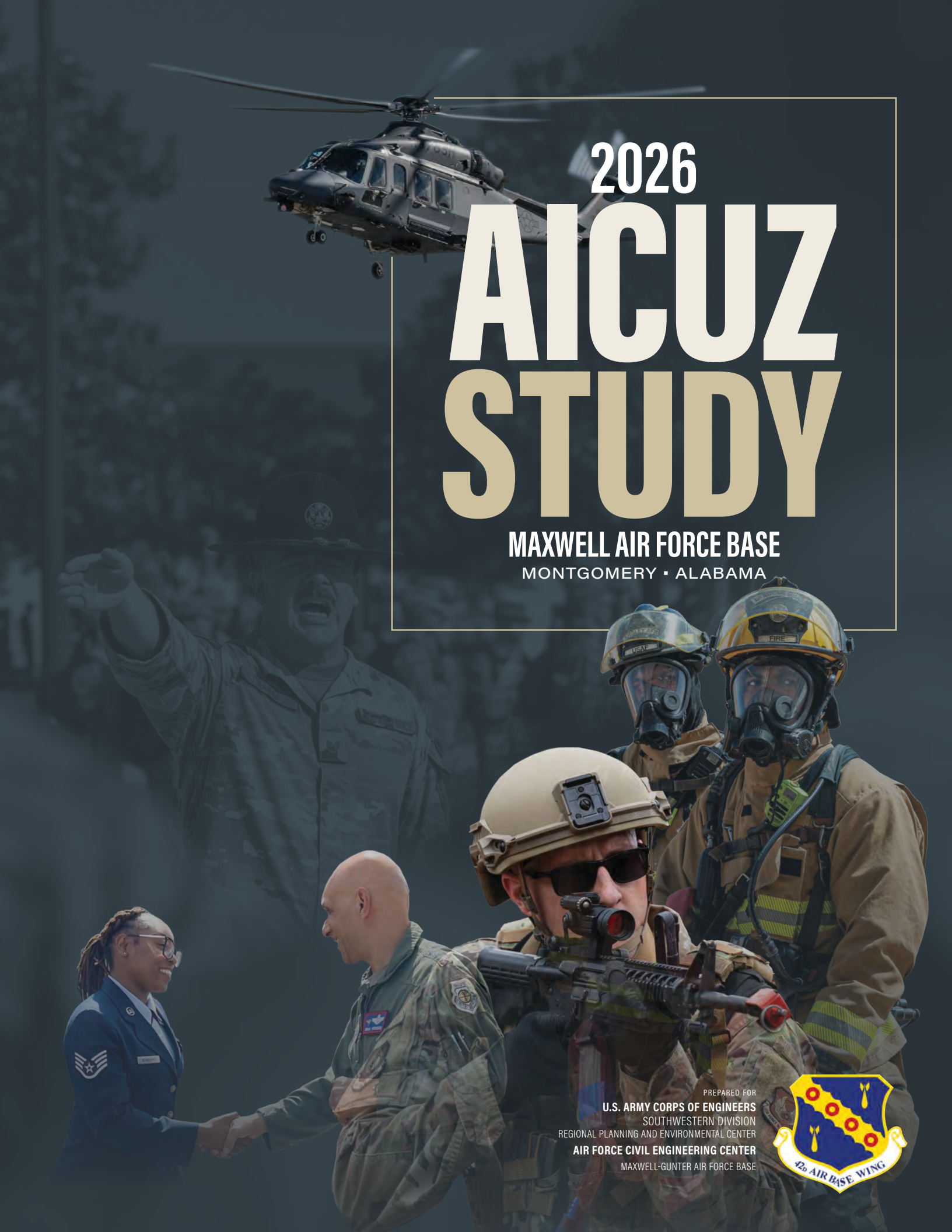

2026 AICUZ STUDY

MAXWELL AIR FORCE BASE

MONTGOMERY • ALABAMA

PREPARED FOR

U.S. ARMY CORPS OF ENGINEERS
SOUTHWESTERN DIVISION
REGIONAL PLANNING AND ENVIRONMENTAL CENTER

AIR FORCE CIVIL ENGINEERING CENTER
MAXWELL-GUNTER AIR FORCE BASE

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DEPARTMENT OF THE AIR FORCE
42D AIR BASE WING (AETC)
MAXWELL AIR FORCE BASE

MEMORANDUM FOR AREA GOVERNMENTS

FROM: 42d Civil Engineer Squadron
400 Cannon St, Bldg 1060
Maxwell AFB AL 36112

SUBJECT: Air Installation Compatible Use Zones (AICUZ) Study

1. The 2026 AICUZ Study for Maxwell Air Force Base (AFB) is an update of the installation's 2009 study. The Air Force initiated the update to include changes to the mission at Maxwell AFB, namely the shift from the C-130 to the MH-139 as the primary operating aircraft at the installation. It is a reevaluation of the installation's operational noise and safety zones. The Air Force provides this AICUZ study to aid in the development of local planning mechanisms that will protect the health, safety, and welfare of the public, as well as preserve the operational capabilities of Maxwell AFB.

2. The AICUZ Study contains a description of the affected area around the installation. It outlines the location of runway Clear Zones (CZs), Accident Potential Zones (APZs), operational noise footprint, and provides recommendations for development that is compatible with military operations. It is the Air Force's proposal that local governments incorporate these recommendations into long-range plans, zoning ordinances, subdivision regulations, building codes, and other related documents.

3. This study provides noise contours based upon the Day-Night Average Sound Level (DNL) metric. Long-range planning by local authorities involves strategies to influence present and future land uses. In accordance with DoDI 4715.13, *DoD Operational Noise Program*, the Air Force provides planning contours—noise contours based on reasonable projections of future missions and operations. Through planning contours, the AICUZ study provides a description of the noise environment for projected aircraft operations that is more consistent with the planning horizon used by state, tribal, regional, and local planning bodies.

4. The Air Force values the positive relationship Maxwell AFB has experienced with its neighbors over the years. As a partner in the process, the installation has attempted to limit noise disturbances by avoiding flights over heavily populated areas. The Air Force appreciates the cooperation of all community stakeholders in the collaborative implementation of the recommendations and guidelines presented in this AICUZ Study update.

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BRYCE J. FIACCO, Lt Col, USAF
Commander, 42d Civil Engineer Squadron

1st Ind, 42 ABW/CC

MEMORANDUM FOR AREA GOVERNMENTS

SHAMEKIA N. TOLIVER, Colonel, USAF
Commander, 42d Air Base Wing

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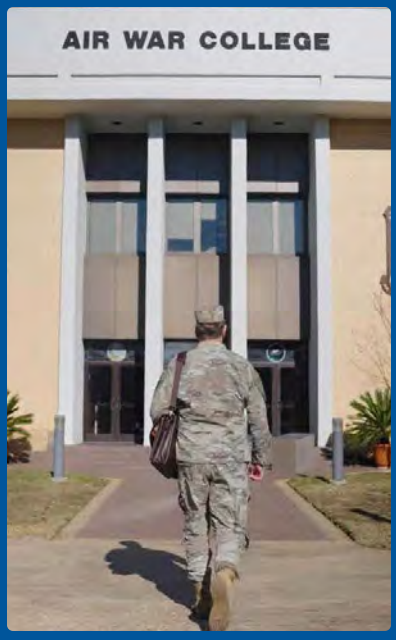
Unless otherwise noted, all photos are courtesy of the Defense Visual Information Distribution Service (DVIDS).

ABBREVIATIONS AND ACRONYMS

AARC	Alabama Association of Regional Councils
ABW	Air Base Wing
ADC	Association of Defense Communities
ADECA	Alabama Department of Economic and Community Affairs
ADNL	A-Weighted Day-Night Average Sound Level
AETC	Air Education and Training Command
AFB	Air Force Base
AFGSC	Air Force Global Strike Command
AGL	Above Ground Level
AICUZ	Air Installations Compatible Use Zones
APZ	Accident Potential Zone
ATC	Air Traffic Control
BASH	Bird Air Strike Hazard
CAP-USAF	Civil Air Patrol
CARPDC	Central Alabama Regional Planning District Commission
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CZ	Clear Zone
DAFH	Department of the Air Force Handbook
DAFI	Department of the Air Force Instruction
dB	Decibel
dBA	A-Weighted Decibel
DNL	Day-Night Average Sound Level
DoD	Department of Defense
DoDI	Department of Defense Instruction
EMI	Electromagnetic Interference
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FTW	Flight Training Wing
FAR	Floor Area Ratio
FHWA	Federal Highway Administration
GIS	Geographic Information System
HAFZ	Hazards to Aircraft Flight Zone
ICBM	Intercontinental Ballistic Missile
IFR	Instrument Flight Rules
JLUS	Joint Land Use Study
LED	Light-Emitting Diode
MOA	Memorandum of Agreement
MSL	Mean Sea Level
NLR	Noise Level Reduction
NVG	Night Vision Goggles
OLDCC	Office of Local Defense Community Cooperation
PA	Public Affairs
PUD	Planned Unit Development
SFO	Simulated Flame-Out
SLUCM	Standard Land Use Coding Manual
T&G	Touch and Go
UAS	Unmanned Aerial System
UFC	Unified Facilities Criteria
USAF	United States Air Force
VFR	Visual Flight Rules

1. INTRODUCTION

The 2026 Maxwell Air Force Base (AFB) Air Installations Compatible Use Zones (AICUZ) Study focuses on the installation's flying missions. This update presents and documents changes since the previous AICUZ study, released in 2009. It reaffirms the United States Air Force's (USAF) policy of promoting public health, safety, and general welfare in areas surrounding Maxwell AFB, while seeking development that is compatible with the defense mission. This study presents changes in flight operations since the previous study and provides noise contours and recommendations for compatible land use.



1.1 AICUZ PROGRAM

Military installations attract development, as people who work on the installation want to live nearby, while others want to provide services to installation employees and residents. When incompatible development occurs near an installation or training area, affected parties within the community may seek adjudication through political channels that could restrict, degrade, or eliminate capabilities necessary to perform the defense mission.

In the early 1970s, the Department of Defense (DoD) established the AICUZ Program to protect the health, safety, and welfare of those living and working near air installations while sustaining the Air Force's operational mission. The Air Force accomplishes this goal by promoting proactive, collaborative planning for compatible development to sustain mission and community objectives.

The AICUZ Program recommends that local land use agencies incorporate noise zones, Clear Zones (CZs), Accident Potential Zones (APZs), and Hazards to Aircraft Flight Zones (HAFZ) associated with military operations into local community planning regulations to maintain the airfield's operational requirements while minimizing impacts to residents in the surrounding community. The CZ begins at the end of the runway and is the area of highest accident potential. APZ I lies beyond the CZ and has a lower level of accident potential, while still considerable. APZ II is beyond APZ I and possesses less accident potential but still warrants land use restriction recommendations. The HAFZ is defined as the area within the Imaginary Surfaces that are described in the Unified Facilities Criteria (UFC) 3-260-01 Airfield and Heliport Planning and Design, and in Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, Subpart C, Obstruction Standards.

Cooperation between military airfield planners and community-based counterparts serves to increase public awareness of the importance of air installations and encourages the public planning process to support mission requirements and address associated noise and risk factors. As the communities that surround military airfields grow and develop, the Air Force has the responsibility to communicate and collaborate with local governments on land use planning, zoning, and similar matters that could affect the installation's operations or missions. Likewise, the Air Force has a responsibility to understand and communicate potential impacts that new and changing missions may have on the local community.

1.2 SCOPE AND AUTHORITY

1.2.1 Scope

This AICUZ Study provides Maxwell AFB's CZs, APZs, and noise zones associated with the airfield's runways to the local communities, along with recommendations for compatible land use near the installation for incorporation into comprehensive plans, zoning ordinances, subdivision regulations, building codes, and other related documents. The study analysis is based on the latest projected air operations.

1.2.2 Authority

Authority for the Air Force AICUZ Program lies in three documents:

- Department of Defense Instruction (DoDI) 4165.57, *Air Installations Compatible Use Zones,* which establishes policy, assigns responsibilities, and prescribes procedures for air installations.
- Department of the Air Force Instruction (DAFI) 32-1015, *Integrated Installation Planning,* applies to all Air Force installations located in the United States and its territories. This DAFI outlines the AICUZ program objectives and responsibilities.
- Department of the Air Force Handbook (DAFH) 32-7084, A*ICUZ Program Management,* provides installation AICUZ Program Managers with specific guidance concerning the organizational tasks and procedures necessary to implement the AICUZ Program. It is written in a "how-to" format and includes the land use compatibility tables used in AICUZ studies.

