spatial disorientation for pilots.

**Aircraft Performance:** Airborne particles can impact aircraft performance by affecting engine intake, leading to reduced engine efficiency, increased maintenance requirements, and potential power loss.

**Air Quality Concerns:** High concentrations of dust, smoke, or steam can degrade air quality, posing health risks to personnel, affecting equipment reliability and necessitating operational restrictions or suspensions.

**Safety and Mission Impact:** Hazardous atmospheric conditions due to airborne particles can disrupt flight schedules, delay missions, and compromise operational readiness, impacting mission success and personnel safety.

**Impact on Flight Operations:** The hazards posed by dust, smoke, and steam can significantly impact flight operations at WPAFB:

- Increased risk of accidents, incidents, and near-misses due to reduced visibility and impaired aircraft performance.
- Flight delays, diversions, or cancellations in response to hazardous atmospheric conditions.
- Operational restrictions or limitations on flight activities to ensure safety and mitigate risks associated with airborne particles.


# 7 Implementation Plan

The Implementation Plan presents the recommended courses of action (strategies) developed through collaboration among project partners. Since the Wright-Patterson AFB CUP is the result of a collaborative planning process, the strategies truly represent a consensus-based plan and a realistic and coordinated approach to compatibility planning.


The Implementation Plan is the heart of the CUP. This Plan includes various actions that promote education, communication, compatible land use, and resource planning around WPAFB. Upon implementation of the strategies, existing and potential compatibility issues arising from the civilian/military interface can be eliminated or significantly mitigated.

# 7.1 Implementation Plan Guidelines

The key to a successful implementation plan is balancing the needs of all the involved stakeholders. To produce an equitable plan, several guidelines were used as the basis for strategy development:

- Recommended strategies must not result in the taking of property value, meaning rendering the property undevelopable or unable to achieve economic gain by removing development rights defined by state law. Some recommended strategies may involve establishing conservation easements on private property, but only if landowners are willing to take such actions.
- To avoid issues relating to the non-compliance of existing land uses, any zoning amendments or regulatory changes should include "grandfather" clauses to allow existing legal uses to be retained.
- Any proposed regulatory or policy guidance changes, such as zoning ordinances or general/comprehensive plans, should not affect properties with existing entitlements or previously approved for development.
- To minimize regulation, some strategies are recommended only for the specific geographic areas within which relevant issues occur.
- Some recommended strategies can be implemented only with new legislation.
- Any strategy involving developing new regulatory measures or updating existing ones, such as amending zoning ordinances, adding new zoning overlay districts to existing zoning ordinances, or amending municipal guidance documents, such as community general plans, county comprehensive plans, and local regulations, may involve public hearings and the notification of affected and potentially affected property owners or land management entities before implementation.
- As in other planning processes that include numerous stakeholders, the challenge here is to create a solution or strategy for outcomes that meet the needs of all parties. Instead of eliminating strategies that do not have complete buy-in from all stakeholders, each strategy may be further refined to create multiple approaches that address the same issue in tailored, community-specific ways.
- Since state and federal regulations are subject to change, implementing jurisdictions or parties should ensure no conflicts have arisen between strategies and local, state, or federal laws before implementation.

# 7.2 How to Read the Implementation Plan

The strategies presented in this chapter address the compatibility assessments identified in Chapter 6. These strategies constitute the CUP Implementation Plan. The purpose of each strategy is to:

- Facilitate sustained, enhanced communication and collaboration;
- Avoid future actions, operations, or approvals that may cause incompatibility; and
- Eliminate or reduce existing compatibility concerns.

The strategies in this chapter strengthen the relationship between communities, agencies, organizations, and WPAFB to promote compatible development.

The strategies include information on when and how they should be implemented and are grouped according to the compatibility finding they address. The following paragraphs provide an overview of how to read the Implementation Plan:

**Issue Box.** The issue box identifying the specific compatibility issue being addressed is presented before each recommended set of strategies.

**Strategy Box.** The descriptive title of each strategy is presented in bold in the strategy box. Each title starts with an alphanumeric identifier that provides an easy reference and further encodes the related, general compatibility factor abbreviation and a unique numeric identifier (e.g., COM-1, COM-1B, etc.). This descriptive title is followed by the complete strategy statement or recommended action.

**Strategy Rows.** Each strategy is presented in two rows in the table. The first row includes a description of the strategy and the parties responsible for its implementation. The second row identifies the type of strategy, the timeframe suggested for implementation, and the level at which implementation is prioritized.

**Party Column.** A column along the right side of each strategy box identifies the stakeholders who should serve as either a "Responsible Party" or a "Partner." Responsible Parties implement the strategy, while Partners play supporting roles.

**Strategy Type.** This box identifies the type of tool that a strategy constitutes. Strategy types are indicated by the icons shown below. Some strategies constitute multiple types, in which case multiple icons are listed.

Strategies marked with the icon on the left may be eligible for follow-on implementation funding from the OLDCC. Stakeholder organizations that take the lead for implementation may apply for and be awarded OLDCC or other federal and state grants. Designation via this icon in the CUS Implementation Plan represents a potential funding opportunity, with eligibility determined by the granting agency or agencies. It should be noted that the OLDCC funds communities and local government organizations but does not fund the U.S. Air Force or other DoD entities.

**Timeframe Box.** This box presents the recommended timeframe in which a strategy should be implemented. The timeframes represent multi-year periods during which strategies should be initiated or indicate actions that should be ongoing, whether continuous, intermittent or as needed:


Short-Term (0-2 years)
Strategy to be considered and initiated within two years following CUP completion.


Mid-Term (2-5 years)
Strategy to be considered and initiated within two to five years following the completion of the CUP.


Long-Term (5+ years)
Strategy to be considered and initiated in five or more years following the completion of the WPAFB CUP.


Ongoing
Strategies to be considered and, if possible, implemented continuously, intermittently, or as needed.

**Priority Box.** Similar to the level of importance, this box indicates the degree to which the implementation of a strategy is a priority. Implementation may be a low, medium, or high priority.

# 7.3 Implementation Plan

The Implementation Plan is centered around an active CUP Implementation Phase Committee meeting regularly using an existing forum or after establishing a new one. The proposed WPAFB CUP Implementation Phase Committee should consist of the WPRCOG and additional partners collaborating to implement the identified strategies to promote the community's health, safety, and welfare. **The WPAFB CUP encompasses a range of strategies aimed at ensuring the effective execution of the Plan during the implementation phase.** These strategies also protect the operational integrity of WPAFB, its unique operational missions, and the flight training mission within the Project Area. This purpose-built committee should establish the foundation for the transition to a standing WPAFB Partnership Committee.

## Implementation Strategies

These strategies are designed to safeguard the community's interests and promote the operational integrity of WPAFB for its current and future defense, innovation, and training missions. It is important to note that some of these strategies are extensions or enhancements of the existing Airport Zoning Regulations.

The structure and layout of the strategies below follow the sequence of issues presented in Chapter 6: Compatibility Assessment.

### Social Strategies

These strategies actively seek opportunities to enhance relations between jurisdictions and the military within the Project Area. Each strategy facilitates robust collaboration among the various entities and organizations within the CUP Project Area. The primary objective of these social strategies is to develop proactively and enhance symbiotic relationships between the military and the surrounding jurisdictions. These relationships effectively blend the community's needs with military objectives and promote compatible growth within the Project Area.

# Communication and Coordination

## Issues and Strategies

**Issue COM-1**

**External coordination with WPAFB tenants is inconsistent.**

WPAFB's extensive scale, numerous tenants, diverse mission sets, and operational presence can lead to coordination and collaboration challenges outside the fence line.

**Strategy COM-1A**

**Identify a point of contact and create a pamphlet with WPAFB positions and contact information that agencies, developers, jurisdictions, organizations, residents, and WSU can utilize to contact WPAFB.**

The 88th Air Base Wing established a Strategic Initiatives Office that directly reports to the commander and vice commander.

However, the Strategic Initiatives/Public Affairs Office may be unable to provide outreach and feedback to all inquiries directed to the base. Mapping out and establishing/maintaining a resource booklet with WPAFB staff positions and contact information can support community inquiries, establish communication channels beyond "informal communication channels," and establish formal communication and outreach channels.

The strategic initiatives officer or position(s) identified by the commander can handle and facilitate internal communications between the many tenants on the base, maintain/update the pamphlet, and support a unified message to regional communities.

The Installation Planner (88CEG/CENPL) facilitates communication and provides an avenue for communities, agencies, organizations, WPAFB, and the various internal tenants to enhance opportunities for successful collaboration and compatible growth. These duties can be updated to incorporate regular annual meetings.

### Responsible Party

- WPAFB

### Partners

- WPAFB Tenant Units

### Strategy Types

### Timeframe

Short

### Priority

High

## Strategy COM-1B

**Establish/transition to the WPAFB Partnership Committee.**

A Partnership Committee should be established, such as a subcommittee of the COG, once the implementation phase has been funded. The Committee can address future compatibility issues as they arise and oversee the execution of the Implementation Plan. The WPAFB Partnership Committee should be established to:

- Maintain efficient and effective coordination among the CUS partners and other affected stakeholders;
- Enhance long-term coordination on military compatibility issues;
- Provide an open, recurring forum for communication and coordination between the military base and community partners; and
- Identify and pursue grants.

The issues discussed and addressed by the Partnership Committee should focus on resiliency, opportunities to enhance or provide redundant services, development and procurement of grant funding, additional ways to streamline and improve existing communication, identification of mutually beneficial solutions, and the execution of the Implementation Plan to protect the military missions and support economic growth and prosperity for the regional communities. The Installation Planner can staff an annual meeting of the Partnership Committee.

### Responsible Party

- WPRCOG

### Partners

- Wright-Patterson AFB
- Clark, Greene, Montgomery, and Miami Counties
- Dayton Development Coalition
- Miami Conservancy District
- Other public agencies as needed

### Strategy Types

### Timeframe


### Priority

## Strategy COM-1C

**Develop and maintain mutual aid agreements.**

The development and maintenance of mutual aid agreements with local emergency services, law enforcement agencies, and first responders can ensure a coordinated response in case of emergencies or disasters. The agreements can guide communication and collaboration protocols and requirements.

For the mutual aid to be successful, the implementation should include:

- Collaboration with local emergency management agencies and develop integrated emergency preparedness plans that account for the base's resources and capabilities and
- Joint exercises and drills involving base and local emergency services to enhance coordination and response capabilities during emergencies.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- WPRCOG
- Other public agencies as needed

### Strategy Types

### Timeframe

Mid

### Priority

High

## Strategy COM-1D

**Enhance public engagement activities.**

The WPAFB installation planner can coordinate directly with the Public Affairs Office to implement additional outreach and information-sharing objectives to boost transparency and collaboration within the region.