1.3 PREVIOUS AICUZ EFFORTS AND RELATED STUDIES

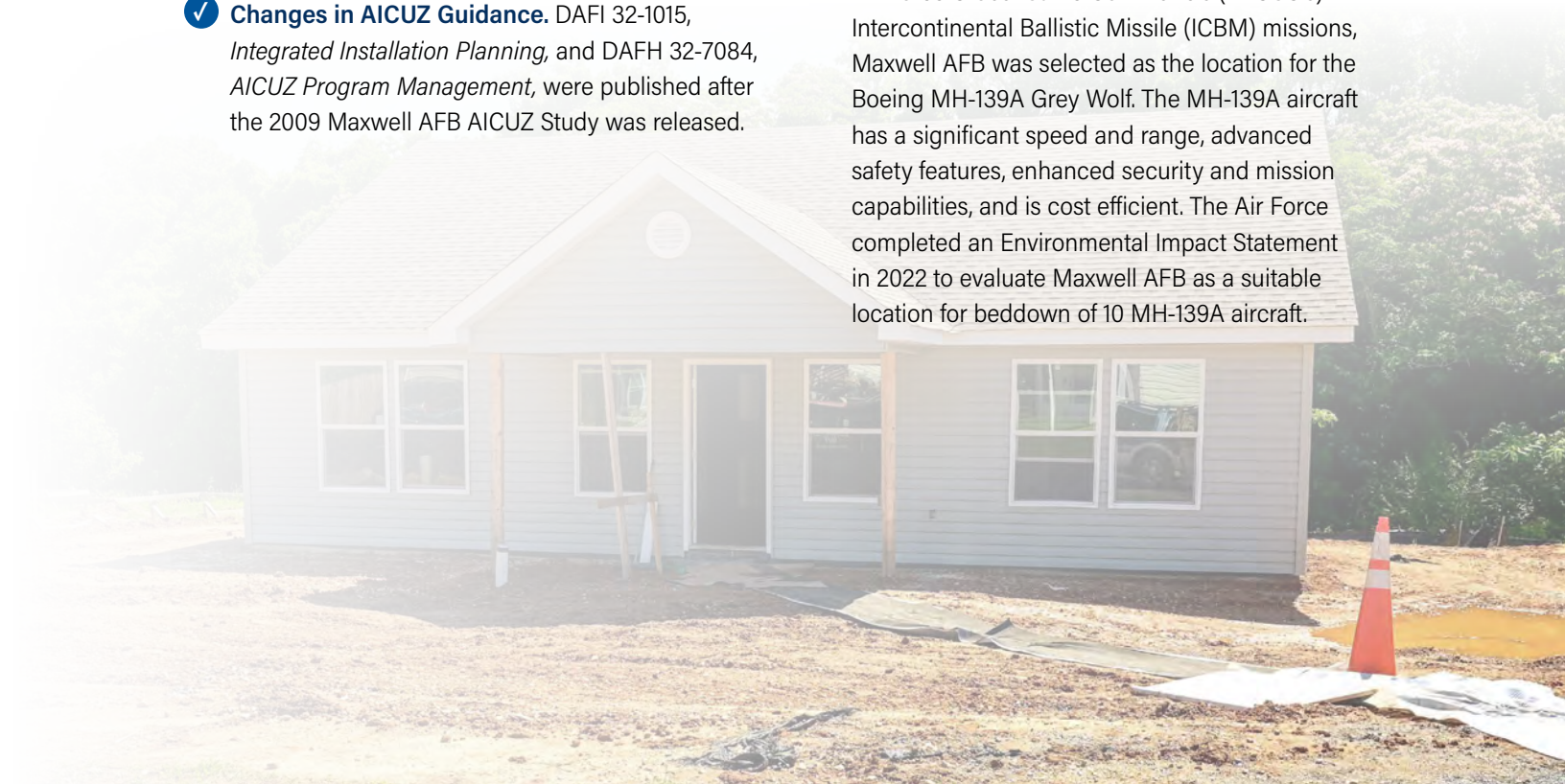
- *Maxwell AFB AICUZ Study, 2009*
- *Maxwell Air Force Base Internal Installation Complex Encroachment Management Action Plan, 2015*
- *Maxwell AFB Joint Land Use Study, 2017*
- *Environmental Assessment for the MH-139 Beddown at Maxwell AFB, 2022*

1.4 CHANGES THAT REQUIRE AN AICUZ STUDY UPDATE

This 2026 Maxwell AFB AICUZ Study replaces the 2009 version. It provides the installation's flight tracks, CZs, APZs, and noise contour information, presenting the most accurate representation of future military activities as projected by the 2022 Environmental Assessment's analysis of MH-139 operations at Maxwell AFB. With this information, the AICUZ Program enables surrounding communities to consider both current and potential activities when making land use decisions.

As the DoD aircraft fleet mix and training requirements change over time, the resulting flight operations change. These changes can affect noise contours and necessitate an AICUZ Study update. Additionally, non-operational changes, such as refinements to noise modeling methods and a local community's land use, may also require the need for an update. The primary changes occurring since the previous Maxwell AFB AICUZ Study include:

- **Changes to planning noise contours.** As a result of the shift in aircraft based at Maxwell AFB, the noise contours have changed. The 2022 Environmental Assessment provided an updated set of noise contours that are referenced by this AICUZ Study.
- **Changes in modeling software.** The noise study modeling software has been updated to better capture and reflect current noise patterns. This 2026 AICUZ study reflects the noise contours created from the latest noise modeling software.
- **Changes in AICUZ Guidance.** DAFI 32-1015, *Integrated Installation Planning,* and DAFH 32-7084, *AICUZ Program Management,* were published after the 2009 Maxwell AFB AICUZ Study was released.
- **Changes in off-installation land use and/or projected land use.** In the 16 years since the 2009 AICUZ Study was prepared for Maxwell AFB, land use, zoning regulations, and comprehensive planning processes in the surrounding municipalities have evolved. An updated AICUZ Study will enhance understanding of where growth is occurring and identify any current land use compatibility issues and concerns related to more current aircraft operations at Maxwell AFB.
- **Introduction of new aircraft.** To support the Air Force Global Strike Command's (AFGSC's) Intercontinental Ballistic Missile (ICBM) missions, Maxwell AFB was selected as the location for the Boeing MH-139A Grey Wolf. The MH-139A aircraft has a significant speed and range, advanced safety features, enhanced security and mission capabilities, and is cost efficient. The Air Force completed an Environmental Impact Statement in 2022 to evaluate Maxwell AFB as a suitable location for beddown of 10 MH-139A aircraft.



2. MAXWELL AFB • AL

2.1 LOCATION

Situated in Montgomery City and County, Alabama, Maxwell AFB encompasses approximately 4,049 acres within the City of Montgomery. The installation is located on the western side of the city, about two miles west of downtown Montgomery. The base is bounded by the Alabama River to the north and Maxwell Boulevard to the south. Interstate 65 borders the installation on the east side, and Route 31 runs along the west side. The City of Montgomery is the third most populous city in Alabama and is the county seat of Montgomery County, which has a population of about 225,000.

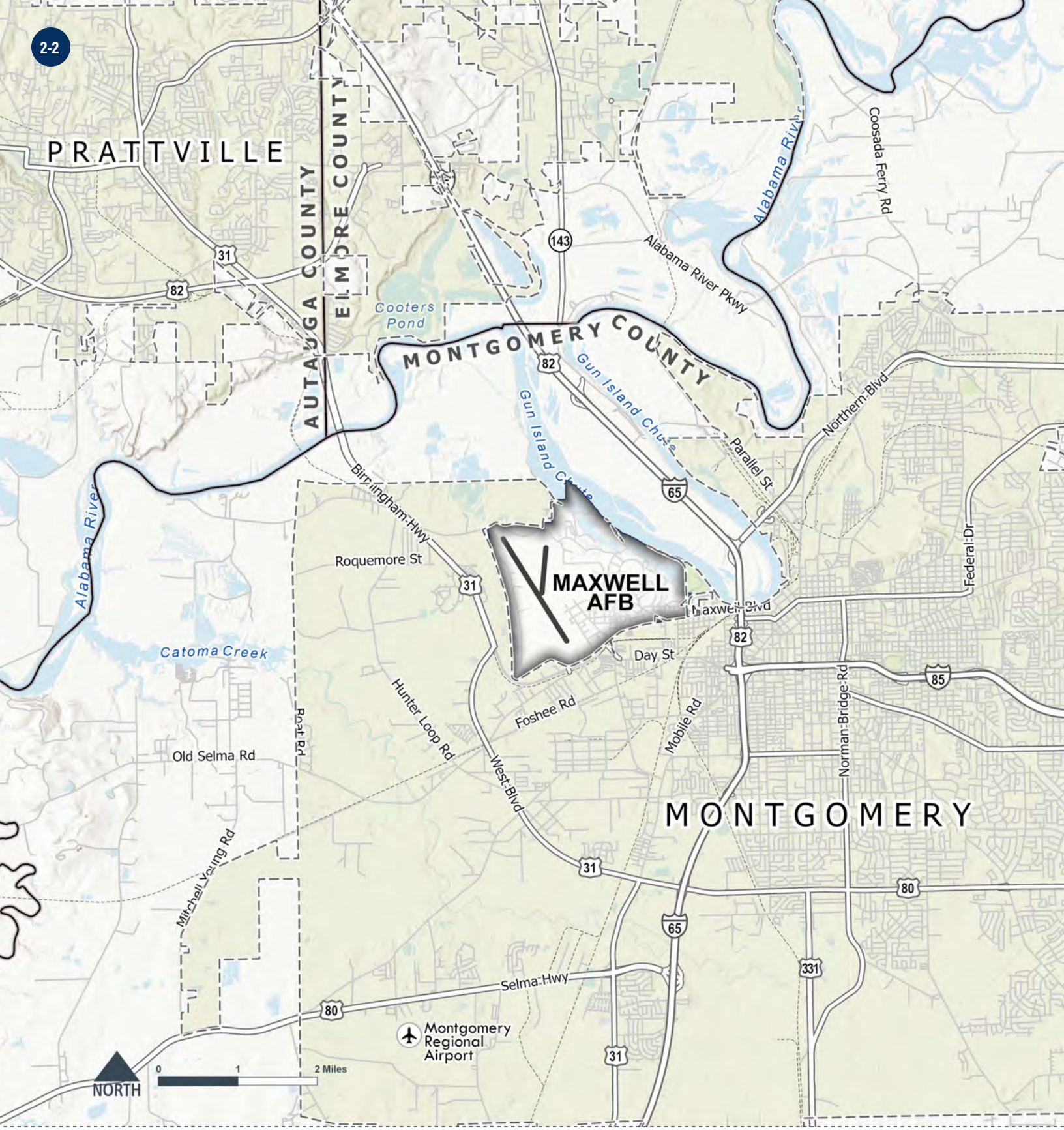
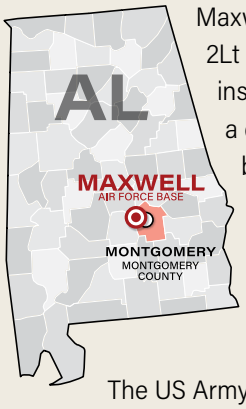


Figure 2-1
Maxwell AFB Regional Setting

2.2 HISTORY



Maxwell AFB is named after 2Lt William C. Maxwell. The installation was first established as a civilian flight school by the Wright brothers in 1910. The site was near a railroad and had advantageous flying conditions because of the mild weather and open terrain. During World War I, the airfield became an aviation repair depot. The US Army leased the depot's land during the war and eventually purchased it in 1920. In November of 1922, the depot was officially designated as Maxwell Field.

In the 1930s, the installation became the headquarters of the Air Corps Tactical School. During World War II, the base expanded significantly. It was used as a training base for aircrew members throughout the war and was turned into a pilot-training center, known as the Southeast Air Corps Training Center. This center conducted flying training for pilots stationed in the Eastern US.

Maxwell AFB is the namesake of 2Lt William C. Maxwell (1892-1920).

In 1977, the airfield was officially renamed Maxwell Air Force Base. Since then, the 42d Air Base Wing (ABW) has become the host wing of the installation and has played many roles in training airmen. While the base has been home to many organizations and has continued to evolve, the installation's mission is centered now around education, training, and leadership development.

2.3 MISSION

As a component of Air Education and Training Command (AETC), Maxwell AFB is a key provider of professional and graduate-level education to Airmen. Maxwell AFB is home to the 42d ABW, Air University, and several other units. These programs ensure that airmen are trained and ready to deploy.

Maxwell Field
Around Douglasville, c. 1928.

2.4 HOST AND TENANT ORGANIZATIONS

42d Air Base Wing

As the host unit for Maxwell AFB, the 42d ABW provides base installation and support services for Air University, the 908th Flying Training Wing (FTW), and other tenant units. The Wing's support services cover over 13,000 personnel at Maxwell AFB. The Wing prepares and trains Airmen for combat, ensuring that they are ready to deploy.

Air University

Maxwell AFB is home to the headquarters of Air University. The mission of Air University is to provide professional education and leadership training to Air Force personnel. This includes specialized programs, research regarding national security, and curriculum development. Air University educates about 70,000 students annually.

908th Flying Training Wing

The 908th Flying Training Wing is Alabama's only Air Force Reserve Command wing under 22nd Air Force. The 908th is a full-time Air Force Reserve Wing and houses the largest flying mission on Maxwell. The wing trains Air Force pilots and special mission aviators for the MH-139A Grey Wolf helicopter, which supports the nation's nuclear surety mission. Reserve instructors provide operations and training to Grey Wolf students primarily within a 90-nautical-mile radius of Maxwell AFB, though they may be seen across the state of Alabama. The wing also has a deployable mission set that provides Agile Combat Employment capabilities to combatant commanders worldwide, including Aeromedical Evacuation, Aeromedical Staging, and multiple aspects of Mission Support functions. Air Force Reserve Command and the 908th value their active-duty-associated squadron and ABW host, which contribute to its mission success. The 908th Flying Training Wing delivers combat-ready capability at speed and scale by combining military excellence with unmatched civilian-sector expertise, providing accessible, integrated, operational power every day.

Civil Air Patrol

Headquartered at Maxwell AFB, Civil Air Patrol (CAP-USAF) is a volunteer-based and federally supported nonprofit. CAP-USAF provides emergency services, aerospace education, cadet programs, and support to the USAF and other agencies. Maxwell AFB is the hub of the organization's leadership, planning, training, and coordination efforts. The CAP-USAF operates two Cessna 182 aircraft.

2.5 AIRFIELD ENVIRONMENT

Maxwell AFB's airfield is located on the western side of the installation. There is one runway at the installation, Runway 15/33. This runway is 8,000 feet long and 150 feet wide and is oriented north-south. There is also an assault strip in the 1/19 direction which is 3,000 feet long and 60 feet wide. Fixed and rotary wing aircraft can use the assault strip but primarily use Runway 15/33. The airfield elevation is 172 feet above mean sea level (MSL).

There are four active paved helicopter landing zones on the installation. There is one landing zone at the north end of the assault strip and one is south of Runway 15/33. The other two landing zones are east of the airstrips, one at the north end of the west ramp, and one due north of that in between the north ramp and fuel cell hangars. Maxwell AFB is looking to add additional helicopter landing sites in the northeast area of the installation and on leased agricultural land outside of Maxwell AFB.

- Run-Up Location
- Helicopter Landing Zone
- Assault Strip
- Runway
- Maxwell AFB

Figure 2-2
Maxwell AFB Airfield Diagram

2.6 LOCAL ECONOMIC IMPACTS

Table 2-1
Summary of Maxwell AFB Personnel (Total Persons)

CLASSIFICATION	TOTAL PERSONNEL
Active Duty	2,888
Reserve/Air National Guard	1,630
Trainees/Cadets	2,147
Civilians and Contractors	3,395
Dependents	3,223
Total	**13,283**

Source: 2023 Maxwell AFB Economic Impact Statement

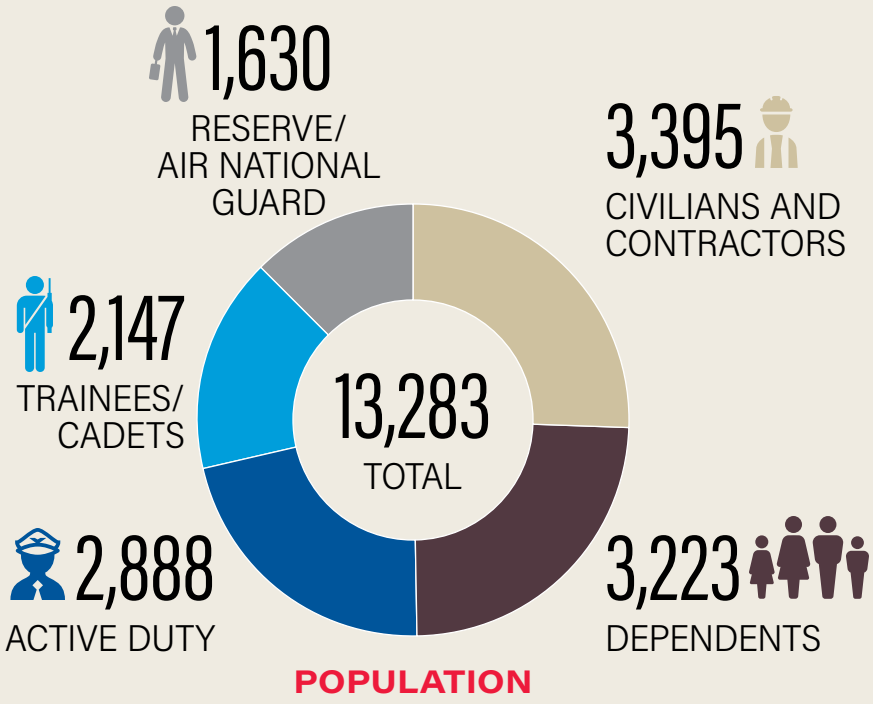
Maxwell AFB is the largest employer in the region and boasts an annual federal payroll of $1.2 billion and annual expenditures of over $400 million. Maxwell AFB annually generates approximately $546 million in jobs, with a total of $2.274 billion in annual economic impact. That makes the base's economic footprint enormously important for both the region and state. The military provides direct, indirect, and induced economic benefits to local communities through jobs and wages. The economic impact of a military installation is based on annual payroll (jobs and salaries), annual expenditures, and the estimated annual dollar value of the jobs created. Based on the 2023 Economic Impact Statement from Maxwell AFB, there are 13,283 total personnel within Maxwell AFB, including over 6,600 military personnel, over 3,223 military dependents, and approximately 3,395 civilians.

Tables 2-1 and 2-2 provide summaries of personnel for Maxwell AFB; the economic impact of the installation; military and civilian payroll; and construction, contract, and expenditures for materials, equipment, and supplies.

Table 2-2
Direct Impact Expenditures

EXPENDITURE	TOTAL (MILLIONS)
Construction	$56.74
Locally Produced Goods and Services	$285.94
Local Purchases Produced Elsewhere	$15.70
Local Hotel and Restaurant Spending by Traveling Personnel	$42.27
Sub-Total	**$400.65**
Annual Government Payroll	**$1,204.48**
Estimated Indirect Impact from Payroll and Materials	**$546.35**
Estimated Indirect Impact	**$122.71**
Total Economic Impact	**$2,274.19**

Source: 2023 Maxwell AFB Economic Impact Statement

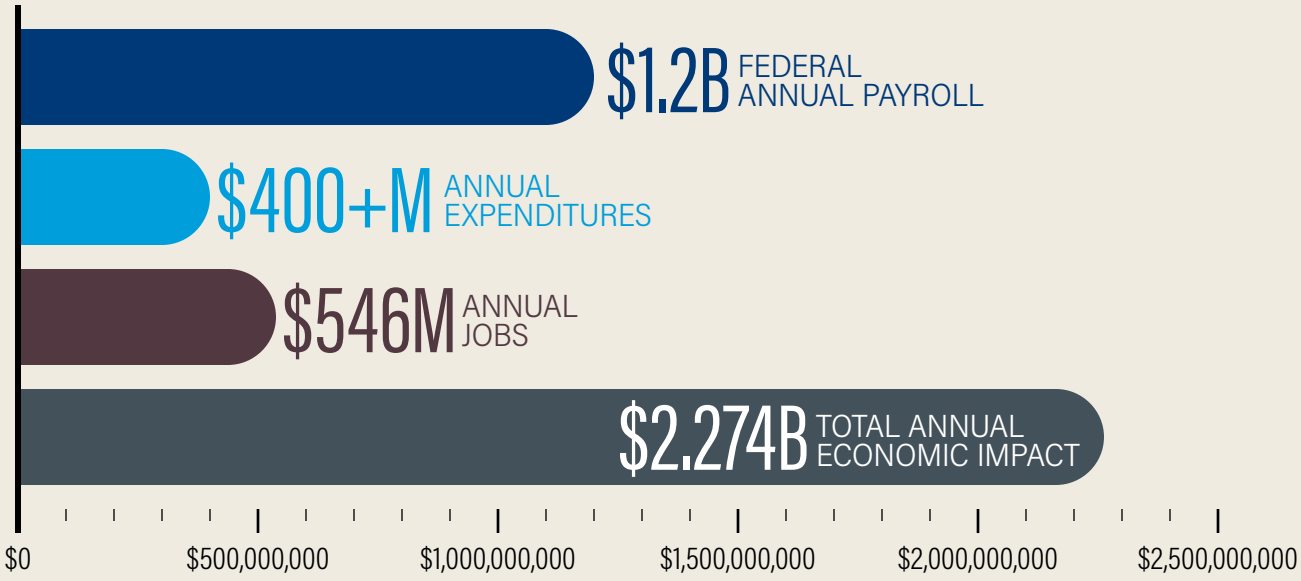


POPULATION

66%
MILITARY PAYROLL
6,665 EMPLOYEES

34%
CIVILIAN PAYROLL
3,395 EMPLOYEES

MILITARY VS. CIVILIAN PAYROLL



ECONOMIC IMPACT

MAXWELL AFB

Source: 2023 Maxwell AFB Economic Impact Statement

3. AIRCRAFT OPERATIONS

Aircraft operations are the primary source of noise associated with a military air installation. The level of noise exposure is related to a number of variables, including the aircraft type, engine power setting and afterburner use, altitude flown, direction of the aircraft, flight track, temperature, relative humidity, frequency, and time of operation (day/night). This chapter discusses the aircraft based at or transient to Maxwell AFB, the types and number of operations conducted at the airfields, and the runways and flight tracks used to conduct these operations.

3.1 AIRCRAFT TYPES

There are two primary types of aircraft operating at Maxwell AFB: fixed-wing and rotary-wing (helicopters). Aircraft permanently based at Maxwell AFB most commonly conduct flight operations at the installation. Aircraft that are not permanently assigned to the installation but conduct operations from the installation on an occasional basis, are referred to as "transient." Below are brief descriptions of aircraft at Maxwell AFB.

3.1.1 Permanently Assigned Aircraft

BASED | MH-139

MH-139

Equipped with modern avionics and safety technology, the MH-139 is a multi-mission helicopter. It has increased fuel efficiency and was designed to transport government officials and security forces. It can also be used in search and rescue missions and cargo transport.

3.1.2 Transient Aircraft

Additional common transient aircraft include fighters, bombers, transport, and refueling aircraft. While not an exhaustive list, some of the most prevalent transient aircraft present at Maxwell AFB are listed below.

TRANSIENT | A-10

A-10 Thunderbolt

The A-10 was designed to support close ground operations, like delivering weapons, as it can move quickly and efficiently at low altitudes. Because of its endurance, it can last significant amounts of time in battle and is hardened to survive hits and explosions.

TRANSIENT | C-130

C-130 Hercules

The C-130 is an aircraft designed to perform tactical airlift missions. This aircraft can take off and land on incomplete runways. Its primary function involves dropping off equipment to troops but is often involved in other tasks such as aeromedical evacuations, aerial spray operations, and firefighting missions.


TRANSIENT | C-12

C-12 Huron

The C-12 Huron is a twin turboprop aircraft used for cargo and passenger airlift. The aircraft is a military version of the Raytheon 1900C regional airliner. The C-12J can carry 19 passengers or up to 3,500 pounds of cargo. In addition to providing cargo and passenger airlift, the aircraft is capable of transporting two litter patients or ten ambulatory patients during aeromedical evacuations.


TRANSIENT | C-17

C-17 Globemaster

The C-17 Globemaster is a large transport aircraft that performs tactical and strategic airlifts of troops and cargo, as well as medical evacuations and paratrooper airdrop missions. Eight countries plus the European Union use the C-17. The highly versatile aircraft has seen extensive use worldwide in combat during Operation Enduring Freedom and Operation Iraqi Freedom and providing humanitarian aid after natural disasters. The aircraft is designed to use runways as short as 3,500 feet, with a high payload capacity of over 170,000 pounds, and extended range configurations enable the aircraft's global reach. Four turbofan engines power the C-17.


TRANSIENT | C-21

C-21

The C-21 is a twin turbofan-engine aircraft used for passenger and cargo airlift. The aircraft is the military version of the Learjet 35A business jet. The C-21 can carry eight passengers and 42 cubic feet of cargo. In addition, the aircraft is capable of transporting one litter patient or five ambulatory patients for aeromedical evacuation operations.

C-32

The C-32 is the military version of the Boeing 757 and is used for government distinguished individual transport. The C-32 is used by the Vice President, the First Lady, and members of the Cabinet and Congress. The President may opt to use a C-32 when the destination cannot accommodate the larger VC-25 commonly used for Air Force One.

C-40

The C-40 is a military version of the Boeing 737. The Air Force uses this aircraft as a mobile command post, featuring advanced communications equipment including satellite connectivity, two-way broadband data capabilities, crew quarters, distinguished visitor cabin, workstations, and two galleys. It features additional fuel tanks for long-range operations.

C-38 Courier

The C-38 Courier is a military version of the Gulfstream G100. The Navy currently uses it as a test and evaluation support aircraft. In this role it serves as an airborne radar target or as a chase aircraft to test the capabilities of C-130s, E-6s, P-8s, and other Navy aircraft.

F/A-18 Hornet/Super Hornet

The F/A-18 Hornet/Super Hornet is a highly capable aircraft across various missions, including air superiority, fighter escort, reconnaissance, aerial refueling, close air support, air defense suppression and day/night precision strike. This aircraft was designed with excellent fighter and self-defense capabilities to increase survivability. In its fighter configuration, they are used for fighter escort and fleet air defense. When configured for attack missions, the aircraft is used for force projection, interdiction, and close and deep air support.


TRANSIENT | F-15

F-15 Eagle

The F-15 Eagle is an all-weather, extremely maneuverable, tactical fighter designed to permit the Air Force to gain and maintain air supremacy over the battlefield. The aircraft is built to achieve air superiority through exceptional maneuverability and acceleration, range, and advanced weapon capabilities and avionics.


TRANSIENT | KC-46

KC-46 Pegasus

The KC-46 Pegasus is a next-generation aerial refueling aircraft capable of refueling any certified fixed-wing receiver-capable aircraft on any mission, both day and night. The aircraft will be equipped with a modernized refueling boom integrated with a proven fly-by-wire control system and will have the ability to deliver fuel through a centerline hose and drogue system, which adds additional mission capability independent of the boom system.


TRANSIENT | F-16

F-16 Fighting Falcon

The F-16 Fighting Falcon is a compact, multirole fighter aircraft. It is highly maneuverable and has proven itself in air-to-air combat and air-to-surface attack. It provides a relatively low-cost, high-performance weapon system for the US and allied nations. In an air combat role, the F-16's maneuverability and combat radius exceed that of all potential threat fighter aircraft.

TRANSIENT | T-6

T-6 Texan II

The T-6 Texan II is used to train Air Force and Navy pilots. There are two seats in the cockpit: one for an instructor and one for a student. Due to its acrobatic capabilities, this aircraft is often showcased in air shows and displays.

3.2 MAINTENANCE OPERATIONS

Maintenance is an integral part of any flying operation and requires a dedicated team of professionals to ensure that units can meet their flying requirements. Two key tasks in maintaining aircraft are low- and high-powered engine maintenance runs. Maxwell AFB may conduct low-power engine maintenance runs on aprons, ramps, or in hangars to functionally check the operation of engines or other aircraft systems **(see Figure 2-2 for the run-up locations).**

Aircraft maintainers conduct engine maintenance runs at power settings ranging from idle to maximum power and typically conduct runs on aircraft parking ramps or just outside of maintenance hangars. Maxwell AFB has an engine run-up pad near the north ramp. Noise associated with these operations is included in the noise analysis for the Maxwell AFB noise contours.

Maxwell AFB does not typically conduct engine runs outside of airfield operating hours. Airfield operating hours are 8:00 a.m. until 10:00 p.m. Monday to Friday, and 10:00 a.m. until 6:00 p.m. on weekends; however, depending on mission necessity, maintenance engine runs could occur outside of normal operating hours.

3.3 FLIGHT OPERATIONS

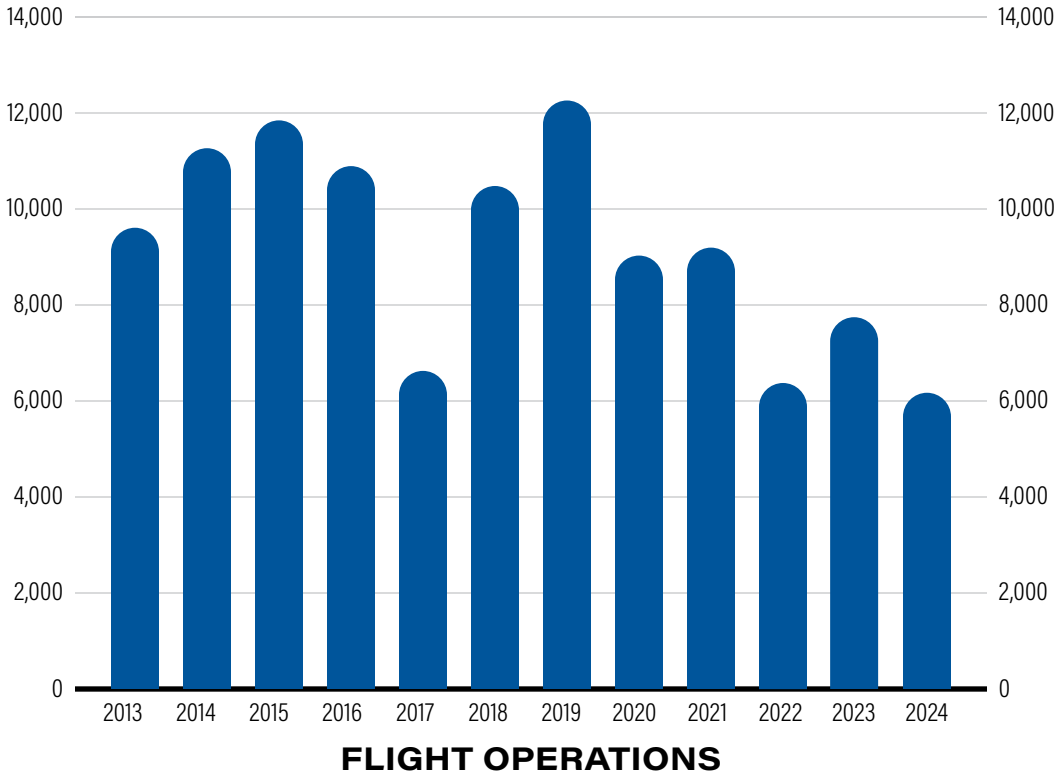
Flight activities, including where aircraft fly, how high they fly, number of times they fly over a given area, and the time of day they operate, must be fully evaluated to understand the relationship between flight operations and land use. This chapter discusses typical flight operations for aircraft based at or visiting Maxwell AFB.