This may include:

- Development and implementation of clear communication protocols to ensure that all tenant organizations and stakeholders are aware of events, activities, and changes that may impact them or the local community.
  - This can include regular meetings, email updates, and an online platform for information sharing.
- Engaging in community outreach programs, including educational initiatives to increase public awareness about the base's mission and its importance to the region.
- Exploring opportunities for sharing resources and sustainable practices with the local community, such as water and energy conservation, to strengthen relations and contribute to the community's well-being.
- Hosting periodic meetings with local community leaders and residents to address concerns, share updates on base activities, and solicit feedback on issues affecting the community.
- Implementation of shared communication and information platforms to facilitate real-time information sharing and collaboration between tenant organizations and external stakeholders.

### Responsible Party

- WPAFB

### Partners

- WPAFB Partnership Committee
- WPAFB PAO
- Other public agencies as needed
- Other social media representatives as needed

### Strategy Types

### Timeframe


### Priority

## Strategy COM-1E

### Establish a recurring agenda item for compatibility at WPRCOG meetings.

The WPRCOG can create a recurring agenda item to discuss compatibility issues with and around the base focusing on both existing and potential issues.

WPAFB can attend these meetings as a non-voting participant of the COG and can provide updates on hazards that impact the operational capabilities and capacities at WPAFB.

The discussion should include, at a minimum, issues such as the environment, climate, construction, and aircraft noise.

Additional potential topics include:

- Sharing of short- and long-term visions and goals;
- Changes in federal agency, DoD, and WPAFB policy and guidelines relevant to the group;
- Real property developments at WPAFB; and
- Changes to regional comprehensive plans, master plans, transportation plans, zoning, development projects, and capital improvement plans.

#### Responsible Party

- WPRCOG

#### Partners

- WPAFB
- Other public agencies as needed

#### Strategy Types

#### Timeframe


#### Priority


## Additional Relevant Strategies

### COM-4A Establish a CUP Implementation Phase Committee.

The Committee will identify a forum to increase communication and collaboration, execute the Implementation Plan, and secure grants. The Implementation Committee is designed to initiate and complete the implementation phase and can be phased into the Partnership Committee, which focuses on long-term compatible growth.

### COM-4C Identify funding for implementing the CUP strategies.

Securing additional funding, such as funds to execute the implementation phase, is the key to a successful Implementation Plan. Implementation funding can also provide funding for augmented (temporary) staff, such as liaison officers, to fill identified staffing needs.

**Issue COM-2**

**No standardized development review process exists.**

Many neighboring communities and some regional agencies do not engage in standardized communication with WPAFB regarding development and planning processes.

**Strategy COM-2A**

**Develop a courtesy review process with regional planning staff.**

WPAFB, through its community planner or civil engineering planning staff, should establish a courtesy communication process that includes points of contact and triggers for development proposal reviews. A standardized courtesy review process should be created for all communities to streamline efforts and mitigate issues. This process should be flexible to account for differences between cities and counties.

The Memorandum of Understanding (MOU) between WPAFB and each neighboring jurisdiction should outline the roles, responsibilities, and processes for courtesy reviews of development proposals. The agreement should include:

- Point of contact and information for each agency.
- Roles and responsibilities for addressing compatibility issues.
  - Developing a set of consistent review criteria and standards for evaluating development proposals.
- Establishing a shared online platform or database to access development proposals, environmental impact assessments, and relevant documents.
  - Additional details can be found in COM-2C.
- A focus on development proposals that impede navigable airspace, residential units within the noise contours, and the safety zones.
- Creation of a review timeline.
  - Prioritize and streamline the review process for developments that impact or potentially impact the base's operations.

### Responsible Party

- WPAFB

### Partners

- Local jurisdictional planning staff

### Strategy Type

### Timeframe


### Priority

## Strategy COM-2B

**Collaborate and enhance awareness of compatible land use planning.**

WPAFB, the WPCOG, and regional jurisdictions can collaborate to develop an updated land use master plan for land within the Airport Zoning Regulations and areas within the HAFZ. The six unique districts in the Airport Zoning Regulations currently require building standards on development to include sound-reduction measures, ensure flight safety in the runway protection zones, and limit heights for structures built within the imaginary surfaces and transitional planes.

The community planner or the civil engineering planning staff should work with the Airport Zoning Board and other agencies/entities to communicate the importance of keeping the areas of concern free from incompatible development and to promote compatible development within the areas of concern.

As mentioned in COM-2A, developing a formal agreement or MOU will assist in identifying contact lists and coordination protocols. Additional actions WPAFB, WPRCOG, and the WPAFB Airport Zoning Board can take to bring awareness to the existing regulations include the following:

- Establish a recurring meeting schedule to discuss development proposals, share information, and discuss best practices and engage techniques and strategies to promote compatible development around the base.
- Implement protocols that require developers to notify neighboring communities early in the planning stages of any proposed development.
- Provide regular reports to the public and stakeholders on the outcomes of the development review process, emphasizing transparency and accountability.
    - Conduct public outreach and educational programs to engage the local community in the development review process, ensuring that their concerns and interests are considered.

### Responsible Party

- WPAFB

### Partners

- WPAFB Airport Zoning Board
- WPRCOG

### Strategy Types

### Timeframe


### Priority

## Strategy COM-2C

### Develop a notification regional web portal.

WPRCOG can develop a secure and accessible development notification web portal.

The portal can include the geospatial location of each development project and flags to indicate if the parcel is within an area that impacts or is potentially impacted by operations at WPAFB.

The portal should include guidance on the next steps, a review of the timeline, and a visualization of the imaginary surfaces, safety zones, noise zones, and BASH relevancy area.

The ability to create a "review ticket" that is sent to the correct jurisdiction with the next steps provides an open and transparent review process. It also allows for the WPRCOG, WPAFB Airport Zoning Board, and local communities to have best practices established and to track proposals that pose compatibility concerns to WPAFB operations.

#### Responsible Party

- WPRCOG

#### Partners

- WPAFB Airport Zoning Board

#### Strategy Types

#### Timeframe

Short

#### Priority

Medium

## Strategy COM-2D

**Establish a WPRCOG technical subcommittee to the Airport Zoning Board.**

The WPRCOG was established to promote compatible development around the base, establish a uniform governmental approach by the community around WPAFB, and increase collaboration of neighboring jurisdictions. The WPRCOG comprises five cities and one township.

The existing Airport Zoning Board and the associated enforcement of the regulations are the authority of the counties. Creating a technical subcommittee to provide land use recommendations to the Board under the authoritative umbrella of the WPRCOG allows communities to track and share best practices and ensure that:

- Developments within imaginary surfaces are subject to height limitations and FAA requirements;
- Developments within noise footprints are subject to sound-reduction requirements and land use compatibility guidelines; and
- Developments within safety zones are subject to compatibility guidelines.

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

| Issue COM-3 | **WPAFB outreach with the public is viewed as limited.** |
|---|---|
| | Residents have noted aircraft noise is an issue for neighborhoods around the base. Additionally, many residents expressed concerns about a lack of information regarding PFAS compounds stored and used at WPAFB since the 1970s. |

## Strategy COM-3A

**Develop an aircraft noise fact sheet.**

Create a one-page fact sheet to provide an overview that presents, at a minimum, information on aircraft noise around WPAFB. The fact sheet should include how to understand sound levels, the impacts of living near an airbase, sound mitigation strategies for residences within the noise contours, and point of contact information at the base for the public.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy COM-3B

**Establish a dedicated web page for aircraft noise.**

Establish a public web page to facilitate information sharing and opportunities for comment and feedback. At a minimum, the web page should include:

- A PDF version of the aircraft noise fact sheet;
- Construction guidelines found in the Airport Zoning Regulations;
- Communication regarding noise mitigation efforts to reduce the impact of aircraft noise on nearby neighborhoods;
- Information about flight schedules and plans for noise reduction; and
- Brief details on how WPAFB mitigates and alerts the community about noise events, including contact information for inquiries related to aircraft noise.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- Other public agencies as needed
- Other social media representatives as needed

### Strategy Types

### Timeframe

Short

### Priority

## Strategy COM-3C

### Develop a PFAS fact sheet.

Create a one-page fact sheet to provide an overview that presents, at a minimum, information on PFAS compounds. This can include the location of known sites, remediation efforts, facts about the safety and future security of the local drinking water, future efforts to mitigate leaching, and contact information for additional information.

**Responsible Party**

- WPAFB Partnership Committee

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Strategy COM-3D

### Create a public advisory board for the WPAFB CUP.

An advisory board can exist to participate in the implementation phase of the WPAFB CUP. The board can assist in reducing misconceptions, boost transparency, and increase the community's awareness of ongoing and future compatibility efforts.

The advisory board would receive updates via email, participate in public meetings and focus groups and assist in survey development to gather input, feedback, and concerns. The advisory board should be an additional resource for spreading the word about important milestones and actions.

The public advisory board, which will participate as a non-member while overseeing the implementation phase, should include members who are residents of the community, non-elected, and interested in collaborating with the Partnership Committee. Furthermore, they must be able to meet the engagement requirements associated with being on the board.

**Responsible Party**

- WPAFB Partnership Committee

**Partners**

- Local citizens

**Strategy Type**

**Timeframe**


**Priority**

## Additional Relevant Strategies

### COM-1A Appoint or designate a community planning liaison officer.

The planning liaison officer can facilitate communication and address residents' concerns regarding noise and chemicals and act as a base representative and point of contact for residents, businesses, jurisdictions, and other relevant agencies and organizations.

### COM-4E Create a sharing portal.

A sharing portal on the WPRCOG website will allow interested community members to view progress, best practices, and other important details on the ongoing implementation phase.

## Issue COM-4

**There will need to be an effective collaboration plan to implement the recommendations.**

Implementing the CUP recommendations will require ongoing coordination and collaboration between equity stakeholders to monitor progress, address potential challenges, and share lessons learned and successes that other CUP partner communities may replicate.

## Strategy COM-4A

### Establish a CUP Implementation Phase Committee.

The existing CUP Steering Committee members should be invited to become charter members of the WPAFB CUP Implementation Phase Committee.

As the Committee is established and evolves, new stakeholder groups should be invited to join/participate as appropriate. The WPAFB CUP Implementation Phase Committee should meet regularly, as agreed upon by the Committee.

The Committee should review the CUP recommendations and track the implementation efforts and accomplishments. One vital Committee goal is monitoring emerging issues from both the community and Air Force perspectives to ensure long-term military operational utility and compatibility as missions evolve.

The WPRCOG is recommended as the lead agency in developing and managing the CUP Implementation Phase Committee to continue the momentum created through the CUP process.

*The CUP Implementation Phase Committee is a transitional precursor to standing up a WPAFB Partnership Committee.*

#### Responsible Party

- WPRCOG

#### Partners

- Wright-Patterson AFB
- Clark, Greene, Montgomery, and Miami Counties
- Dayton Development Coalition
- Miami Conservancy District
- Other public agencies as needed

**Strategy Types**

**Timeframe**


**Priority**

## Strategy COM-4B

### Develop a charter.

The WPAFB Implementation Committee members should develop a charter that formalizes the group's mission, objectives, and operational standards. The charter should contain at least the following information:

- Committee purpose
- Committee membership
- Point of contact and contact information for each organization/partner and a membership directory
- Agency/partner and membership roles and responsibilities in addressing compatibility issues, clearly defining the objectives and expected outcomes
- Meeting frequency
- Triggers for coordination and communication (e.g., infrastructure planning, water resources planning, economic development, mission changes, etc.)

The Committee can create project-specific teams of representatives from different equity stakeholder groups. These teams can focus on specific recommendations and work together to implement them effectively.

The charter can include how or a date when the Implementation Committee will transition into the Partnership Committee.*

The charter should include clear communication protocols to ensure that all tenant organizations and stakeholders know about events, activities, and changes that may impact them or the local community. This should include regular meetings, email updates, and an online information-sharing platform.

**Transitioning to the Partnership Committee is recommended once the CUP implementation phase has received funding, is in progress or is completed.*

#### Responsible Party

- WPRCOG

#### Partners

- WPAFB
- Clark, Greene, Montgomery, and Miami Counties
- Dayton Development Coalition
- Miami Conservancy District
- Other public agencies as needed

#### Strategy Type

#### Timeframe

Short

#### Priority

High

## Strategy COM-4C

**Identify funding for implementing the CUP strategies.**

The Committee can consider opportunities for securing additional funding (such as OLDCC implementation funding) and resources from external sources, including government grants, private foundations, or corporate partnerships to implement strategies. Some funding sources that can be utilized to assist in addressing key CUP implementation recommendations include:

- OLDCC CUP implementation grants
- The REPI Program and
- The Defense Community Infrastructure Program (DCIP)

Many other opportunities exist for funding projects on and off base. Understanding the opportunities and guidelines for applications well before the submission deadline is essential. Coordination and communication will be imperative to successful funding requests.

### Responsible Party

- WPAFB Implementation Phase Committee

### Partners

- Other public agencies as needed

### Strategy Types

### Timeframe


### Priority

## Strategy COM-4D

**Develop and fortify WPRCOG revenue streams.**

The WPRCOG is a recent governmental entity that collects the various jurisdictions around WPAFB.

As the WPRCOG grows and expands, funding to ensure operations and maintenance may become critical to its operational capabilities and capacity.

Jurisdictions can develop a sustainability plan to ensure that the WPRCOG's operations and maintenance are solvent. This plan can include member dues. Developing various funding streams is another way to build solvency.

Funding options include the following:

- Sales tax of .25% for all participating jurisdictions
- Fixed development review fee
- Grant funding
- Bonds or other voter-approved funding

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

### Strategy Types

### Timeframe


### Priority

## Strategy COM-4E

### Create a sharing portal.

The WPRCOG can expand its website to include a web page that provides information on:

- Best practices, successes, and lessons learned among partners to help other CUP communities replicate successful strategies; and
- Establishing a mechanism for sharing data, tracking strategies, and reporting on the impact of the implementation phase to ensure that all partners have access to the information needed to make informed decisions.

#### Responsible Party

- WPAFB Partnership Committee

#### Partners

- Other public agencies as needed

#### Strategy Type

#### Timeframe

Short

#### Priority

Medium

## Additional Relevant Strategies

### COM-1B Establish/transition to the WPAFB Partnership Committee.

To continue the collaborative efforts underway and to form a partnership extending beyond CUP implementation, establish a WPAFB Partnership Committee to collaborate on future compatibility issues and promote long-term compatible growth inside and around WPAFB.

### COM-1E Establish a recurring agenda item for compatibility at WPRCOG meetings.

Establishing periodic meetings with a standing agenda item to discuss compatibility concerns and allow each partner to review progress, discuss challenges, and share updates.

| Issue COM-5 | **Needs for increased public awareness of the WPAFB Airport Zoning Regulations.** |
|---|---|
| | Public awareness of airport zoning regulations must be enhanced to promote transparency, compatible land use, and economic development while protecting property values and strengthening community trust. |

## Strategy COM-5A

**Develop a public education campaign for Airport Zoning Regulations.**

The WPRCOG should create an outreach plan to socialize the WPAFB Airport Zoning Regulations with residents in their communities. The public outreach program can include direct presentations to realtors and developers and education sessions with staff from townships and cities to educate the public and residents. This can be supplemented with informational brochures to be distributed by mail and social media and hosted on the various social platforms of the regional jurisdictions.

Public events can be organized as public information sessions or workshops to explain Airport Zoning Regulations, their importance, and how they impact the community. These sessions should be interactive to answer questions and address concerns.

Engagement with community organizations, neighborhood associations, and local chambers of commerce is critical to spreading the word and increasing awareness about the importance of the Airport Zoning Regulations.

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe

Short

### Priority

Medium

## Strategy COM-5B

### Create an Airport Zoning Regulations brochure.

The WPRCOG can create user-friendly brochures, pamphlets, or online resources that provide an overview of the Airport Zoning Regulations. Make these materials readily available to residents, businesses, and local organizations.

The airport zoning administrator for each community should be identified, and contact information should be easily available.

**Responsible Party**

- WPRCOG

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Strategy COM-5C

### Locally adopt the Airport Zoning Regulations.

The townships, cities, and villages within the WPAFB airport imaginary surfaces can formally adopt the WPAFB Airport Zoning Regulations.

Adoption and integration of the height, safety, and sound regulations will remove any ambiguity and improve adherence to and compliance with existing countywide regulations.

**Responsible Party**

- Local jurisdictions

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

## Strategy COM-5D

**Incorporate the Airport Zoning Regulations into plans and GIS portals.**

The developable height restrictions and zoning districts should be incorporated into comprehensive plans, master plans, and other general plans and studies that are in use by the regional jurisdictions.

This ensures transparency in the decision-making process related to zoning regulations.

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority


## Strategy COM-5E

**Update the existing WPAFB Airport Zoning Regulations.**

Given the age and limitations of the 1997 Airport Zoning Regulations, updating them using digital technology to align with current DoD guidance is crucial. The revision should accurately reflect airfield safety zones and imaginary surfaces, incorporating dynamic height calculations. Stakeholder engagement and education are essential for effective implementation. This proactive approach will enhance aviation safety and support sustainable development while safeguarding community interests.

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy COM-5F

**Partner with media outlets.**

In conjunction with COM-5A, the WPRCOG can partner with media outlets, including newspapers, radio, and TV stations, to feature stories and interviews about Airport Zoning Regulations and their impact on the community.

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy COM-5G

### Enhance community engagement procedures.

The WPRCOG can partner with jurisdictions to increase transparency and awareness of the Airport Zoning Regulations by:

- Establishing a clear mechanism for residents to provide feedback, ask questions, and report concerns regarding the regulations;
- Ensuring that responses are prompt and informative;
- Providing regular updates on any changes or amendments to the regulations;
- Keeping the community informed about evolving policies and their implications; and
- Reaching out to property owners directly to inform them of the regulations and their rights and responsibilities as landowners in airport influence areas.

**Responsible Party**

- WPRCOG

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Additional Relevant Strategies

### COM-1A Appoint or designate a community planning liaison officer.

The planning liaison officer provides an additional resource as an advocate dedicated to sharing available resources to protect WPAFB and promote compatible development around the base.

### COM-2A Develop formal coordination processes with regional planning staff.

A formalized coordination process between WPAFB and local jurisdictions increases awareness of the zoning regulations and height restrictions with jurisdictional planning staff, which increases informal socialization of the protections within the community.

### COM-2C Develop a notification regional web portal.

An easily accessible web portal lets users quickly visualize if a parcel exists in a regulated area and reduces sunk costs (by investors/residents).

### COM-6B Formalize the review process.

A formalized review process for development applications will streamline the process, reduce staff review time, and develop best practices for regional jurisdictions.

**Issue COM-6**

**There is a lack of inclusivity on the WPAFB Airport Zoning Board.**

The Airport Zoning Board was established to enact the 1997 Airport Zoning Regulations. It has oversight and participation from counties surrounding WPAFB but limited awareness among townships and cities. This can create development challenges for local governments when they provide development guidance.

**Strategy COM-6A**

**Expand Board membership to include townships, cities, and villages.**

The WPAFB Airport Zoning Board administers the WPAFB zoning districts and height restrictions. The Board acts as the compliance administrator for the maps and regulations. Changes to the maps and regulations must be approved by the Board.

Including additional jurisdictions will enhance collaboration with local governments in reviewing and amending the regulations. By increasing membership, the local jurisdictions can assist in increasing awareness and compliance with the existing regulations and promote compatible development around WPAFB.

### Responsible Party

- WPAFB Airport Zoning Board

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy COM-6B

**Formalize the review process.**

The WPAFB Airport Zoning Board delegates the authority of the zoning administrator to the local jurisdiction. This decentralized approach can lead to a lack of communication with WPAFB on development proposals, creating a hazard to flight operations.

Formalizing the review process will create administrative records that are easily accessible, allowing the various jurisdictions to share data, analysis, and best practices and understand development trends that may impact flight operations at WPAFB. This will also allow the Board to have a quickly accessible database of development proposals for review when determining the need to update, enhance, or remove existing regulations.

### Responsible Party

- WPAFB Airport Zoning Board

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

**Additional Relevant Strategies**

**COM-2A Develop formal coordination processes with regional planning staff.**

Develop a formal process between jurisdictions and WPAFB to include the military review and feedback on development proposals. WPAFB can provide a risk assessment for the proposal to assist the decision-making process. This will also reduce and fill gaps that exist in the Airport Zoning Board, which currently only consists of county officials, as WPAFB should be consulting (on an as-needed basis) with local jurisdictions on development proposals that may pose a risk to the operational capabilities and capacities at the base.

**COM-2D Transfer the Airport Zoning Board into the WPCOG.**

If feasible, merge the WPAFB Airport Zoning Board with an entity that comprises all jurisdictions within the area of concern, establishes synergies, and enhances inclusivity.

**COM-5A Develop a public education campaign for Airport Zoning Regulations.**

Inclusivity is a precursor to collaboration, and together, unified communities can promote compatible growth around WPAFB, boosting the regional economic output.

**COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.**

Adopting and owning the Airport Zoning Regulations locally is more likely to occur if the Board is broadened to include all jurisdictions. This may also be instrumental in adopting and implementing the existing zoning regulations and future updates.

# Cultural Resources
## Issues and Strategies

**Issue CR-1**

**There is potential for enhanced public awareness of Air Force-related cultural resources.**

Enhancing public awareness of Air Force-related cultural resources through continued collaboration with the Air Force Museum and Dayton Area Chamber of Commerce is vital to preserve historical legacy, foster patriotism and respect, educate future generations, and strengthen community ties to the installation.

**Strategy CR-1A**

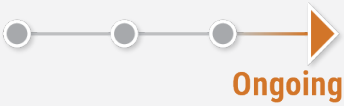
**Enhance the relationship with the Dayton Area Chamber of Commerce.**

WPAFB can use its public affairs department to improve its partnership with the Dayton Area Chamber of Commerce and its members. By working together, they can engage the public more effectively in regional cultural initiatives and projects that impact the community. This could include programs focused on conservation, like protecting endangered species or preserving natural habitats and water quality, as well as safeguarding cultural resources. These joint efforts would help raise awareness about WPAFB's activities, allowing communities to be more prepared for and responsive to these events.