Each time an aircraft crosses over a runway threshold (the beginning or ending of a runway's usable surface) to either takeoff, practice an approach, or land, it is counted as a single flight operation. For example, a departure counts as a single operation as does an arrival. As another example, when an aircraft conducts a pattern (a departure followed by an immediate return) it counts as two operations because the aircraft crosses both the approach and departure ends of the runway during the pattern.

The following list highlights typical operations utilized during normal or increased flight operations. Each flight track is designed to maximize flight operations and, when possible, minimize the effects of noise on surrounding communities.

Figure 3-1
Time of Day for Arrivals, Departures, and Pattern Operations

Figure 3-2
Summary of Maxwell AFB Flight Operations for Calendar Years 2013-2024



Source: Air Force Civil Engineer Center (AFCEC), Air Force Flight Standards Agency (AFFSA) Air Traffic Reporting System Annual Report

Takeoff/Departure

Takeoff is the phase of flight in which an aircraft leaves the ground and becomes airborne (also known as liftoff). Departure is the act of leaving the airfield.

Landing/Arrival

Landing is the process of bringing an aircraft to the ground (also known as touchdown). An arrival is the act of coming to an airfield.

Patterns

When an aircraft conducts a successive takeoff and landing. This is commonly done to practice visual flight rules (VFR) landings which can be visualized as a racetrack pattern which stays withing the immediate airfield environment. It is also commonly done to practice instrument flight rules (IFR) arrivals when pilots use aircraft instruments to maintain runway alignment and adherence to altitude restrictions until the pilot can acquire visual sight with the runway environment.

- **Low Approach.** A low approach is an approach to a runway that does not result in a landing, but rather a descent towards the runway (usually below 500 feet above ground level [AGL]) followed by a climb-out away from the airfield. Pilots perform low approaches for a few reasons, including practicing to avoid potential ground obstructions (e.g., vehicles, debris, stray animals).
- **Touch-and-Go.** A Touch-and-go is a training maneuver that involves landing on a runway and taking off again without coming to a full stop. Usually, the pilot then circles the airfield in a defined pattern and repeats the maneuver.

RUNWAYS

A runway is typically used in both directions and counted as two separate runways, depending on the direction of the departure. Each direction is labeled as a separate runway and numbered based on its magnetic heading, divided by 10 and rounded to a whole number.

3.5 RUNWAY UTILIZATION AND FLIGHT TRACKS

3.5.1 Runway Utilization

The frequency with which aircraft utilize a runway involves a variety of factors including, but not limited to:

- Airfield environment (layout, lights, runway length),
- Direction of prevailing winds,
- Location of natural terrain features (rivers, lakes, mountains, and other features),
- Wildlife activity,
- Number of aircraft in the pattern, and/or,
- Preference of a runway for the purpose of safety and noise abatement.

ATC personnel establish the runway in use and adjust pattern procedures accordingly to maximize air traffic flow efficiency. **Table 3-1** lists how frequently each runway at Maxwell AFB is used. Some operations generated from Maxwell AFB go to Dannelly Field at Montgomery Regional Airport.

3.5.2 Flight Tracks

Each runway has designated flight tracks that provide for the safety, consistency, and control of an airfield. Flight tracks depict where aircraft fly in relation to an airfield. They are for departures, arrivals, and pattern procedures, and are designated for each runway to facilitate operational safety, noise abatement, aircrew consistency, and the efficient flow of air traffic within ATC airspace. Aircraft flight tracks are not set "highways in the sky." While we show flight tracks as lines on the map, they are more like bands. Aircraft deconfliction, configuration, pilot technique, takeoff weight, and wind all affect the actual path taken on any given flight. **Figure 3-3** presents the departure flight tracks, **Figure 3-4** presents the arrival flight tracks, and **Figure 3-5** presents the pattern flight tracks for Maxwell AFB.

Table 3-1
Maxwell AFB Runway Utilization

RUNWAY DIRECTION	UTILIZATION
Runway 33	45%
Runway 15	45%
Assault Strip	10%

Source: Maxwell AFB 2025 Airfield Noise Study.