### Responsible Party
- WPAFB

### Partners
- Local and regional jurisdictions
- News and social media outlets

### Strategy Type


### Timeframe



### Priority


## Strategy CR-1B

### Enhance the relationship with the National Museum of the U.S. Air Force.

WPAFB can use its public affairs department to maintain and enhance its connection with the National Museum of the U.S. Air Force. This ongoing relationship should ensure a smooth and current exchange of information from the base to the Museum for public dissemination. The Museum could be a direct channel for sharing information with visitors and locals that WPAFB wants the public to know. This could include updates on public engagement initiatives related to cultural and environmental compatibility issues should they arise.

Additional options that can occur through this public-facing partnership with the Museum include:

- Highlighting ongoing preservation efforts and projects by WPAFB to showcase the commitment to maintaining and protecting cultural resources for future generations.
- Hosting public lectures and a speaker series on Air Force history, inviting experts, veterans, and historians to share their insights and experiences.

#### Responsible Party

- WPAFB Partnership Committee

#### Partners

- Other public agencies as needed

#### Strategy Type

#### Timeframe

Ongoing

#### Priority

Low

## Strategy CR-1C

### Commission public art and sculptures.

The WPAFB Partnership Committee should identify and pursue, if feasible, public art and sculptures can be placed throughout the region to promote the area and boost tourism.

Before pursuing this, establish a budget to determine the scope and range of projects. Consideration of public funding, such as a GoFundMe-type venture should be explored for large-scale ventures. Local artists should be given first priority.

#### Responsible Party

- WPAFB Partnership Committee

#### Partners

- Other public agencies as needed

#### Strategy Type

#### Timeframe

Mid

#### Priority

Low

## Additional Relevant Strategies

### COM-5E Partner with media outlets.

Media outlets are excellent tools for promoting special events, highlighting significant cultural attractions, and maintaining a constant awareness campaign that promotes the region's history. Leverage media to promote WPAFB as a community partner when key events are conducted or milestones have been achieved.

## Resource Strategies

These strategies actively seek opportunities to reduce competition for shared resources, increase awareness of potential resource-related conflicts, and address issues related to the sustainability of biological and natural resources and infrastructure. For instance, changing climate patterns present a range of potential challenges. By collaboratively addressing these challenges, this project can positively impact community resiliency, protect natural resources, and ensure the sustainable use of shared assets like airspace and water.

# Resiliency
## Issues and Strategies

**Issue RES-1**

**Climate change is an evolving threat.**

Adaptation strategies must evolve to effectively address the multifaceted challenges and threats posed by climate change, ensuring resiliency and sustainability in the face of environmental shifts.

**Strategy RES-1A**

**Monitor and collaborate to adapt to climate change in the region around WPAFB.**

Effective implementation of climate change adaptation practices requires collaboration, cooperation, and engagement among multiple stakeholders, including government agencies, military authorities, local communities, businesses, academia, and nonprofit organizations. By fostering partnerships, sharing knowledge and resources, and coordinating efforts, a collective approach to climate resiliency can be achieved, maximizing the effectiveness of adaptation measures and promoting long-term sustainability.

Continuous monitoring, evaluation, and adaptation are also essential to climate resiliency. Regular assessment the effectiveness of adaptation measures, monitoring climate change trends and impacts, collecting data on resiliency indicators, and incorporating lessons learned into future planning and decision-making processes are critical for staying ahead of evolving climate challenges.

### Responsible Party

- WPAFB partner communities

### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

## Strategy RES-2A

### Identify Opportunities for Shared Energy Resiliency.

To enhance energy resiliency for WPAFB and the surrounding communities, identifying opportunities for shared energy projects could provide a mutual and compatible benefit. This could include expanding renewable energy sources like solar and wind, deploying advanced energy storage systems such as batteries and microgrids, and modernizing power infrastructure.

Implementing smart grid technologies could optimize distribution and security, while demand response programs could balance load during peak periods between the base and communities. Partnering with local utility companies will ensure coordinated efforts and adequate resource sharing. Together, these initiatives could strengthen energy infrastructure, reduce vulnerabilities, and ensure a stable, resilient power supply for the base and the community.

#### Responsible Party

- WPAFB partner communities

#### Partners

- AES Ohio
- WPAFB
- Local and regional jurisdictions

#### Strategy Type

#### Timeframe


#### Priority

# Biological Resources
## Issues and Strategies

**Issue BIO-1**

**There is potential for more preservation and protection of natural ecosystems.**

Regional growth can increase pressure on natural habitats for development near WPAFB. These natural areas serve as effective encroachment buffers surrounding WPAFB and should continue to be a priority to support land use compatibility and resiliency.

**Strategy BIO-1A**

**Enact legislation to support conservation efforts.**

Advocate for legislation and policies at the local, state, and Federal levels that support the preservation of natural ecosystems and open spaces near military installations are assessed based on current use.

State legislators can work toward enacting legislation that supports conservation efforts, such as the Sentinel Landscapes Partnership, through initiatives including conservation easement tax credits, property tax abatement for agriculture, and horticulture and Forest lands.

The allocation of resources and funding for ongoing conservation efforts, restoration projects, and land acquisition to protect critical areas often has tangible additional benefits, such as insulating and protecting communities from the adverse impacts of severe weather events.

### Responsible Party

- WPAFB partner communities

### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

## Strategy BIO-1B

### Identify partners to protect natural ecosystems.

Identifying conservation partners to preserve working lands and natural ecosystems and promote habitat and species diversity supports the region's long-term sustainability.

Creating legal agreements can protect the land from development in perpetuity. These agreements can include leveraging public-public and public-private (P4) partnerships and programs such as REPI.

Partnerships will allow WPAFB and partner communities to leverage the expertise and resources to preserve and protect the natural ecosystems.

Those partnership objectives can include:

- Conducting outreach and education programs to raise awareness among the local community about the importance of conserving natural ecosystems for military readiness and the environment;
- Creating and enhancing buffer zones or greenbelts around WPAFB that act as protective barriers to limit encroachment, with buffer zones serving as transitional spaces between developed areas and natural ecosystems;
- Fostering strong partnerships with local communities to collaboratively address the challenges of growth and development while preserving natural ecosystems;
- Hosting periodic meetings with local community leaders and residents to address concerns, share updates on-base activities, and solicit feedback on ecosystem issues;
- Investing in habitat restoration and enhancement projects to improve the quality and resiliency of natural ecosystems; and
- Working with conservation organizations and government agencies to establish conservation easements on critical natural lands.

#### Responsible Party

- WPAFB partner communities

#### Partners

- Conservation agencies and organizations
- WPAFB
- Other public agencies as needed

#### Strategy Type

#### Timeframe

Short

#### Priority

Medium

## Strategy BIO-1C

### Participate in the Sentinel Landscapes Partnership.

The Sentinel Landscapes Partnership is a group of federal agencies, state and local governments, and nongovernmental organizations collaborating to provide private entities with sustainable land management practices around military installations and ranges. Together, they protect vital military test and training missions, conserve habitat and natural resources, and strengthen the economies of farms, ranches, and forests. The Partnership connects private landowners with voluntary assistance programs that support defense, conservation, and agricultural missions.

**Responsible Party**

- WPAFB partner communities

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Mid

**Priority**

Medium

## Strategy BIO-1D

### Promote sustainable development.

Communities can partner to encourage and incentivize sustainable development practices in areas surrounding the base, such as green building standards, energy efficiency, and low-impact design.

**Responsible Party**

- WPAFB partner communities

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Short

**Priority**

Medium

## Strategy BIO-1E

### Develop a regional wildlife management plan.

Communities can partner to create a wildlife management plan to identify ways to coexist with native species, promote biodiversity, and strengthen existing ecosystems. The plan can include addressing issues like wildlife hazards on the airfield and habitat protection.

The plan can establish development guidelines that limit construction near natural ecosystems and sensitive areas by identifying those that require thorough environmental impact assessments for development projects in areas of concern. This helps identify potential risks to natural habitats and inform decision-making.

Additionally, a monitoring and reporting schedule can be developed to track the status of natural habitats and ecosystems, ensuring early detection of threats and prompt response.

**Responsible Party**

- WPAFB partner communities

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Mid

**Priority**

Medium

## Strategy BIO-1F

### Enhance community restoration efforts.

Communities and WPAFB can partner to provide cleanup, conservation, habitat restoration projects, and water protection and restoration efforts. Connected and involved communities are receptive to consensus building and seeking solutions to promote compatible development. Volunteering efforts are excellent ways for residents, elected officials, businesses, and military and civilian employees at WPAFB to work together to restore shared public/quasi-public spaces.

**Responsible Party**

- WPAFB partner communities

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Short

**Priority**

Medium

# Land/Airspace Competition

## Issues and Strategies

**Issue LAS-1**

**The growth of aviation at Dayton International Airport creates airspace competition.**

A planned electric vertical takeoff and landing aircraft (air taxi) production facility at Dayton International Airport will increase air traffic in the region.

**Strategy LAS-1A**

**Develop a Memorandum of Understanding.**

WPAFB, the FAA, Dayton International Airport, and Joby International should develop an MOU to:

- Establish a formal open line of communication to ensure that flight activities associated with production testing do not interfere with existing or future airport operations;
- Create procedures to prevent testing from impeding military flight training;
- Ensure that all aviation operators (partners in the agreement), including air taxi services, adhere to federal and state aviation regulations and guidelines for airspace usage;
- Develop and maintain a safety and training program for air taxi operators to ensure that they are aware of and compliant with airspace regulations and best practices for sharing airspace; and
- Monitor airspace usage and propose adjustments to address any conflicts, future airspace use increases, or issues that may arise.

Establish a communication protocol to protect the navigable airspace as airspace use may increase in the region.

### Responsible Party

- WPAFB

### Partners

- Federal Aviation Administration
- Joby International
- Dayton International Airport

### Strategy Type

### Timeframe

Short

### Priority

Low

**Issue LAS-2**

**The future proliferation of commercial drones can create airspace conflicts.**

As drones transition from emerging technology to everyday commercial use, they can present airspace conflicts with military aircraft.

**Strategy LAS-2A**

**Enhance awareness of federal UAS or drone regulations.**

Communities should work with WPAFB and the FAA to enhance awareness of federal regulations regarding the use and operation of UASs. Awareness enhancements should include but not be limited to:

- Access to information available from the FAA at public locations;
- Weblinks to jurisdictional websites, the FAA website, and National Conference of State Legislatures UAS websites, including the proposed regulation site (http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx); and
- Public meetings about drones and their impacts on military training and civilian/commercial aviation operations. The meetings should be tied with other public events that have already been planned and organized in partnership with community events that will boost awareness and education for existing and future drone regulations.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy LAS-2B

**Partner to enhance resources for enforcing FAA regulations.**

The FAA Law Enforcement Assistance Program (LEAP) provides resources to enforce existing FAA regulations. The LEAP comprises special agents who are the point of contact for federal, state, local, tribal, territorial, and international law enforcement agencies. LEAP special agents can provide information on UAS enforcement and registration matters.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- FAA

### Strategy Type

### Timeframe


### Priority


## Strategy LAS-2C

**Adopt UAS ordinances.**

The WPAFB Partnership Committee and communities within the WPAFB imaginary surfaces (also known as HAFZ) should consider adopting UAS ordinances that dictate where and how UASs can be used. These ordinances should include procedures for landowners within a determined distance from WPAFB to notify the base when a UAS/drone is planning to use the airspace and alert WPAFB personnel, air traffic control, and security forces of activity near the base or flight patterns for safety and security reasons to avoid having the UAS/drone classified as a threat.

### Responsible Party

- Project Area jurisdictions

### Partners

- WPAFB
- FAA
- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy LAS-2D

### Create a UAS operational procedures brochure.

The WPAFB Partnership Committee should develop an operational procedures brochure to advance awareness of drone regulations. The brochure can include:

- Common flight paths at WPAFB;
- Drone restriction areas;
- Educational information;
- Points of contact;
- Useful apps and websites; and
- Information on where to upload drone sightings.

The brochure should be placed in easily accessible and visible locations such as park centers, visitor areas, the Chamber of Commerce, and other entities/organizations that serve the public. The brochure should also be made publicly available as a downloadable PDF with hyperlinks to email contacts and access to relevant websites.

#### Responsible Party

- WPAFB Partnership Committee

#### Partners

- Other public agencies as needed

**Strategy Types**

**Timeframe**


**Priority**


## Strategy LAS-2E

### Promote UAS/drone use education through apps and websites.

The WPAFB Partnership Committee can enhance its websites to include a downloadable PDF of the UAS operational procedures brochure and helpful links to get recreational and professional UAS/drone users into successful flight situations.

Useful websites include the FAA's B4UFLY (also available as an app at https://www.aloft.ai/download/) and the Know Before You Fly website (knowbeforeyoufly.org), which was created in partnership with the FAA, the Academy of Model Aeronautics (AMA), and the Association for Unmanned Vehicle Systems International (AUVSI). The sites help educate prospective UAS users about safe and responsible operations and designated safe flying locations around airports.

#### Responsible Party

- WPAFB Partnership Committee

#### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

## Strategy LAS-2F

### Create a website to upload and document UAS sightings.

A dedicated, easily accessible web page or app for reporting and documenting sightings of illegal drone use promotes safe skies and contributes to protecting flight paths for general aviation and military aircraft.

As the proliferation of UAS use increases, illegal drone use should be reported, and having an accessible and up-to-date database of sightings supports authorized UAS users and safe airspace.

**Responsible Party**

- WPAFB Partnership Committee

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Additional Relevant Strategies

### COM-1A Appoint or designate a community planning liaison officer.

A community planner can support the education and awareness aspect by participating in events, coordinating with regional agencies, and staying up to date on UAS regulations.

### COM-5E Partner with media outlets.

Media outlets are great resources to educate the public, especially drone operators, about the importance of respecting airspace restrictions and the potential safety risks associated with flying drones near military installations.

# Water Quality/Quantity
## Issues and Strategies

**Issue WQQ-1**

**The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.**

Huffman Dam is one of five flood-control dams built in 1921 to protect downstream communities from flooding. It was part of the MCD response to the catastrophic Great Dayton Flood of 1913.

**Strategy WQQ-1A**

**Consult with flood protection and watershed experts.**

The Miami Conservancy District should partner with WPAFB and WPRCOG to hire qualified experts to analyze Huffman Dam and the Mad River watershed to propose strategies to reduce flood risk to WPAFB and the surrounding communities. It is possible that just rehabbing and preserving Huffman Dam will not result in the desired reduction of flood risk.

The existing conduits through the dams do not allow staff to increase or decrease flow rates manually. This effort should study if major changes to the dam's outlet works are necessary to reduce flood risks. Many changes in the watershed upstream of Huffman Dam have occurred since 1922. This effort should analyze the watershed to determine if the storage volume in the Huffman Storage Basin is adequate. This effort could lead to analyzing and studying the feasibility of additional flood control measures. Determine if the changes to CJ Brown Reservoir changes to Huffman Dam, changes to all five dams, additional off-channel flood storage or other solutions help reduce critical flood risks.

### Responsible Party

- Miami Conservancy District

### Partners

- WPRCOG
- WPAFB
- Other public agencies as needed

### Strategy Types

### Timeframe


### Priority

## Strategy WQQ-1B

**Appoint or hire a dedicated grant writer(s).**

The Miami Conservancy District should partner with WPAFB and WPRCOG to identify and hire or contract professionals to focus on grant writing and fundraising efforts, working in collaboration with the MCD to secure financial support for restoration and ongoing maintenance.

A broad portfolio should include pursuing government grants, private donations, and partnerships to secure the financial resources needed for restoration and maintenance.

### Responsible Party

- WPRCOG

### Partners

- Miami Conservancy District
- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Strategy WQQ-1C

**Consult with preservation organizations.**

The Miami Conservation District should collaborate with local and national preservation organizations to tap into their expertise, resources, and best practices to assist in identifying strategies to preserve, restore, and maintain Huffman Dam and the other four dams under the purview of MCD.

### Responsible Party

- Miami Conservation District

### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

## Strategy WQQ-1D

**Explore funding options.**

Federal funding sources are likely available for needed dam improvements. These include programs such as the DoD's DCIP.

A dedicated grant writer or team can support pursuing, writing, executing, and if awarded, initial implementation of the grant.

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Strategy WQQ-1E

**Pursue partnerships.**

WPRCOG can partner with private businesses or nonprofit organizations that may be interested in supporting the preservation and improvement of Huffman Dam. These partnerships could bring additional revenue streams to improve infrastructure through donations, fundraisers, and overall awareness.

### Responsible Party

- WPRCOG

### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

## Strategy WQQ-1F

### Develop a preservation plan.

The MCD can develop a publicly available preservation plan that outlines the dams' historical significance and the MCD's purpose to include the district's preservation priorities. This plan should guide the restoration efforts while respecting the dam's heritage.

The plan development phase should include engagement with local government agencies, community organizations, and residents to gather input and support for restoring and improving facilities within the MCD. Forming a task force or advisory committee to oversee the project should be considered.

The plan should establish a maintenance schedule and allocate resources for ongoing upkeep to ensure the dam remains in good condition in the future. The plan could be a more detailed breakdown of the MCD's Capital Improvement Plan.

The plan will guide the restoration and rehabilitation of the dam infrastructure while preserving the district's historical and architectural significance. All repairs and improvements should adhere to preservation standards and best practices.

The preservation plan, associated maintenance schedule, and Capital Improvement Plan aid in:

- Pursuing grants,
- Increasing advocacy for private donations, and
- Supporting partners' abilities to demonstrate the objectives and tangible needs of fundraising efforts.

#### Responsible Party

- Miami Conservancy District

#### Partners

- WPAFB Partnership Committee
- Other public agencies as needed

#### Strategy Type

#### Timeframe

Mid

#### Priority

Medium

**Issue WQQ-2**

**Public concern exists over groundwater chemicals from WPAFB.**

Public concerns have emerged about potentially leaching harmful chemicals from WPAFB into the surrounding groundwater. Some of these chemicals, possibly including PFAS, which was often used in firefighting foams, have been identified as being of particular concern due to their potential health impacts and environmental persistence.

**Strategy WQQ-2A**

**Prevent further groundwater contamination.**

WPAFB should continue to implement prevention measures through its active restoration program, which addresses PFAS compounds and other chemicals of concern in soil, surface water, stormwater, and groundwater contamination. This includes ensuring safe chemical storage and handling, implementing pollution prevention programs, maintaining groundwater monitoring programs to track contamination levels and verify the effectiveness of remediation efforts, and sharing the monitoring data with the public.

WPAFB should continue actively engaging with the U.S. EPA, Ohio Environmental Protection Agency (OEPA), and the City of Dayton in investigation and remediation activities.

### Responsible Party

- WPAFB

### Partners

- Environmental Protection Agency
- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy WQQ-2B

### Enhance communication protocols.

WPAFB's Public Affairs Office can enhance the base's community-facing communication channels to keep the community apprised of WPAFB actions and federal guidance for managing and mitigating the PFAS compounds. Examples include creating easily accessible web pages, providing up-to-date media releases, and organizing public meetings to discuss steps to mitigate PFAS compounds in the region.

The U.S. EPA is undertaking a review and will release a determination of the Comprehensive Environmental Response, Compensation, and Liability Act. The determination will likely influence the Air Force's steps in the restoration and mitigation of hazardous chemicals.

Additionally, WPAFB should:

- Establish clear and open lines of communication with the public,
- Provide regular updates on groundwater testing, contamination levels, and remediation efforts, and
- Use multiple communication channels, including public meetings, websites, and social media.

#### Responsible Party

- WPAFB

#### Partners

- WPAFB Partnership Committee
- News and social media outlets

#### Strategy Type

#### Timeframe


#### Priority

## Strategy WQQ-2C

**Advocate for legislation to protect water sources.**

Chemical manufacturing, storage, and transportation are important revenue and job producers across the nation. However, occurrences such as the train derailment in East Palestine, Ohio, remind residents of the adverse effects that can happen when hazardous chemicals are released into the environment. The State and the region should advocate for statewide legislation to protect the water resources in the State. Strong regulations, impact fees and fines, and corporate responsibility often lead to best practices.

Legislation should focus on policies that strengthen regulations regarding chemical storage, handling, and disposal, with a focus on preventing future contamination.

### Responsible Party

- State House and Senate elected officials

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe

Short

### Priority

Medium

## Strategy WQQ-2D

**Enhance outreach efforts.**

WPAFB can:

- Continue to engage with the local community at Restoration Advisory Board meetings to address their concerns and gather input on remediation plans, actively involving residents, local leaders, and environmental groups in the decision-making process;
- Continue to educate the public about the risks associated with groundwater contamination, the chemicals involved, and potential health effects;
- Continue its support of and participation in community health studies to investigate potential health impacts of groundwater contamination;
- Continue to share the results with the public and incorporate findings into remediation plans;
- Maintain collaboration with communities to develop resiliency plans that address potential long-term impacts of groundwater contamination and ensure preparedness for any future events;
- Continue to ensure strict compliance with federal, state, and local environmental regulations; and
- Remain collaborative with regulatory agencies to enforce cleanup requirements and transparent reporting.

### Responsible Party

- WPAFB

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Development Strategies

These strategies actively tackle economic development and growth impacts, recognizing that communities and military installations tend to expand over time. The location and accessibility of transportation networks, recreational facilities, and economic centers play significant roles in how communities and installations interact. Given that land resources are limited, development often aims to rejuvenate existing areas or establish new commercial and residential zones. This section outlines strategies aimed at creating opportunities to limit encroachment on military operations while fostering stronger cooperation between the military and the community.