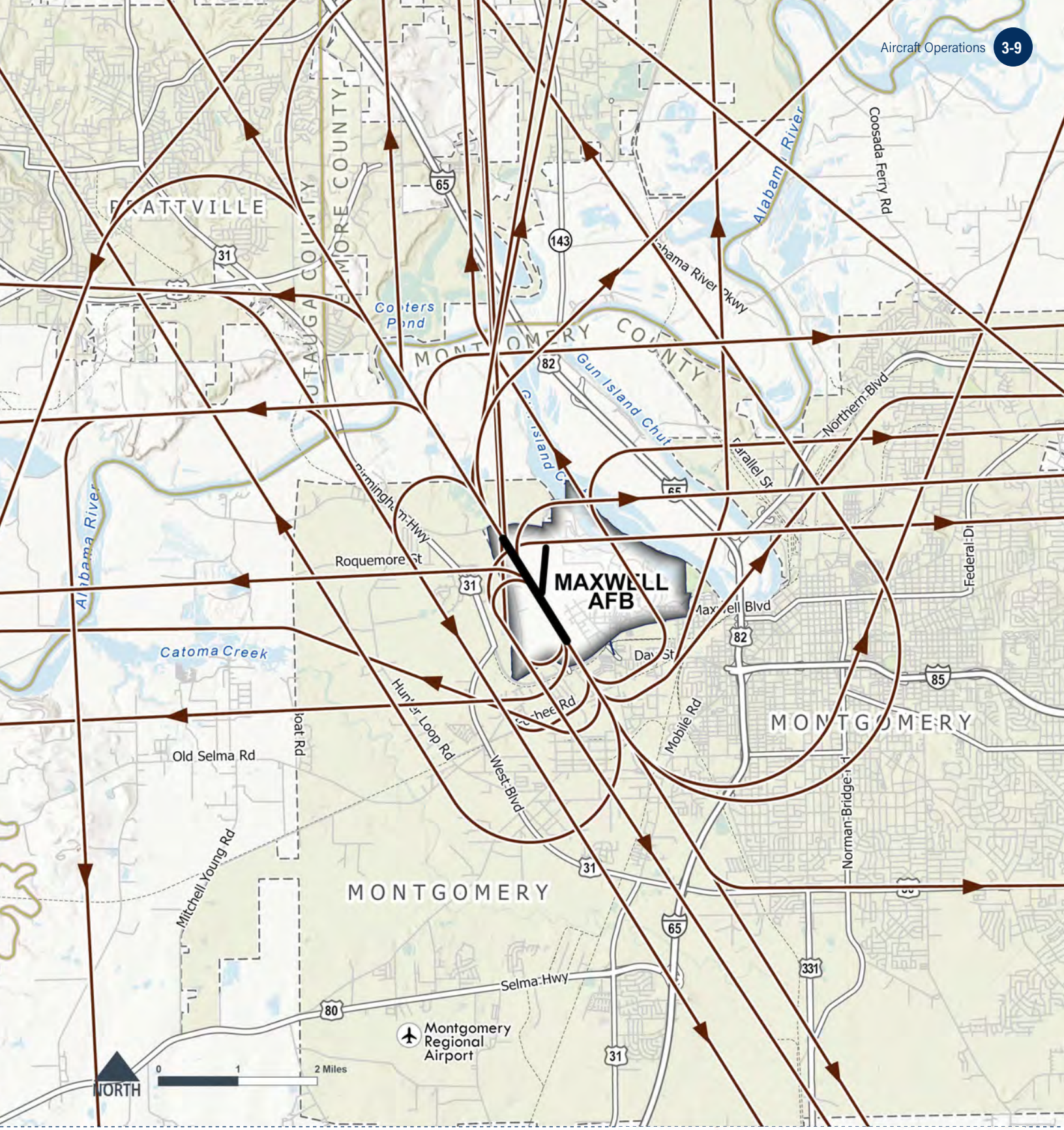


Figure 3-3
Maxwell AFB Departure Flight Tracks

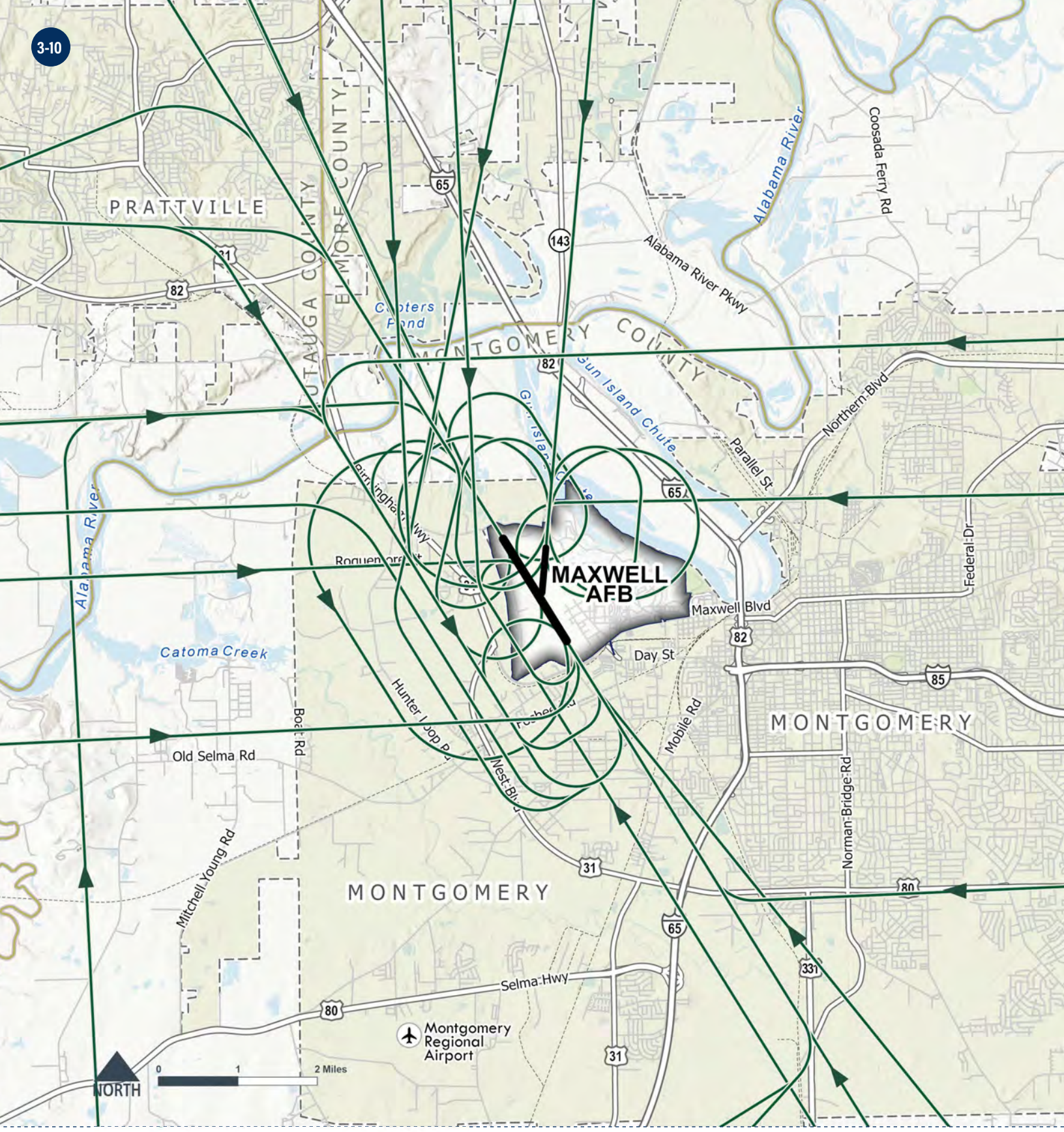


Figure 3-4
Maxwell AFB Arrival Flight Tracks

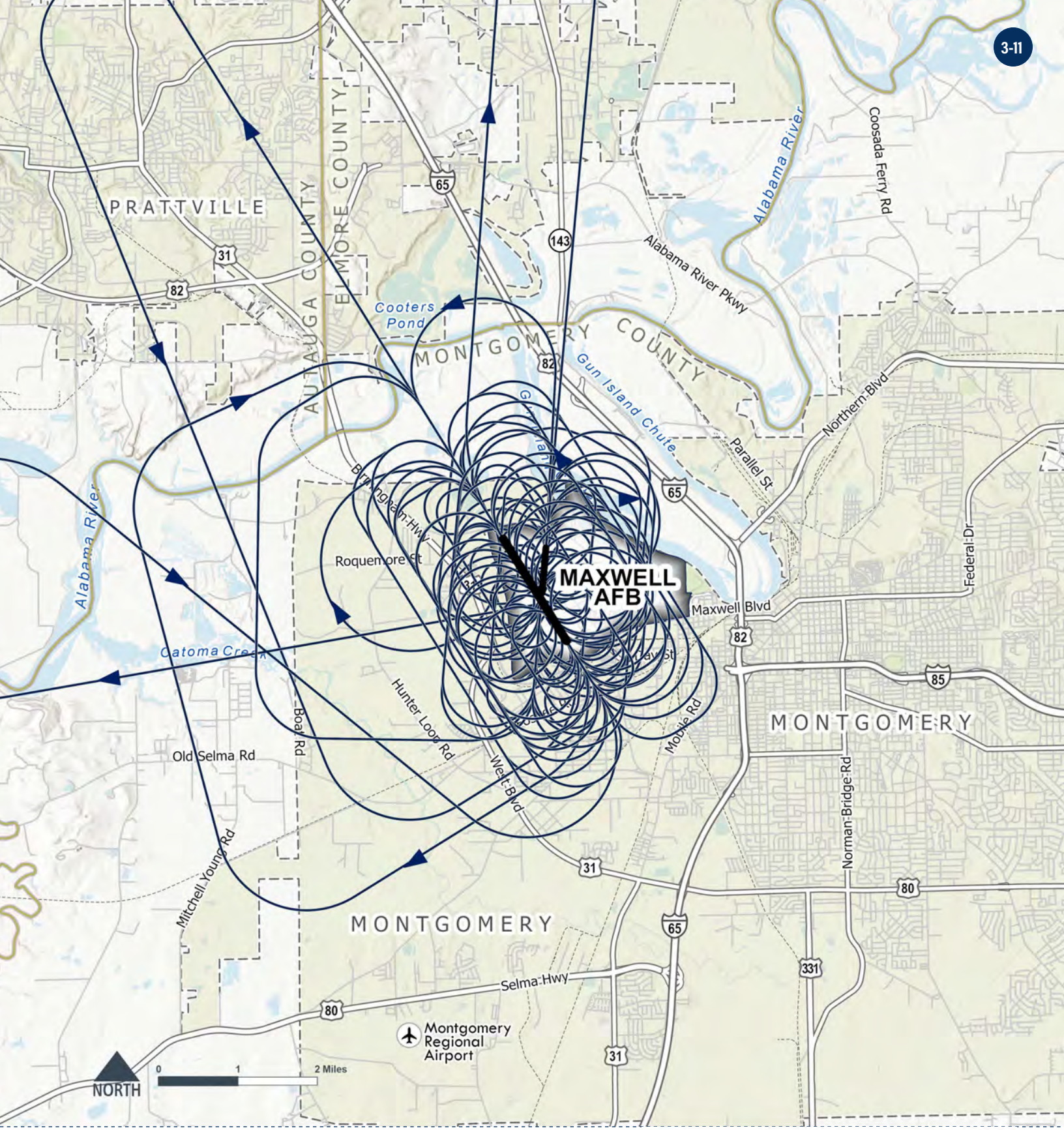


Figure 3-5

Maxwell AFB Pattern Flight Tracks


VIPER DEMO

4. MILITARY OPERATIONAL NOISE

How an installation manages operational noise can play a key role in shaping its relationship with neighboring communities. Ideally, aircraft and range noise, as well as its management should be key factors in local land use planning. To mitigate impact on the communities, the Air Force has defined noise zones using the guidance provided in the DAFH 32-7084 *AICUZ Program Management.*

For this reason, noise contours for Maxwell AFB have been developed in accordance with DAFH 32-7084 to graphically depict how sound, or noise, propagates from the aircraft operating around the airfield and out towards surrounding communities. The following sections will define and discuss sound/noise and how it is perceived and will then conclude with a graphic of the Maxwell AFB planning noise contours. Refer to **Section 4.3.2** for a comprehensive definition of Planning Noise Contours.

4.1 WHAT IS SOUND/ NOISE?

Sound consists of vibrations in the air called compression waves. A multitude of sources can generate these vibrations, including roadway traffic, barking dogs, radios, or aircraft operations. Just as a pebble dropped into a pond generates ripples, the compression waves—formed of air molecules pressed together—radiate outward, decreasing with distance. If these vibrations reach your eardrum at a certain rate and intensity, you perceive it as sound. When the sound is unwanted, we refer to it as noise. Generally, sound becomes noise to a listener when it interferes with normal activities. Sound has three components: intensity, frequency, and duration.

- **Intensity or loudness** relates to sound pressure change. As the vibrations oscillate back and forth, they create a change in pressure on the eardrum. The greater the sound pressure change, the louder it seems.
- **Frequency** determines how we perceive the pitch of the sound. We hear low frequency sounds as rumbles or roars, while sirens or screeches typify high-frequency sounds. We measure sound frequency in cycles per second, or hertz (Hz). While the range of human hearing goes from 20 to 20,000 Hz, humans hear best in the range of 1,000 to 4,000 Hz.
- **Duration** is the length of time one can detect the sound.

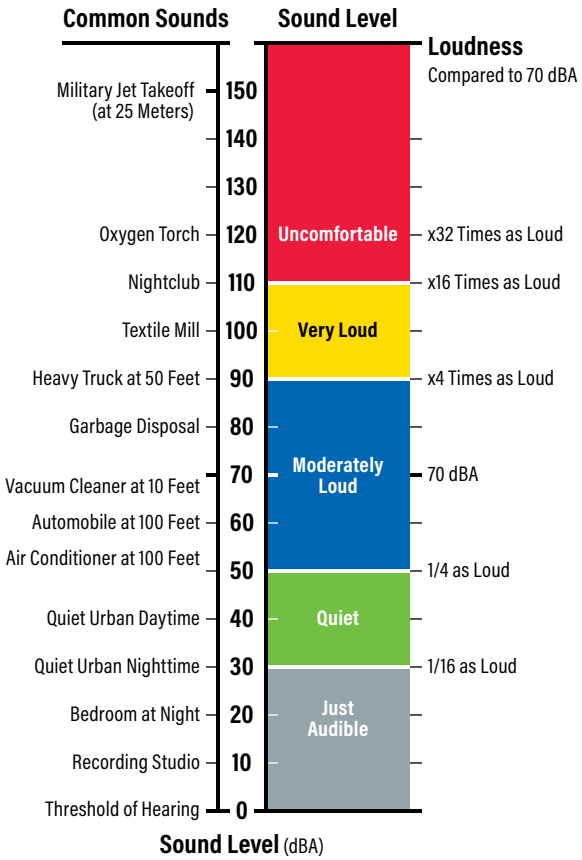
4.2 HOW SOUND IS PERCEIVED

The loudest sounds that the human ear can comfortably hear are a billion times higher in intensity than those of sounds we barely hear. Because such large numbers are cumbersome to use, a logarithmic scale is used to measure decibels, the unit of measurement for noise.

Figure 4-1 shows the A-weighted sound levels emitted through common sources measured in decibel (dBA) values. A-weighted decibels give greater weighting to frequencies in the middle of the human hearing range, and less weighting to frequencies at the lower and higher ends. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. While normal speech has a sound level of approximately 60 dB, sound levels above 120 dB can cause discomfort and those above 130 dB can be painful to the ear.

WEIGHTING FACTOR

This weighting factor removes lower frequencies to focus on the frequency range humans hear. Oftentimes, when discussing decibels with respect to human hearing range, the "A" is dropped and only noted as dB.



Source: U.S. Air Force
See also: https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm

Figure 4-1
Typical A-weighted Levels of Common Sounds

Table 4-1 shows the subjective responses to changes in (single event) sound levels. While noise energy doubles or halves with every 3 dB change, we do not perceive all this noise energy. It takes a 10 dB increase or decrease for our ears to perceive a doubling or halving of loudness. Please note: these metrics are based on a single event and cannot be compared to the Day-Night Average Sound Level (DNL) examples, which are based on a cumulative metric.

Table 4-1
Subjective Response to Changes in Sound Level

CHANGE IN SOUND LEVEL	CHANGE IN LOUDNESS
10 dB	Twice or half as Loud
5 dB	Quite Noticeable
3 dB	Barely Perceptible
1 dB	No Noticeable Change

4.3 THE DAY-NIGHT AVERAGE SOUND LEVEL

When people hear an aircraft fly overhead, they may ask, "How loud was that?" While we may often find ourselves concerned over the perceived loudness of a sound, there are other dimensions to the sound event that draw our interest. For instance, does one overflight draw the same interest as two separate overflights—or 20? Does the 30-second run-up of engines prior to takeoff draw the same interest as a 30-minute maintenance run? Additionally, is an overflight more noticeable at 2:00 p.m. or at 2:00 a.m., when the ambient noise is low, and most people are sleeping?

The length and number of events—the total noise energy—combined with the time of day that a noise event takes place, have key roles in our perception of noise. The Air Force uses the DNL metric created by the United States Environmental Protection Agency (EPA) for use throughout the United States, to evaluate health and activity impacts as well as land use compatibility.

DNL, when used as a metric for aircraft noise, represents the accumulation of noise energy from all aircraft noise events in a 24-hour period. DNL is "A-weighted" (ADNL). This weighting factor removes lower frequencies to focus on the frequency range humans hear. Oftentimes, when discussing ADNL, the 'A' is dropped because it is understood that "DNL" is referring to ADNL. Additionally, for all operations between 10:00 p.m. and 7:00 a.m., DNL adds a 10 dB adjustment to each event to account for the intrusiveness of nighttime operations that may disrupt sleep and the reduced ambient sounds that would otherwise mask the flight noise. As is implied in its name, the DNL represents the noise energy present in a daily period. However, because aircraft operations at military airfields fluctuate from day to day, the Air Force typically bases DNL on a year's worth of operations and represents the annual average daily aircraft events.

DNL is not a level heard at any given time but represents long-term exposure. Scientific studies have found a strong correlation between the number of people highly annoyed by sounds and the level of average sound exposure measured in DNL.

DNL NOISE METRIC

The DNL noise metric is used for both A-weighted and C-weighted noise events, depending on the noise source. In the context of this AICUZ Study, when DNL is used, it is assumed to be A-weighted associated with aircraft-related noise. When it is C-weighted noise related to large-caliber or other impulsive/explosive noise, the metric will be specifically identified as "CDNL."

4.3.1 Noise Contours

The DoD develops noise contours to assess the noise impacts of aircraft operations on surrounding land uses. The contours connect points of equal acoustic value, just as contours on topographic maps connect points of equal elevation. They graphically describe noise exposure on the ground. This AICUZ study presents the historical (2009) and future planning noise contours based on full operations of the MH-139 training unit. Noise contours, when overlaid on local land use maps, can help identify areas of incompatible land use, and assist communities in planning for future development around an air installation.

4.3.2 Planning Contours

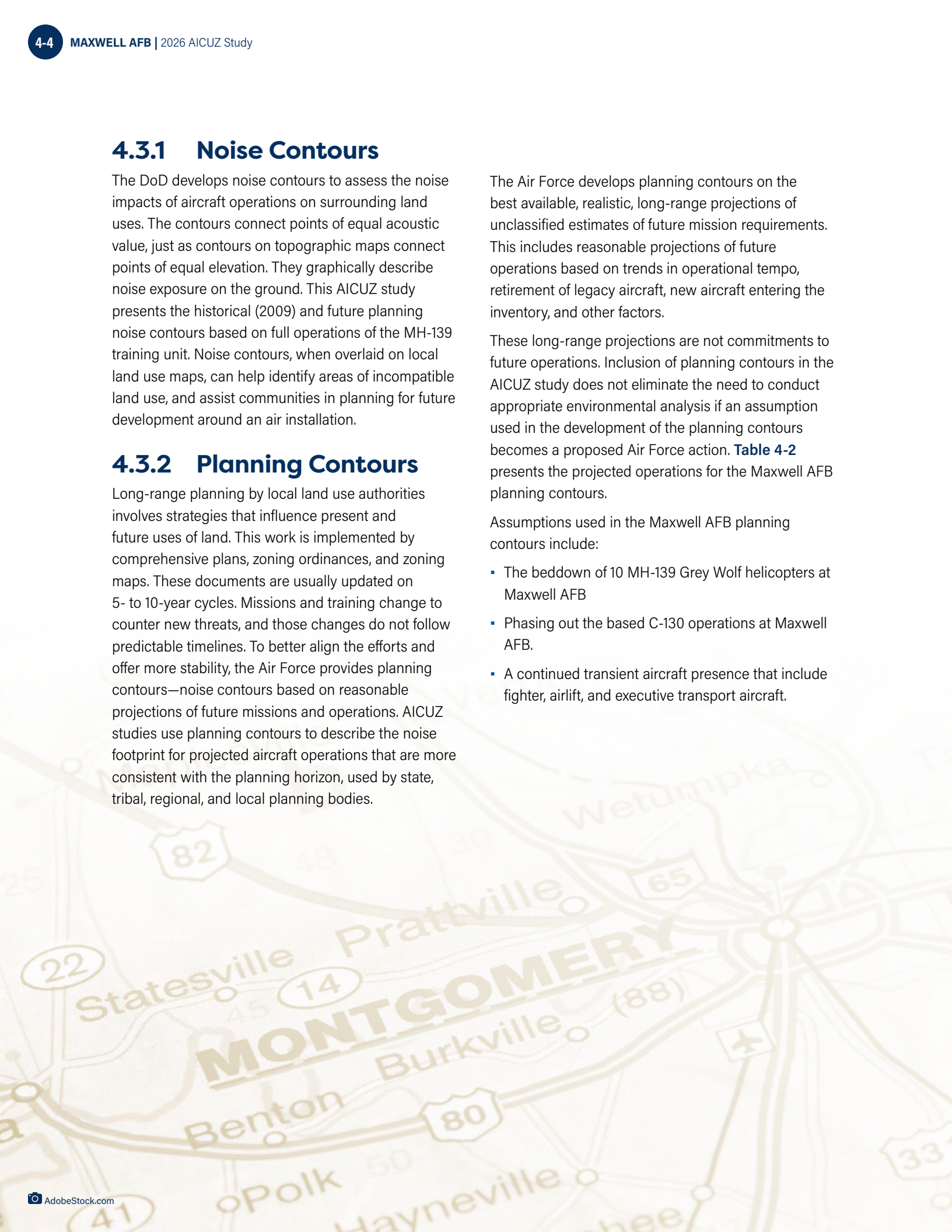
Long-range planning by local land use authorities involves strategies that influence present and future uses of land. This work is implemented by comprehensive plans, zoning ordinances, and zoning maps. These documents are usually updated on 5- to 10-year cycles. Missions and training change to counter new threats, and those changes do not follow predictable timelines. To better align the efforts and offer more stability, the Air Force provides planning contours—noise contours based on reasonable projections of future missions and operations. AICUZ studies use planning contours to describe the noise footprint for projected aircraft operations that are more consistent with the planning horizon, used by state, tribal, regional, and local planning bodies.

The Air Force develops planning contours on the best available, realistic, long-range projections of unclassified estimates of future mission requirements. This includes reasonable projections of future operations based on trends in operational tempo, retirement of legacy aircraft, new aircraft entering the inventory, and other factors.

These long-range projections are not commitments to future operations. Inclusion of planning contours in the AICUZ study does not eliminate the need to conduct appropriate environmental analysis if an assumption used in the development of the planning contours becomes a proposed Air Force action. **Table 4-2** presents the projected operations for the Maxwell AFB planning contours.