# Anti-Terrorism/Force Protection
## Issues and Strategies

**Issue AT-1**

**There is potential for drones to impact WPAFB.**

The advancement and accessibility of drones, or UAS technology, present potential safety and security concerns for WPAFB.

**Strategy AT-1A**

**Advocate for the creation of state legislation.**

Research, development, and flight activities occur in various areas on the base. The use of drones to explore and navigate the base creates compatibility concerns. Legislation should include military installations as critical infrastructure and implement fines, fees, and prosecution in response to drone offenses.

The WPRCOG and state representatives can advocate and advance legislation to protect military installations and operational areas from UAS surveillance.

### Responsible Party

- State House and Senate elected officials

### Partners

- WPRCOG
- Other public agencies as needed

**Strategy Type**

**Timeframe**

Short

**Priority**

Medium

## Strategy AT-1B

**Establish, advertise, and enforce no-fly zones for recreational UAS users.**

The communities around WPAFB enjoy a robust variety of outdoor recreational public spaces, including parks, rivers, dams, and historical areas. The Partnership Committee should collaborate to establish and disseminate information about these no-fly zones.

While no-fly zones exist around airports due to FAA guidelines, they may not be known to recreational users.

Public spaces should include signage to remind users that an area is a no-fly zone and that drone use is prohibited. Signage can include QR codes and sources where UAS operations are safe and do not interfere with military sites or aircraft flight paths.

Partners can conduct public awareness campaigns during social events to inform the local community about the risks of flying drones near the base and the legal consequences of doing so.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- News and social media outlets
- Other public agencies as needed

### Strategy Types

### Timeframe


### Priority


## Strategy AT-1C

**Implement best practices.**

WPAFB should conduct a risk assessment of UAS use around the base. Concurrently, the base should collect and review information and best practices occurring throughout the nation at other military bases and agencies facing UAS-related incursions.

Once a risk assessment is complete and a threat level is assessed, relevant best practices, such as deterrence or detection, can then be adopted or applied at WPAFB if deemed necessary.

### Responsible Party

- WPAFB

### Partners

- USAF
- Other federal and public agencies as needed

### Strategy Type

### Timeframe


### Priority

## Strategy AT-1D

### Establish a UAS working group.

Collaboration to ensure flight safety around WPAFB is a low-cost and efficient way to reduce hazards within the HAFZ. The working group, which can be a subset of the Partnership Committee, can:

- Continuously review and adapt airspace management regulations to keep pace with evolving drone technologies and changes in military airspace needs;
- Educate the public about the rules and penalties for non-compliance;
- Ensure strict adherence to federal and state regulations governing drone operation;
- Establish altitude restrictions for commercial drones to ensure they operate at safe altitudes, well below those used by military aircraft;
- Establish close coordination between civil aviation authorities, commercial drone operators, and military aviation authorities to ensure the safe integration of commercial drones into shared airspace;
- Foster a positive relationship with the local community to encourage responsible UAS use and reporting of suspicious activity;
- Partner with local communities to share UAS awareness materials; and
- Promote the use of geofencing technology to establish no-fly zones around WPAFB and training areas to prevent drones from entering restricted airspace.

#### Responsible Party

- State House and Senate elected officials

#### Partners

- Other public agencies as needed

#### Strategy Types

#### Timeframe

Short

#### Priority

Medium

## Strategy AT-1E

### Develop a UAS plan.

WPAFB should create a comprehensive UAS action plan. The plan can include:

- A clear and comprehensive incident response plan for dealing with unauthorized drones. This portion should involve coordination with law enforcement, security personnel, and appropriate authorities;
- Strategies to deploy counter-drone technology to detect, track, and mitigate unauthorized drone activity. This may include systems for jamming, capturing, or redirecting rogue drones;
- Investment in advanced surveillance systems, such as radar and cameras, to monitor the airspace around the base. This can help in early detection of unauthorized drones;
- Investing in research and development to stay ahead of evolving drone technology and develop more effective counter-UAS solutions;
- Implementation of systems to identify drones in the vicinity, allowing for quick response and tracking of operators;
- Training security personnel to recognize and respond to unauthorized drone activity effectively;
- Use of geofencing technology to create virtual boundaries that prevent drones from entering sensitive areas without proper authorization; and
- Working closely with the FAA and other relevant authorities to develop and enforce regulations specific to the base's needs.

#### Responsible Party

- WPAFB

#### Partners

- FAA
- WPAFB Partnership Committee UAS/drone working group
- Other public agencies as needed

#### Strategy Type

#### Timeframe

Mid

#### Priority

Medium

# Land Use
## Issues and Strategies

**Issue LU-1**

**There are inconsistencies in the noise regulations within the local zoning codes.**

Regulations for noise-sensitive land uses within noise contours are in the Airport Zoning Regulations but not mirrored in local government zoning regulations. This can create inconsistencies in information and guidance conveyed to the public and development community by local government planning staff.

**Strategy LU-1A**

**Adopt the 2022 AICUZ Study noise contours.**

The 2022 AICUZ Study promotes compatible uses around the base and assess land use in the noise and safety zones.

Local jurisdictions should formally adopt and incorporate the noise zones into land use planning documents and supporting tools.

### Responsible Party
- WPRCOG
- Clark, Greene, and Montgomery Counties

### Partners
- Other public agencies as needed

### Strategy Type


### Timeframe



### Priority


## Strategy LU-1B

### Adopt the aircraft noise land use compatibility guidelines.

The DoD has updated its land use compatibility guidelines over the years. The current version has been simplified and adopted by all the Armed Forces.

Local jurisdictions can leverage these regulations to promote compatible development. The guidelines, with respect to aircraft noise, encourage residential development outside the 65 dB DNL noise zones [and] encourage residential permit requests inside the 65 dB DNL and greater noise zones and include documentation stating no viable alternative is available.

#### Responsible Party

- WPRCOG
- Clark, Greene, and Montgomery Counties

#### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Short

**Priority**

Medium

## Strategy LU-1C

### Create a future land use plan.

The surrounding community partners should embark on a future land use plan. The plan should, at minimum, identify and update existing land use, proposed future projects, and the community's long-term growth objectives.

The area should cover the HAFZ or the entirety of the imaginary surfaces. In consultation with WPAFB, additional areas of concern can be identified.

The plan can only cover areas that are agreed upon by each respective partner. Therefore, if a partner opts out, that community would not be part of the future land use plan.

The plan should incorporate existing regulations and identify areas of regional growth, shared opportunities, and economic centers compatible with flight operations.

The plan, once adopted, should be incorporated into existing comprehensive plans and become a resource for future proposed developments and redevelopments to encourage a unified growth plan for the region and to ensure the long-term viability of WPAFB.

#### Responsible Party

- WPRCOG
- Clark, Greene, and Montgomery Counties

#### Partners

- WPAFB
- Other public agencies as needed

**Strategy Type**

**Timeframe**

Mid

**Priority**

Medium

## Strategy LU-1D

### Establish a process checklist.

The adoption of aircraft noise guidelines can assist participating jurisdictions in establishing a clear process to allow for developments to be treated equitably during the review process. Possible steps to establish an inclusive process encompass the following:

- Create or update online platforms where zoning regulations are displayed, ensuring that Airport Zoning Regulations and local government regulations are easily accessible and clearly consistent.
- Conduct periodic reviews to ensure that local zoning regulations remain consistent with Airport Zoning Regulations, especially if there are changes or updates to the latter.
- Develop a process to track and ensure new subdivision plats include disclosures.
- Encourage the use of noise-reduction strategies in construction and renovation to minimize aircraft noise inside structures and residences.
- Enhance collaboration between WPAFB and local communities to ensure ongoing communication, particularly when regulatory changes or updates are being considered.
- Ensure harmonized noise-sensitive land use regulations are integrated into the development review and approval process.
- Establish a mechanism for developers and the public to provide feedback or seek clarification on regulations. This can help identify areas of confusion or potential inconsistency.
- Initiate an educational campaign to inform the public, developers, and other stakeholders about the updated regulations and the importance of adhering to noise-sensitive guidelines.
- Require property transactions within noise contours to include a disclosure about the noise-sensitive land use regulations to ensure that potential buyers or developers are aware of the regulations from the outset.

#### Responsible Party

- WPAFB partner communities

#### Partners

- Other public agencies as needed

#### Strategy Type

#### Timeframe


#### Priority

| Additional Relevant Strategies | |
|---|---|
| | **COM-3A Develop an aircraft noise fact sheet.** |
| | A fact sheet provides valuable information for developers and residents whose parcels are within the 65 dB DNL and greater noise zones. |
| | **COM-5B Create a zoning regulations brochure.** |
| | The brochure includes sound-reduction strategies and best practices for planning and living within a noisy environment. |
| | **COM-5C Locally adopt the Airport Zoning Regulations.** |
| | Formal adoption of the noise contours provides clear guidance to residents and developers on how to build within the WPAFB aircraft noise zones. |
| | **COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.** |
| | Jurisdictional adoption of the aircraft noise regulations should be uniform and applied fairly throughout each noise zone around WPAFB. |

**Issue LU-2**

**There is a lack of airfield safety zone regulations in local zoning codes.**

Regulations for compatible land uses within the CZ, APZ I, and APZ II are absent from local zoning regulations. Land uses are included in the Airport Zoning Regulations and are primarily focused on noise compatibility. The runway protection zone does not encompass the entirety of the safety zones.

**Strategy LU-2A**

**Formally adopt the safety zone compatibility guidelines per APZs.**

Clark County's Comprehensive Plan identifies the southeastern portion of the County, where APZ I and APZ II exist, as low-density agriculture. The County can adopt the safety zones and respective compatibility guidelines.

They could also be adopted as part of a broader WPAFB character area, which could include the facilitation of easements to promote low-intensity agriculture use and open space in perpetuity.

In Greene County, APZ I and APZ II exist outside the borders of WPAFB. Land uses in these areas include mineral extraction, storage, conservation, and recreation. Greene County can adopt the safety zone compatibility guidelines into its Land Use Plan.

### Responsible Party

- Clark County
- Greene County

### Partners

- Other public agencies as needed

**Strategy Types**

**Timeframe**

Short

**Priority**

Medium

## Strategy LU-2B

**Formally adopt the safety zone compatibility guidelines.**

The southern safety zones are primarily on WPAFB property. The parts that are not on base are located within park space and roadways. While that tends to lead to compatible development, the jurisdictions should still adopt the land use compatibility guidelines to ensure that all uses, future uses, or transit uses (such as a citywide park event) do not conflict with the compatibility recommendations.

### Responsible Party

- Montgomery County
- Dayton

### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Short

**Priority**

Medium

## Strategy LU-2C

**Socialize the need for compatibility zones.**

In good planning situations, many informal actions occur. These actions promote compatible development. Consequently, this can also lead to confusion regarding the planning process and how to proceed with variance requests and can generally lead to incompatible development occurring due to perceived understandings that may not align properly with the compatibility guidelines.

WPAFB can socialize the need for a uniform approach to land use decisions with the various jurisdictions through discussions with planning staff, attending planning and zoning boards, and providing briefings on the benefits of compatibility planning around an active military base.