Assumptions used in the Maxwell AFB planning contours include:

- The beddown of 10 MH-139 Grey Wolf helicopters at Maxwell AFB
- Phasing out the based C-130 operations at Maxwell AFB.
- A continued transient aircraft presence that include fighter, airlift, and executive transport aircraft.



AdobeStock.com

4.4 MAXWELL AFB NOISE CONTOURS

The 2026 release of the Maxwell AFB AICUZ noise contours are based on planning contours for the year 2022 **(Figure 4-2).** The 65 dB DNL noise contour extends off the installation less than 500 feet to the northwest. The 70 dB DNL noise zone extends just beyond the runway on all sides but stays within the installation boundary. The 75 dB DNL noise zone extends barely beyond the ends of the runway to the north and south, also within the installation boundary. A small portion of Maxwell AFB operations utilize Dannelly Field at Montgomery Regional Airport. While these operations contribute to the regional airport noise footprint, there are also many operations that are unrelated to Maxwell AFB and the Air Force. The airfield is owned by the City of Montgomery, and therefore, the city and airport authority are responsible for noise related planning and coordination for Montgomery Regional Airport and the surrounding communities.

PEAK SOUND EVENT

Peak is a single event (instantaneous) sound pressure level without weighting. We perceive it as the loudest of a single sound event.

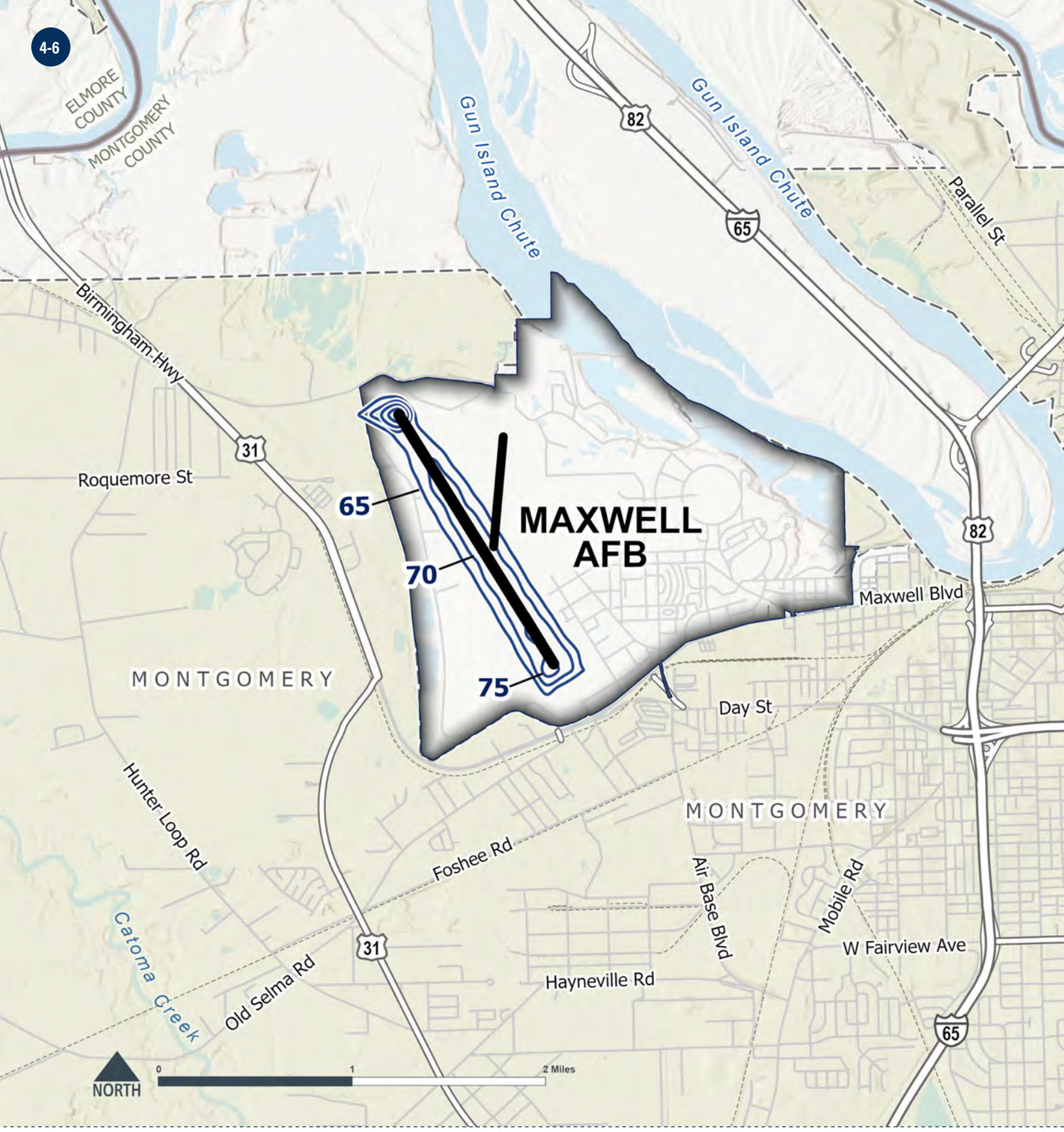
Figure 4-4 shows a comparison of the 2026 and 2009 AICUZ noise contours. In general, the 2026 AICUZ contours are smaller than the 2009 contours. The 65 dB contour no longer extends off the installation to the northwest in line with the runway but instead curves to the west to match the new flight tracks the MH-139 will follow. The 65 dB contour extends less than 500 feet beyond the installation boundary. A consistent transient aircraft presence, to include airlift, fighter, and executive transport aircraft, will contribute to the noise levels at Maxwell AFB.

Table 4-2
Modeled Annual Aircraft Flight Operations for 2026 AICUZ Noise Contours

UNIT/AIRCRAFT	DEPARTURES	ARRIVALS	PATTERN[1]	TOTAL
Based Aircraft				
MH-139	1,760	1,760	7,040	**10,560**
Civil Air Patrol	587	587	212	**1,386**
Transient				
All Aircraft	437	437	2,270	**3,144**
Total	**2,784**	**2,784**	**9,522**	**15,091**

1. Each "pattern" consists of two total operations: one arrival and one departure.

Source: Maxwell AFB 2025 Airfield Noise Study



2026 Noise Contour (dB)

Runway

Maxwell AFB

City Boundary

Figure 4-2
2026 AICUZ Operational Noise Contours

Table 4-3 presents the off-installation land acreage and estimated population within the planning contours. The Air Force generates population estimates on 2020 census block-level data using a geometric proportion method to determine the estimated population within each noise zone. This method assigns population based on the portion of a census block that falls within the contour. The population across census blocks is assumed to be evenly distributed.

The operational noise exposes less than one acre of land to sound levels of 65 dB DNL. There are no residents estimated to be within that piece of land. The noise contours for the 2026 Maxwell AFB AICUZ Study are based on the noise analysis done for the 2022 Environmental Assessment for the MH-139 Beddown at Maxwell AFB, which forecasts an increase in annual operations but a shift in the primary generator of noise from the C-130 to the MH-139. The MH-139 flight tracks cause the 65 dB noise contour to no longer extend off the north end of the runway, instead curving west less than 500 feet beyond the installation boundary.

Table 4-3

Off-installation Land Area and Estimated Population within Noise Zones for the 2026 AICUZ Noise Contours at Maxwell AFB

NOISE ZONE (dB DNL)	ACRES	ESTIMATED POPULATION
65-69	0.6	0
70-74	0	0
75-79	0	0
80-84	0	0
85+	0	0
Total (65+)	**0.6**	**0**

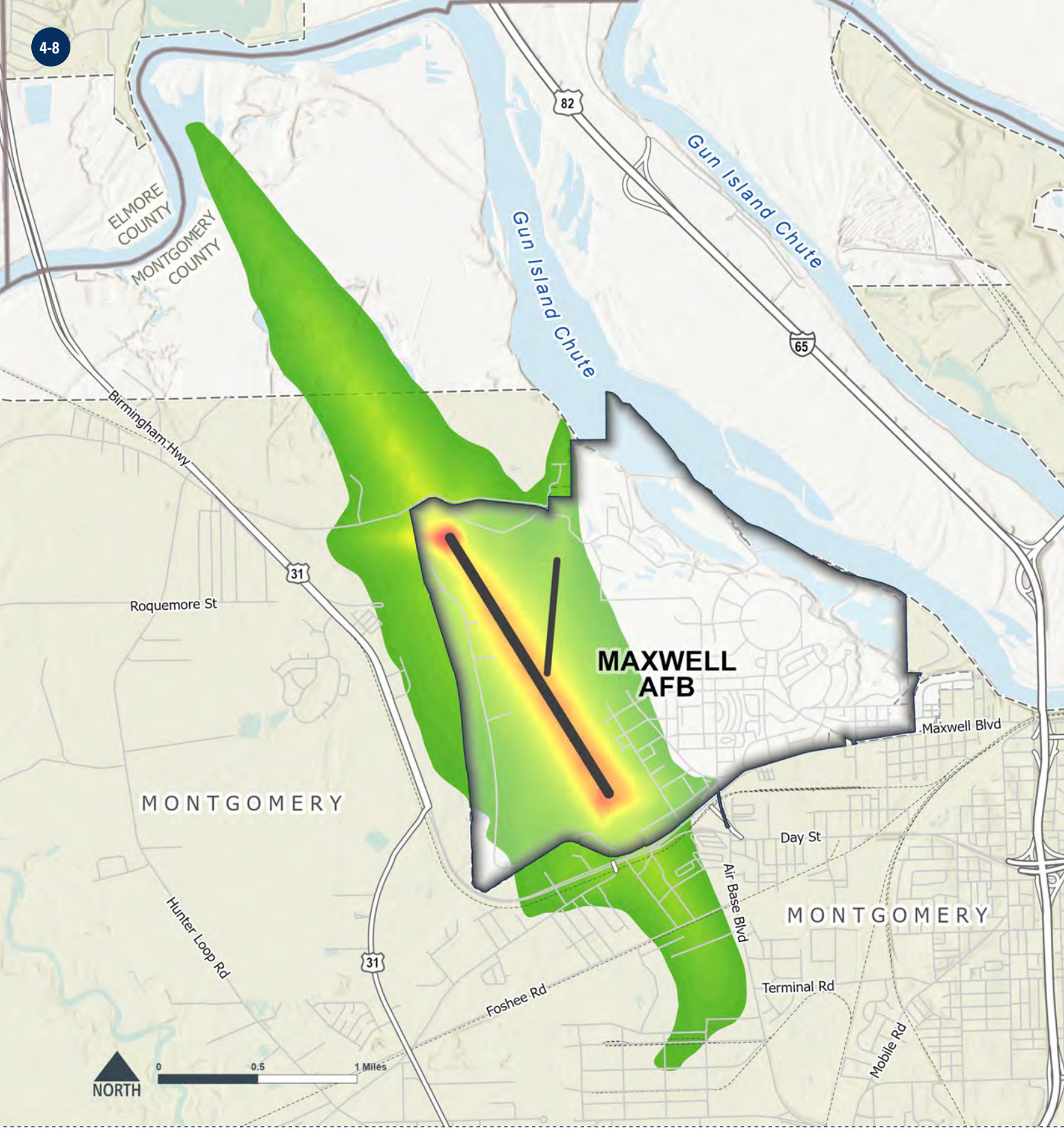
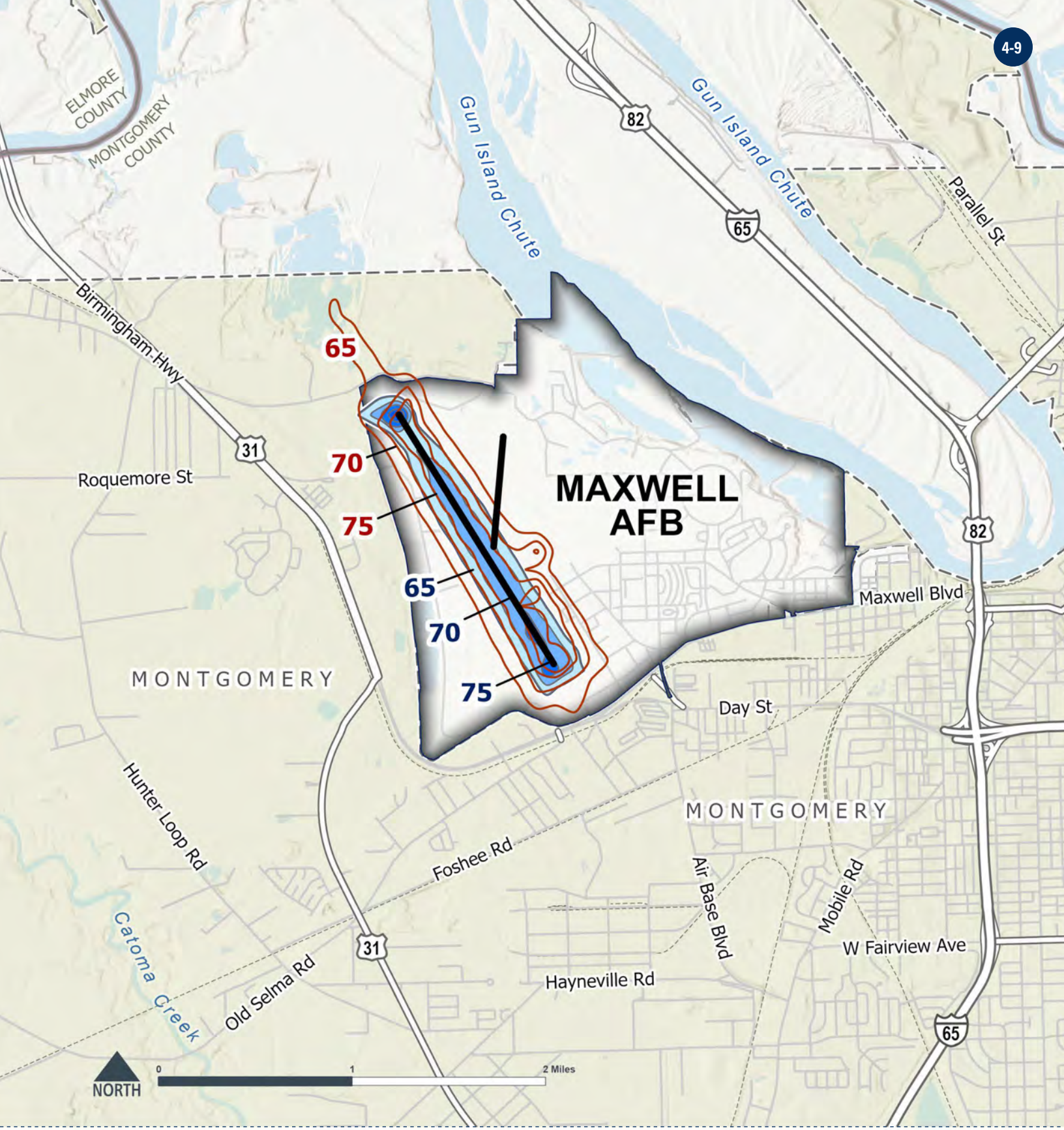


Figure 4-3
2026 AICUZ Operational Noise Footprint with Gradient Shading



2009 Noise Contour (dB)

2026 Noise Contour (dB)
- 65 - 69
- 70 - 74
- 75 - 79
- 80 and Greater

- Runway
- Maxwell AFB
- City Boundary

Figure 4-4
Comparison of 2026 and 2009 AICUZ Noise Contours for Maxwell AFB

4.5 NOISE ABATEMENT

The Air Force recognizes that sound from military operations may cause concern for people living near military installations.

For this reason, the Air Force has established a Noise Program aimed at reducing and controlling the emission of noise and vibrations associated with the use of military aircraft, weapon systems, and munitions while maintaining operational requirements. The result is the implementation of various strategies, techniques, and procedures documented under the Maxwell AFB Noise Abatement Program. These implementations are aimed at protecting the installation's neighbors and structures from the harmful effects of noise and vibrations.

Maxwell AFB noise abatement procedures include the following:

- Aircraft using the east pattern flight track shall not overfly the base less than 1,200 feet MSL except during approaches to the landing zone, random shallow approaches, and crosswind/downwind associated with approach/departure to the runway.
- Circling is not authorized east of the runway to reduce noise over the City of Montgomery.

Installation leadership periodically reviews flight operations and their potential impact on surrounding communities. This requirement facilitates the planning, designation, and establishment of flight tracks over sparsely populated areas and/or waterways as often as practicable to balance operational safety and reduce noise exposure levels in surrounding communities.

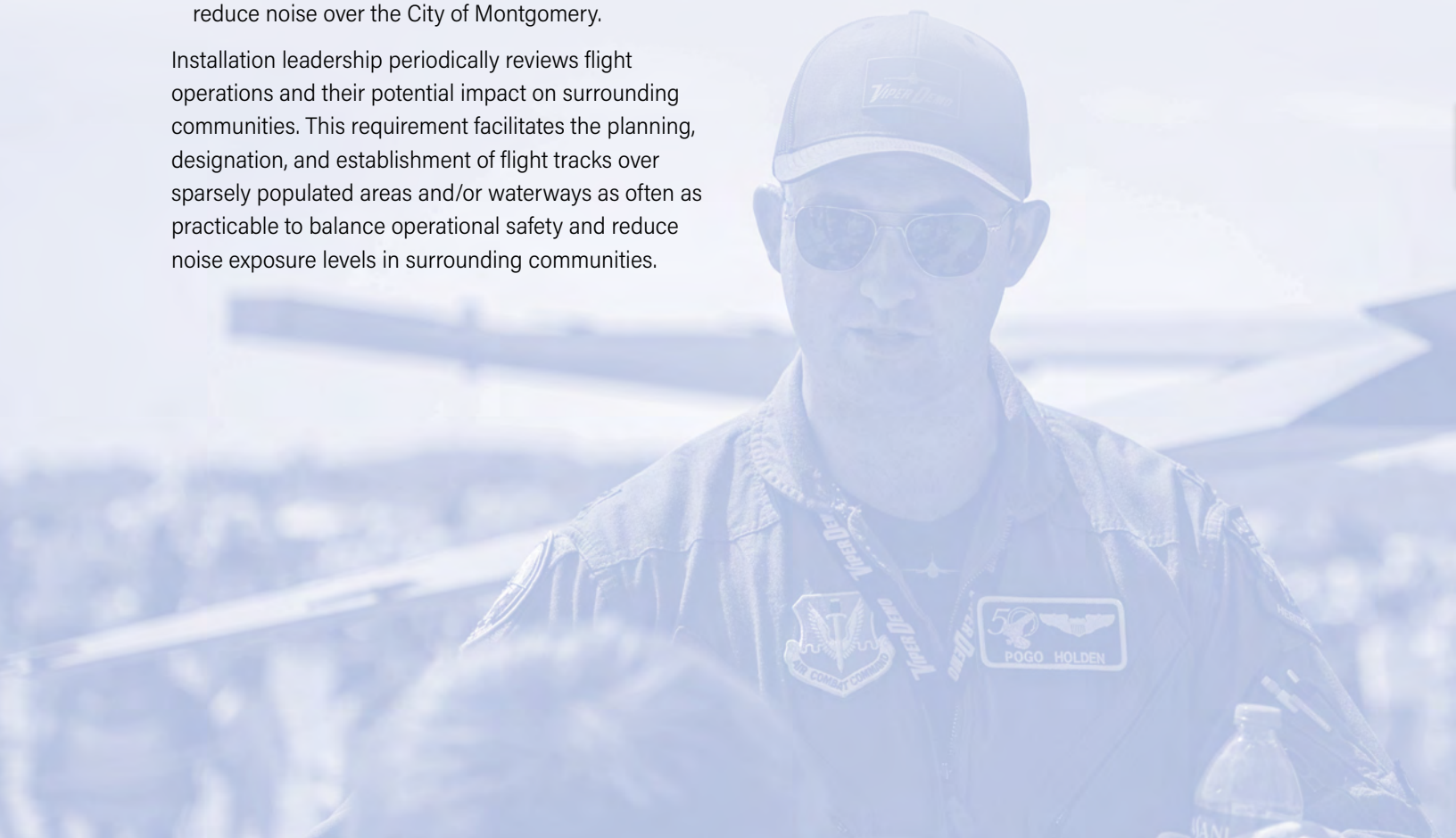
4.6 NOISE COMPLAINTS

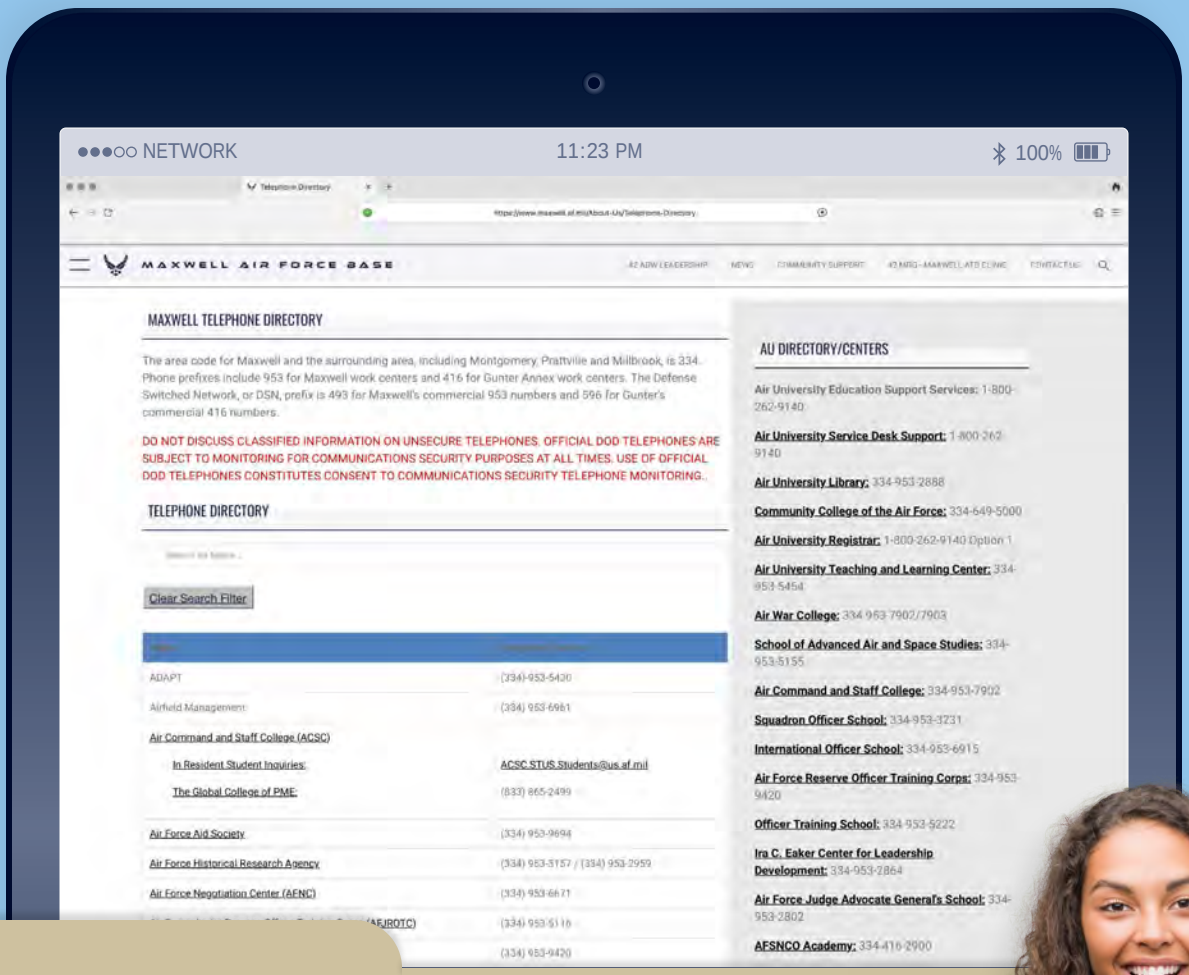
At times, military operations may generate noise complaints. The Air Force evaluates all noise complaints to ensure future operations, when possible, will not generate unacceptable noise. Concerned citizens are encouraged to contact the Maxwell AFB Public Affairs (PA) Office with any noise complaints at **MaxwellPublicAffairs@us.af.mil** or **(334) 953-2015.**

When someone files a noise complaint with the installation, a Noise Complaint Worksheet is filled out for review and noise tracking purposes. This worksheet includes the caller's information, a description of the event and the aircraft involved, and comments from on-base reviewers, including public affairs and flying units. Maxwell AFB also posts information on the installation website, including alerts about upcoming aircraft operations that can be shared publicly:

Website | https://www.maxwell.af.mil/; and

Facebook | https://www.facebook.com/MaxwellAFB/.





QUESTIONS?

Maxwell AFB Public Affairs posts information about issues and upcoming events via the installation Facebook as well as press releases and the main installation website:

PHONE
(334) 953-2015

WEB
WWW.MAXWELL.AF.MIL

EMAIL
MAXWELLPUBLICAFFAIRS@US.AF.MIL

GET SOCIAL WITH US

FACEBOOK
/MAXWELLAFB
https://www.facebook.com/maxwellafb/

INSTAGRAM
@MAXWELL_GUNTERAFB
https://www.instagram.com/maxwell_gunterafb

AdobeStock.com

AdobeStock.com | Main Image and Middle Inset Image

5. COMMUNITY AND AIRCRAFT SAFETY

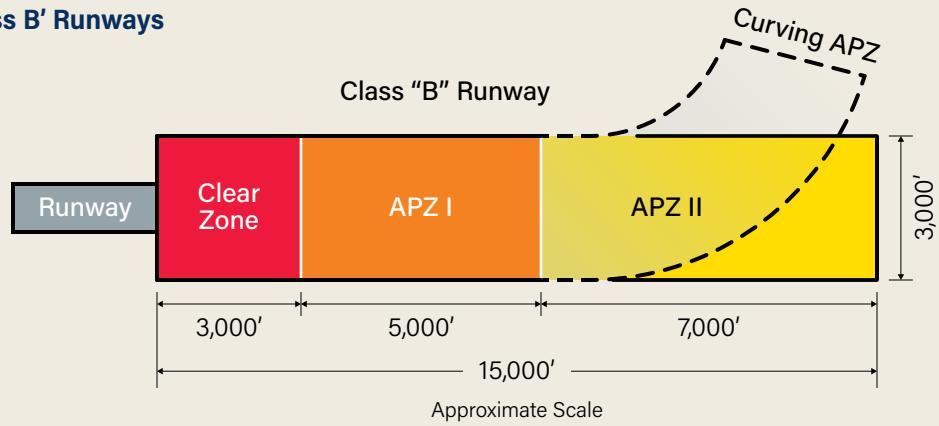
Community and aircraft safety are paramount to the Air Force and are a shared responsibility between Maxwell AFB and surrounding communities, with each playing a vital role in its success. Cooperation between the Air Force and the community results in strategic and mutually beneficial land use planning and development. As such, the Air Force has established a flight safety program and has designated areas of accident potential around its air installations to assist in preserving the health, safety, and welfare of residents living near its airfields. This AICUZ study provides the information needed, in part, to reach this shared safety goal.

Identifying safety issues assists the community in encouraging land uses compatible with airfield operations. To this end, as part of the AICUZ Program, the Air Force defines areas of accident potential, imaginary surfaces, and hazards to aircraft flight.

5.1 CLEAR ZONES AND ACCIDENT POTENTIAL ZONES

In the 1970s and 1980s, the military conducted studies of historical accidents and operations data throughout the military. The studies showed that most aircraft mishaps occur on or near the runway, diminishing in likelihood with distance from the runway. Based on these studies, the DoD identified CZs and APZs as areas where an aircraft accident is most likely to occur if an accident were to take place; however, it should be noted that CZs and APZs are not predictors of accidents. The studies identified the following three areas for which planners should consider density and land use restrictions because of the increased potential for accidents: the CZ, the APZ I, and the APZ II.

Figure 5-1
Runway Clear Zones and Accident Potential Zones for 'Class B' Runways



The CZs and APZs for Class B runways are described below and are depicted on **Figure 5-1** based off DoDI 4165.57, Appendix 3A:

- **CZ.** At the end of all active DoD runways is an area known as the "Clear Zone." The CZ for Class B runways has an area of 3,000 feet square from the end of the runway along the extended runway centerline. The CZ for paved assault strips used by C-130s is an area 500 feet square from the end of the assualt strip runway centerline. All active runways have CZs and should be owned or controlled by the installation and remain undeveloped.
- **APZ I.** Beyond the CZ is APZ I. APZ I is 3,000 feet in width and 5,000 feet in length along the extended runway centerline.
- **APZ II.** APZ II is the rectangular area beyond APZ I. APZ II is 3,000 feet in width by 7,000 feet in length along the extended runway centerline.
- **The APZ LZ** for assault strips extends beyond the assault strip CZ for a length of 2,500 feet. It is 500 feet wide if the assault strip is within an unoccupied area, or 1,000 feet wide if in an occupied area. At Maxwell AFB, the APZ LZ is 500 feet wide.