### Responsible Party

- WPAFB

### Partners

- WPAFB Partnership Committee
- Other public agencies as needed

**Strategy Type**

**Timeframe**

Ongoing

**Priority**

Medium

**Issue LU-3**

**The 1997 Airport Zoning Regulations do not reflect the latest DoD compatible land use guidance for airfield safety zones and imaginary surfaces.**

The 1997 Airport Zoning Regulations are over 25 years old and need to be updated using digital technology to ensure they correspond with current DoD land use guidance for development within airfield safety zones and imaginary surfaces. The maximum buildable heights within the Airport Zoning Regulations do not reflect the complete boundaries of current imaginary surfaces or the dynamic nature of how maximum buildable heights are calculated.

**Strategy LU-3A**

**Update regulations to use the current compatibility guidelines.**

Update the regulations to follow the current DoD land use compatibility guidelines for the noise zones in order to maintain compatibility within the zoning districts.

Outside the runway protection district, the main focus of the regulating districts is to promote sound-reduction strategies in building design to reduce the amount of aircraft sound heard within each structure. Various modifications and slight clarifications have occurred over the 20-plus years since the adoption of the 1997 regulations.

### Responsible Party

- Clark, Greene, Miami, and Montgomery Counties

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe

Short

### Priority

Medium

## Strategy LU-3B

### Update the Airport Zoning Regulations.

The Airport Zoning Regulations have been a great tool for promoting compatible development around WPAFB. They were established in 1975, updated in 1997, and need to be updated again.

An update should include revisiting and revising the zones, permitted and prohibited land uses, and height restrictions, as well as incorporating updates to the compatibility guidelines.

The local communities should adopt the updated planning zones within their respective land use plans and provide a visualization of these noise contours on online geospatial mapping tools.

#### Responsible Party

- Clark, Greene, Miami, and Montgomery Counties

#### Partners

- WPRCOG
- Other public agencies as needed

#### Strategy Types

#### Timeframe


#### Priority


## Additional Relevant Strategies

### COM-2A Develop formal coordination processes with regional planning staff.

Establish a formal review process between jurisdictions and WPAFB to provide feedback in a timely manner.

### COM-2D Transfer the Airport Zoning Board into the WPCOG.

An entity that comprises all jurisdictions within the area of concern establishes synergies and enhances inclusivity.

### COM-5A Develop a public education campaign for Airport Zoning Regulations.

Inclusivity is a precursor to collaboration, and together, unified communities can promote compatible growth around WPAFB, boosting the regional economic output.

### COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.

If the board is broadened to include all jurisdictions, adopting and owning the zoning regulations at the local level is more likely to occur. This may also be instrumental in the adoption and implementation of the existing zoning regulations and future updates.

| Issue LU-4 | **There are not uniform height regulations in all jurisdictions around WPAFB.** |
|---|---|
| | Height regulations in local zoning codes reference the FAA requirements or the Airport Zoning Regulations but lack transparency and clarity on how these requirements are administered. |

## Strategy LU-4A

**Develop a 3D GIS model.**

Technological advances allow spatial modeling and project submittals to visually see the impact of structures and whether they impede the glide slopes or imaginary surfaces around airfields.

The GIS model should be based on the heights and slopes of the imaginary surfaces. The model can accurately automate calculating maximum buildable heights on any given property to preserve the critical airspace surrounding WPAFB. This model could be used early in the development review process for evaluating development applications.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- Other public agencies as needed

### Strategy Type

### Timeframe

Mid

### Priority

Medium

## Strategy LU-4B

### Create a height hazard calculator.

Establish a public-facing tool to show where height limitations exist. Creating a height hazard calculator could assist with informing the public and developers about how to determine maximum buildable heights before submitting a development proposal This tool should be based on a 3D GIS model that makes it simple for the public to use.

The tool can be used to:

- Select parcel location,
- Identify imaginary surfaces,
- Understand maximum buildable height,
- Quickly determine restrictions, and
- Provide jurisdiction points of contact.

**Responsible Party**

- WPAFB Partnership Committee

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Mid

**Priority**

Medium

## Strategy LU-4C

### Create a crane mapping tool.

This can be in addition to or separate from LU-4B. This tool should be built to support construction efforts that require the use of a crane. Most companies are aware of contact with the FAA around airports, but the procedure for coordinating with military air bases is more complex.

A web-based temporary crane mapping tool would display simple information about crane operations throughout the region. This tool would assist airfield managers in identifying obstructions and give airspace users a better idea of potential vertical hazards in the region.

Information collected should include construction timelines and the height of cranes during various phases.

**Responsible Party**

- WPAFB Partnership Committee

**Partners**

- FAA
- Other public agencies as needed

**Strategy Type**

**Timeframe**

Mid

**Priority**

Medium

## Strategy LU-4D

### Amend local codes.

Amending the local codes to incorporate requiring the use of the tools developed in strategies LU-4A, LU-4B, and LU-4C promote compatible growth in the region, streamline the review process, reduce unknown variables to development, and promotes compatible growth in the region.

**Responsible Party**

- WPAFB Partnership Committee

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Strategy LU-4E

### Enhance awareness of Part 77.

Enhancing awareness begins with increased public outreach. WPAFB, along with the Partnership Committee, can create awareness regarding the Code of Federal Regulations Title 14 Part 77, which establishes standards and notification requirements for objects affecting navigable airspace.

There should be an additional awareness campaign to educate the CUP Project Area constituents about FAA requirements, whom to contact at WPAFB, and additional communication and coordination partners dependent on the location of the development.

**Responsible Party**

- WPAFB

**Partners**

- WPAFB Partnership Committee
- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

| Additional Relevant Strategies | |
|---|---|
| | **COM-1A Appoint or designate a Community Planning Liaison Officer.** |
| | An official position focused on compatibility planning and community engagement will provide continuity across jurisdictions. |
| | **COM-2D Transfer the Airport Zoning Board into the WPCOG.** |
| | Hosting the tool on one web page allows the regulations to be uniformly applied and reduces the cost of hosting a web portal and associated maintenance. |
| | **COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.** |
| | Existing zoning regulations and future updates should be located on each County's GIS portal to allow residents to gain quick access. Parcels can include fields with attributes to identify if they have height restrictions (and how high) as well as if they are within an identified noise or safety zone. |

**Issue LU-5**

**Utility pole lines run along the northern portion of the airfield, and trees obstruct the imaginary surfaces.**

Utility pole lines at the northern portion of the airfield present a danger to aircraft taking off and landing due to their height, which causes obstructions. Additionally, these lines pose further hazards through potential electromagnetic interference and visual distractions. Similarly, trees on private property obstruct the imaginary surfaces required for safe military operations. These obstructions interfere with flight paths and other critical operational areas, highlighting the incompatibility between certain civilian land uses and military needs outside the fence line.

**Strategy LU-5A**

**Bury utility lines underground.**

Engage with relevant stakeholders, including utility companies and aviation authorities, to explore options for relocating, burying, or mitigating the hazards posed by utility lines. If necessary, conduct a comprehensive risk assessment and feasibility study to evaluate the cost-effectiveness and safety implications of potential mitigation measures, ensuring informed decision-making and proactive risk management.

### Responsible Party

- WPAFB

### Partners

- WPAFB Partnership Committee
- Other public agencies as needed

### Strategy Type

### Timeframe

Mid

### Priority

High

## Strategy LU-5B

**Implement a comprehensive strategy to address tree obstructions near WPAFB's imaginary surfaces.**

This strategy should involve collaborating with property owners to trim or remove encroaching trees, conducting regular surveys to identify emerging obstructions, engaging in outreach with local authorities and aviation stakeholders to raise awareness, and enforcing zoning regulations and airspace protection measures. Additionally, establish a coordinated approach with communities and property owners for voluntary compliance, incentives, and education, while developing an airspace protection program for monitoring, reporting, and enforcement to prevent new obstructions and enhance flight safety. Strengthen collaboration between WPAFB, regulatory agencies, and aviation stakeholders for comprehensive and effective management of tree obstructions.

### Responsible Party

- WPAFB

### Partners

- WPAFB Partnership Committee
- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

# Noise
## Issues and Strategies

**Issue NO-1**

**There is incompatible development within the noise contours.**

Noise-sensitive land uses, such as residential, educational, and childcare facilities, places of worship and public assembly, medical facilities, and long-term care facilities that are subject to low-level aircraft overflight, can experience noise levels that impact quality of life.

**Strategy NOI-1A**

**Establish a zoning overlay district.**

The communities surrounding WPAFB should create zoning overlay districts that apply specific land use regulations within noise contours, even if the underlying zoning allows for different land uses. The overlay districts can be tailored to address noise concerns.

These overlay districts function similarly to the airport planning regulation districts as they are tailored to each jurisdiction.

The development of a map focused on the jurisdictional boundary that includes a noise overlay will quickly allow developers and residents who seek to build or renovate to visually identify if the parcel is within the overlay.

### Responsible Party

- WPRCOG

### Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

### Strategy Type

### Timeframe

Short

### Priority

Medium

## Strategy NOI-1B

### Require noise disclosure forms.

Residential and commercial properties should include on the bill of sale or rental contract a noise disclosure form identifying the location of the parcel and which noise zone impacts the development rights on the parcel. Public awareness can inform individuals about the noise conditions in the area.

The disclosure form should include the various noise zones and a place to identify which zone the parcel is located in. If the parcel is within two noise zones, the higher of the two noise zones (more restrictive) should prevail. Additional resources, such as common sound-reduction strategies, should be listed to allow for visualization of the existing structure to determine if the implementation of sound-reduction techniques has occurred.

It is important to note in the disclosure that sound cannot be mitigated outside structures and that existing structures that do not include sound-reduction techniques are more susceptible to disruptions and disturbances than buildings with noise-reduction insulation and features.

**Responsible Party**

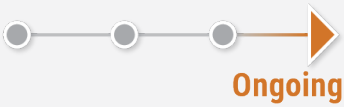
- WPAFB partner communities

**Partners**

- Chamber of Commerce
- Realtor associations
- Other public agencies as needed

**Strategy Types**

**Timeframe**




**Priority**


## Strategy NOI-1C

### Enforce regulations.

The existing noise regulations found within the Airport Zoning Regulations require construction techniques to reduce sound levels within structures. Requiring and monitoring the implementation of these strategies during initial construction and for all renovations supports residents and commercial enterprises.

A monitoring process (checklist) should be established to ensure that sound-reduction techniques are used. Additionally, a fact sheet of best practices should be available for each planning jurisdiction to provide an understanding of the strategies and potential costs associated with the development.

Additionally, the use of conditional use permits to allow development within noise contours under specific conditions and with noise mitigation measures in place should occur.

**Responsible Party**

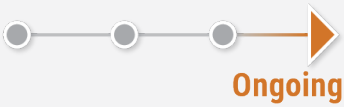
- WPAFB partner communities

**Partners**

- Other public agencies as needed

**Strategy Type**

**Timeframe**




**Priority**

## Strategy NOI-1D

### Create a best practices pamphlet with sound reduction strategies.

Create a sound-reduction strategy pamphlet that is available at all jurisdictional planning offices to generate a better understanding of living within the aircraft noise environment.

The pamphlet should include best practices, including techniques to reduce sound. This may include insulation, noise-resistant building materials, and soundproofing measures.

**Responsible Party**

- WPAFB partner communities

**Partners**

- Other public agencies as needed

**Strategy Types**

**Timeframe**


**Priority**


## Strategy NOI-1E

### Implement a public education campaign.

Direct communication with residents within the operational noise footprint can help improve relations between WPAFB and residents. Many community members are unaware of how sound propagates throughout the year, and residents, businesses, and visitors are often unaware, startled, or disturbed by single events, such as an aircraft flyover.

This strategy can be implemented by having booths at public events that anticipate drawing large crowds and maintaining a health website with aircraft noise information.

Open and approachable dialogue should occur to:

- Allow discussion of land use within noise contours;
  - Encourage public input and involvement in decision-making processes, such as planning board meetings.

**Responsible Party**

- WPAFB

**Partners**

- WPAFB Partnership Committee
- Other public agencies as needed

**Strategy Types**

**Timeframe**


**Priority**

## Strategy NOI-1F

**Create a noise awareness buffer.**

Development of a noise awareness buffer around the noise contours (for example, a one-mile buffer) would provide an additional layer of protection and awareness for community members who live near WPAFB but outside the 65 dB DNL and greater noise contour.

It would also acknowledge that aircraft noise does not stop at the contour line but continues to propagate outward. This will assist community members who request additional information regarding why they experience aircraft noise when outside the noise contours.

### Responsible Party

- WPRCOG

### Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

### Strategy Type

### Timeframe

Short

### Priority

Medium

# Roadway Capacity
## Issues and Strategies

**Issue RC-1**

**Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.**

The level of WPAFB traffic entering/exiting the base causes congestion, affecting the surrounding road network, including residential neighborhoods.

**Strategy RC-1A**

**Conduct a public outreach campaign.**

Launch a public education campaign to inform residents and WPAFB employees about the issue, alternative routes, and the benefits of carpooling.

Involve residents of affected neighborhoods, WPAFB officials, planners from the City of Fairborn, and other stakeholders in discussions and decision-making processes that can lead to more comprehensive and accepted solutions, such as:

- Carpooling initiatives for base employees to reduce the number of vehicles during peak times;
- Dedicated turn lanes or other traffic devices, such as a traffic circle at the intersection of Kauffman Avenue and National Road, to improve traffic flow;
- Enhanced signage to guide vehicles toward less congested routes;
- If feasible, expansion of road capacity at entry points accomplished through widening roads, adding lanes, or improving intersections to accommodate increased traffic; and
- Multimodal transportation hubs that integrate different modes of transportation, such as buses, trains, and bicycles, at entry points to encourage the use of alternative transportation options.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- WPAFB
- Other public agencies as needed

### Strategy Type

### Timeframe

Short

### Priority

Medium

## Strategy RC-1B

### Conduct a Traffic Impact Analysis study.

Conduct a Traffic Impact Analysis (TIA) study to understand the primary causes, peak congestion times, and potential bottlenecks in the target area, providing data to support decision-making. The roadways to be evaluated should include Kauffman Avenue, National Road, Colonel Glenn Highway/Airway Road, and the I-675 exits to Gates 22B and 15A. The TIA should reflect that the largest backups are primarily due to operational constraints rather than just the local roads. Based on the TIA results, consider widening Kauffman Avenue if feasible and installing a changeable message sign on I-675 between US-35 and Gate 22B to alleviate congestion issues at Gate 22B. Additionally, as part of this strategy, the National Road (Grange Hall) and I-675 interchange should have enhanced traffic signal timing, improved lane configurations, and upgraded signage to ensure a smoother and safer commute for all users.

#### Responsible Party

- WPAFB Partnership Committee

#### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Mid

**Priority**

Medium

## Strategy RC-1C

### Seek federal funding.

Communities can utilize DCIP for part of the funding for the gates. The DCIP is designed to address deficiencies in community infrastructure supportive of a military installation to enhance the quality of life for military families, resiliency, or military value.

There may be other funding sources that could be utilized if the area transportation system meets certain criteria. Additional research on the issue should be completed.

#### Responsible Party

- WPRCOG

#### Partners

- Other public agencies as needed

**Strategy Type**

**Timeframe**

Mid

**Priority**

Medium

## Strategy RC-1D

**Implement transportation demand management principles.**

Consider implementing transportation demand management to assess, develop, and implement strategies and policies to reduce travel demand (specifically, single-occupancy private vehicles) or to redistribute trip generation (e.g., additional entry gates or staggered work hours/telecommuting).

Consider instituting programs that encourage telecommuting, flexible work hours, and ridesharing to reduce the number of vehicles on the road during peak times. Examples of transportation demand management strategies include:

- Charging for parking;
- Providing transit passes to students or workers;
- Promoting the use of public transportation, walking, and cycling by providing convenient facilities and encouraging residents to reduce their reliance on personal vehicles;
- Engaging in outreach to employers to increase the use of telework and compressed work weeks;
- Organizing senior shuttles to healthcare facilities, and
- Organizing vanpools.

If this is implemented, setting a schedule for periodic reviews of traffic patterns and infrastructure will ensure that solutions continue to be effective and that adjustments are made as necessary.

### Responsible Party

- WPRCOG

### Partners

- Montgomery County
- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

# Safety
## Issues and Strategies

**Issue SA-1**

**There is incompatible development inside the APZs.**

Incompatible land uses in APZ I and APZ II create potential concerns for public health, safety, and welfare in the event of an aircraft mishap.

**Strategy SA-1A**

**Adopt land use compatibility guidelines.**

Adopt the DoD land use guidance within APZ I and II.

### Responsible Party
- Dayton and Fairborn

### Partners
- WPAFB
- Other public agencies as needed

**Strategy Type**

**Timeframe**

Short

**Priority**

Medium

**Strategy SA-1B**

**Use conditional-use permits.**

Consider the use of conditional use permits to allow development within APZs under specific conditions and with strict safety measures in place. Each case should be evaluated on its individual merits.

### Responsible Party
- Clark County

### Partners
- WPAFB
- Other public agencies as needed

**Strategy Type**

**Timeframe**

Short

**Priority**

Medium

## Strategy SA-1C

### Consider land easements.

Perpetual easements can be seen as a transfer of development rights—such as "purchasing" the ability to build high-rise condos—or avigation rights.

An easement removes the potential for incompatible development, requires willing partners, and is often beneficial to existing and future landowners.

The easement is purchased as a one-time fee, providing a cash infusion to the seller. The long-term benefit beyond the existing owner is the reduction of property taxes due to the limited development potential.

#### Responsible Party

- WPAFB Partnership Committee

#### Partners

- Other public agencies as needed

#### Strategy Types

#### Timeframe


#### Priority


## Strategy SA-1D

### Enter into development agreements.

Consider using development agreements between counties and developers. These agreements can help developers and counties consider the impacts on military missions from growth in unincorporated areas.

Instituting development agreements for areas of concern should provide an additional layer of protection to promote compatible growth around the base.

The agreement must be agreed upon as a voluntary contract between a local jurisdiction and a person who owns or controls property within the jurisdiction, detailing the obligations of both parties and specifying the standards and conditions that will govern the development of the property.

#### Responsible Party

- WPRCOG

#### Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

#### Strategy Type

#### Timeframe


#### Priority

## Strategy SA-1E

**Create a buffer around the safety zones.**

Encroachment often moves all the way to the fence line. It is important to note that an aircraft mishap if a crash was to occur, is most likely to occur within the safety zones. However, various conditions could cause the actual path of a crash to shift farther out or to either side depending upon conditions.

Creating a land development buffer beyond the safety zones is advised. The buffer should promote low-density uses and activities compatible with air operations.

### Responsible Party

- WPRCOG

### Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**


## Issue SA-2

**Bird and wildlife attractants exist near the runways.**

While conservation areas surrounding WPAFB reduce the potential for development encroachment, they are also habitats for birds and wildlife that can create hazards for aircraft strikes (Bird/Wildlife Aircraft Strike Hazards).

## Strategy SA-2A

**Develop and distribute BASH educational materials.**

These materials should provide educational information to local jurisdictions and agencies in the region relative to reducing the potential for bird and wildlife attractants that may impede safe aircraft operations. Include educational materials on WPAFB and jurisdiction websites.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- WPAFB
- Other public agencies as needed

**Strategy Type**

**Timeframe**


**Priority**

**Strategy SA-2A**

## Implement BASH prevention techniques.

BASH prevention techniques include but are not limited to:

- Collaborating with aviation authorities to establish and enforce safety protocols for developments near airports, including bird strike prevention, lighting requirements, and emergency response coordination;
- Conducting regular safety audits and risk assessments to evaluate the effectiveness of safety measures and identify opportunities for improvement;
- Conducting wildlife hazard assessments to identify high-risk areas and potential attractants and using the findings to develop targeted mitigation strategies;
- Continuing the implementation of the BASH program on base;
- Developing wildlife management plans in areas prone to wildlife hazards, such as bird strikes near airports. Mitigation strategies may include habitat management or deterrent methods;
- Installing fencing and physical barriers to keep wildlife away from the runway area. These barriers can help prevent access to runways and taxiways;
- Managing vegetation along runways to reduce the presence of small mammals, which can attract predatory birds. This includes mowing, trimming, and vegetation control; and
- Using bird and wildlife deterrents, such as scare devices, pyrotechnics, and acoustic repellent systems, to discourage birds and wildlife from congregating near runways.

### Responsible Party

- WPAFB Partnership Committee

### Partners

- WPAFB
- Other public agencies as needed

### Strategy Types

### Timeframe

Ongoing

### Priority

Medium

# Dust/Smoke/Steam
## Issues and Strategies

**Issue DSS-1**

**Dust/Smoke/Steam could limit operational capabilities at WPAFB.**

Dust, smoke, and steam have the potential to reduce visibility, impair aircraft systems, and create hazardous conditions for flight operations at WPAFB.

**Strategy DSS-1A**

**Develop and implement a strategy to deal with high amounts of dust in the air.**

Develop and implement a comprehensive strategy that includes real-time environmental monitoring systems with early warning alerts, possibly upgrade ventilation with HEPA filters, and enact strict maintenance and cleaning protocols, tailored training programs, emergency response plans, collaboration with environmental agencies, and continuous feedback mechanisms. This approach will mitigate hazards from dust, smoke, and steam, ensuring safer flight operations at WPAFB.

Furthermore, communication with communities surrounding WPAFB that may present higher amounts of dust particles from industry or dirt road infrastructure may mitigate challenges associated with this issue.

### Responsible Party

- WPRCOG

### Partners

- Clark, Greene, Miami, and Montgomery Counties, and Miami Conservancy District
- Other public agencies as needed

### Strategy Type

### Timeframe


### Priority

WRIGHT-PATTERSON
COUNCIL OF GOVERNMENTS

# Matrix