While the APZs typically extend outward from the ends of the runway along the extended runway centerline, the installation may add a curved APZ when over 80 percent of the operations follow a curved arrival or departure path.

Within the CZ, the only compatible land uses with military aircraft operations and defense missions are undeveloped lands and certain right-of-way and agricultural uses. For this reason, it is the Air Force's policy, where possible, to acquire real property interests in land within the CZ to ensure incompatible development does not occur. Installation control of land use in CZs is a consideration of the Strategic Basing Process when siting new missions.

Within APZ I and APZ II, a variety of land uses are compatible; however, higher density uses (e.g., schools, apartments, churches) and more intense uses (e.g., office buildings, strip malls) should be limited and, if possible, prevented because of the greater safety risk in these areas.

Chapter 6 discusses land use and recommendations for promoting compatible growth and addressing incompatibility issues within APZs for each runway.

Maxwell AFB contains one active Class B runway, Runway 15/33. **Figure 5-3** depicts the CZs and APZs for Runway 15/33. The CZ extends from the north end of Runway 15 approximately 1,800 feet into the City of Montgomery, and southeast from Runway 33 approximately 1,300 feet into the City of Montgomery. To the north, APZ I covers land in Montgomery City and Montgomery County. To the south, APZ I is entirely within the City of Montgomery. APZ II to the north covers lands of Montgomery County, Elmore County, and the City of Prattville, and to the south, APZ II is entirely within the City of Montgomery, stretching nearly to Interstate 65.

Table 5-1 presents the off-installation land acreage and estimated population within the CZs and APZs. The Air Force generates population estimates on 2020 census block-level data using a geometric proportion method to determine the estimated population within each safety zone. This method assigns population based on the portion of a census block that falls within each zone. The population across census blocks is assumed to be evenly distributed.

There are 264.6 acres of off-installation land within the CZ, 681.7 acres in APZ I, 965.1 acres in APZ II, and 12.4 acres within the APZ LZ. According to US Census data, an estimated 148 people live in the CZ, 275 in APZ I, and 730 in APZ II.

Table 5-1

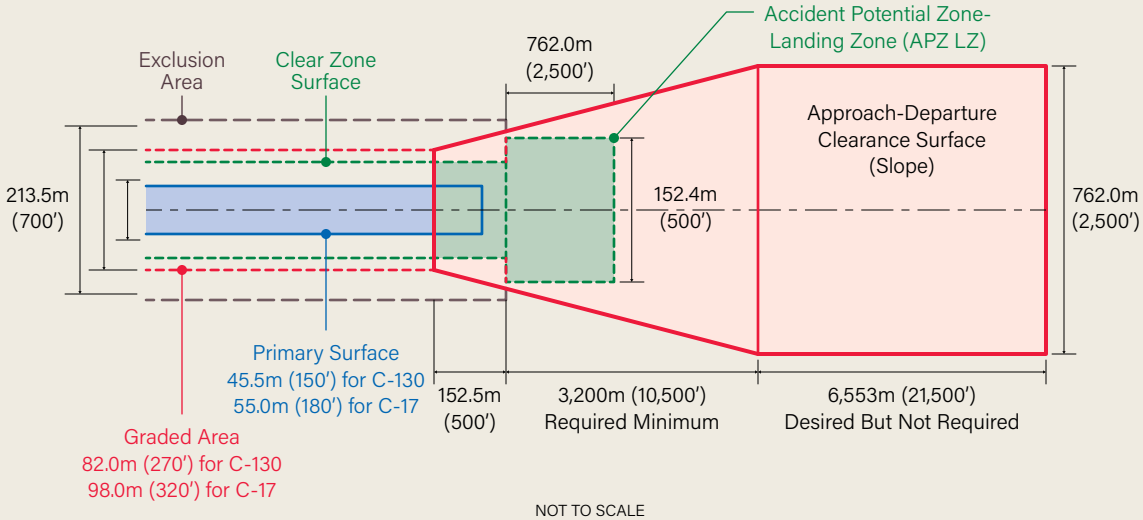
Off-Installation Land Area and Estimated Population within the Clear Zones and Accident Potential Zones

ZONE	ACRES	POPULATION
CZ	264.6	148
APZ I	681.7	275
APZ II	965.1	730
APZ LZ	12.4	0
Total	**1,923.8**	**1,153**

Source: 2020 U.S. Census.

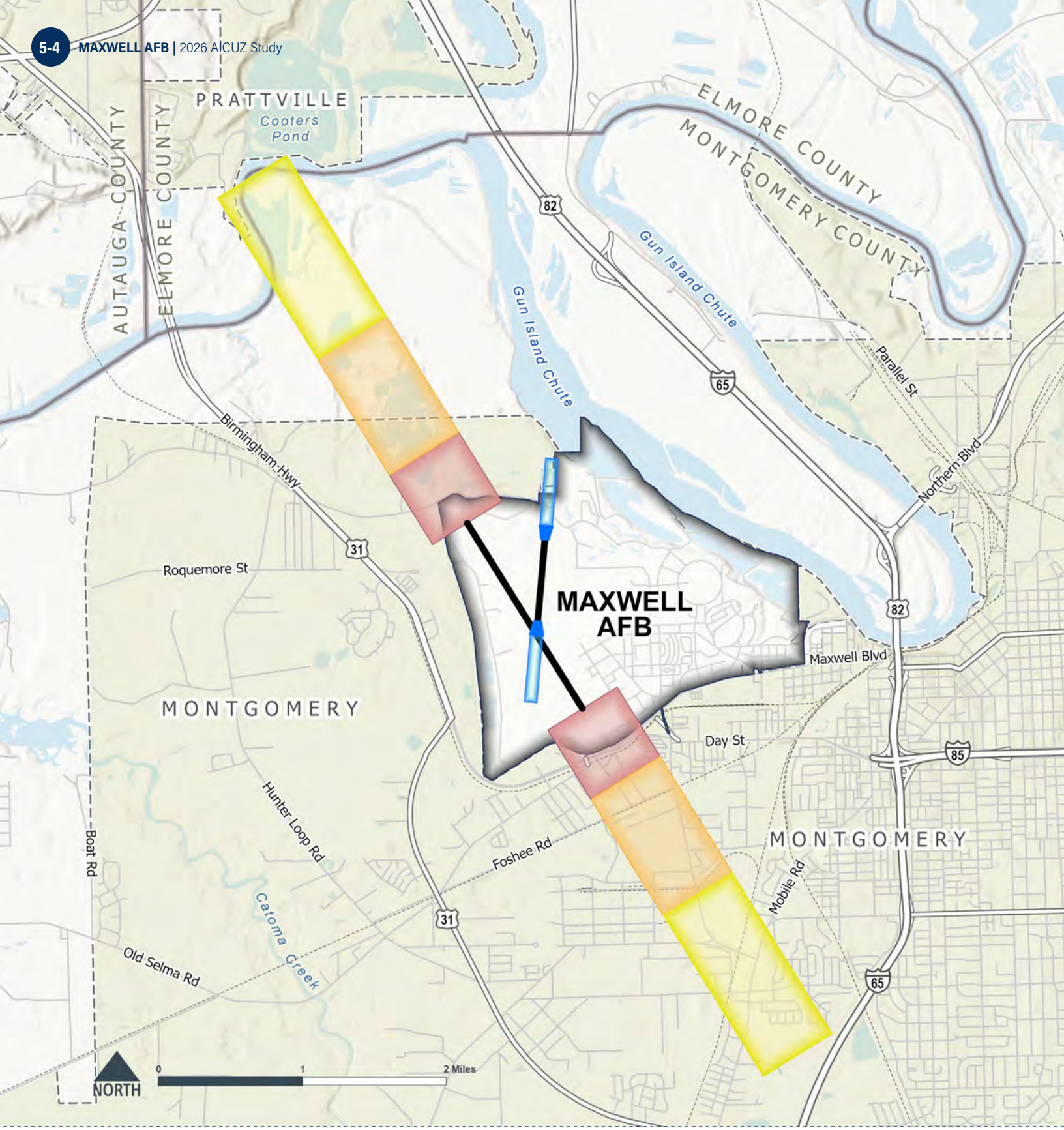
Figure 5-2

APZ-LZ Runway Imaginary Surfaces



NOT TO SCALE

Source: UFC 3-260-01, 4 February 2019, Change 3, 4 February 2026



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

Assault Strip
- Clear Zone (CZ)
- Accident Potential Zone Landing Zone (APZ LZ)

- Runway
- Maxwell AFB
- City Boundary

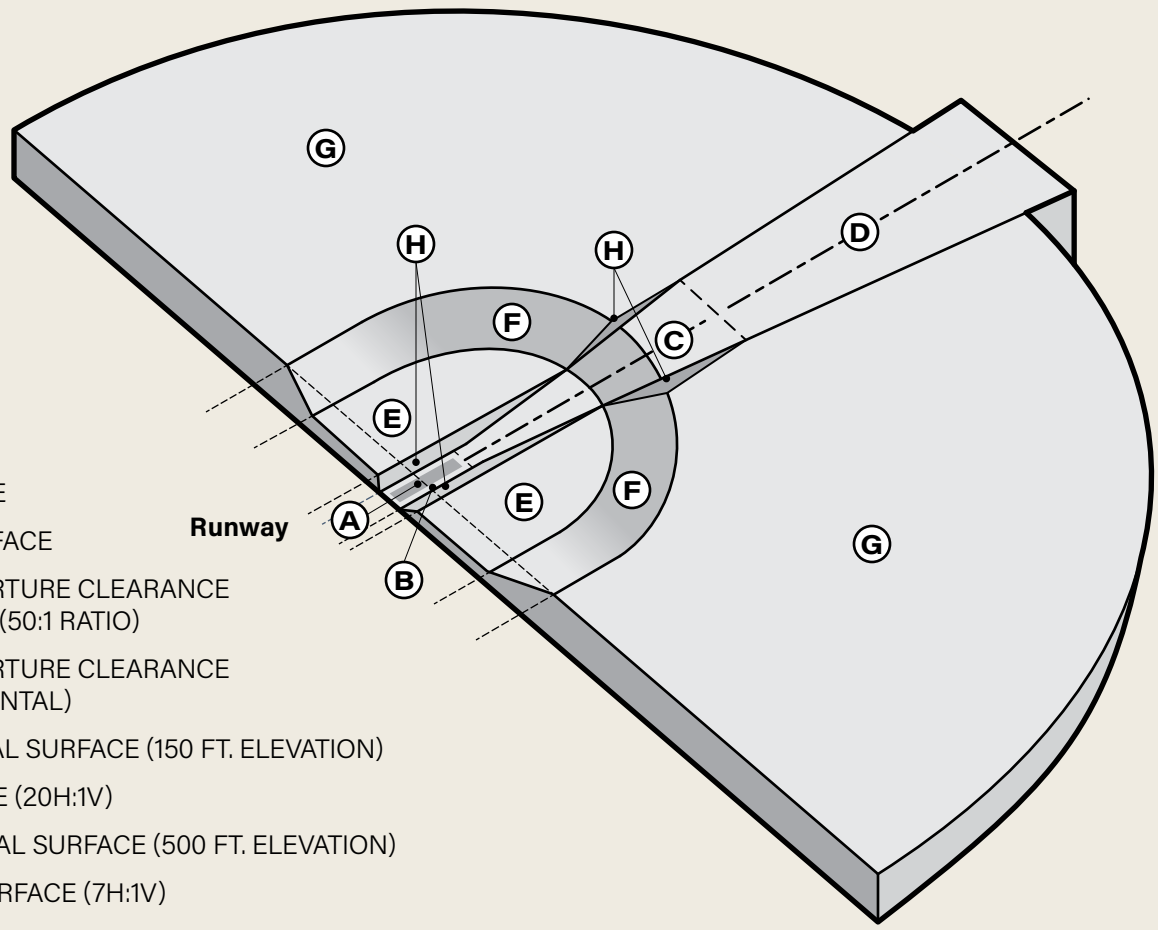
Figure 5-3
2026 AICUZ Clear Zones and Accident Potential Zones for Maxwell AFB

5.2 IMAGINARY SURFACES

The DoD and Federal Aviation Administration (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. Imaginary surfaces collectively form a "bowl" around the airfield to ensure safe flight approaches, departures, and pattern operations. Potential obstructions could include natural terrain and man-made features such as buildings, towers, poles, wind turbines, cell towers, and other vertical obstructions that could impair airspace navigation.

There are different imaginary surfaces for fixed-wing runways (depending on the types of aircraft supported by the runway) and rotary-wing runways/helipads. **Figure 5-4** depicts the imaginary surfaces for typical Class B fixed-wing runways like those at Maxwell AFB. **Table 5-2** provides brief descriptions of each of these surfaces. **Figure 5-5** depicts the actual runway airspace imaginary surfaces specific to Maxwell AFB's Class B runway. In general, the Air Force does not permit aboveground structures on the primary surface (located on base), and height restrictions apply to transitional surfaces and approach and departure surfaces. Height restrictions are more stringent for areas closer to the runway and flight paths.

Figure 5-4
Imaginary Surfaces and Transition Planes for Class B Fixed-Wing Runways



A. PRIMARY SURFACE
B. CLEAR ZONE SURFACE
C. APPROACH-DEPARTURE CLEARANCE SURFACE (SLOPE) (50:1 RATIO)
D. APPROACH-DEPARTURE CLEARANCE SURFACE (HORIZONTAL)
E. INNER HORIZONTAL SURFACE (150 FT. ELEVATION)
F. CONICAL SURFACE (20H:1V)
G. OUTER HORIZONTAL SURFACE (500 FT. ELEVATION)
H. TRANSITIONAL SURFACE (7H:1V)

Source: UFC 3-260-01 Airfield and Heliport Planning and Design

Table 5-2

Descriptions of Imaginary Surfaces for Military Airfields with Class B Runways

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 a point 50,000 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.
Inner Horizontal Surface	This imaginary surface is an oval plane at a height of 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 that is located 500 feet above the established airfield elevation and extends 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, the conical, and the outer horizontal surfaces.

Source: UFC 3-260-01 Airfield and Heliport Planning and Design.

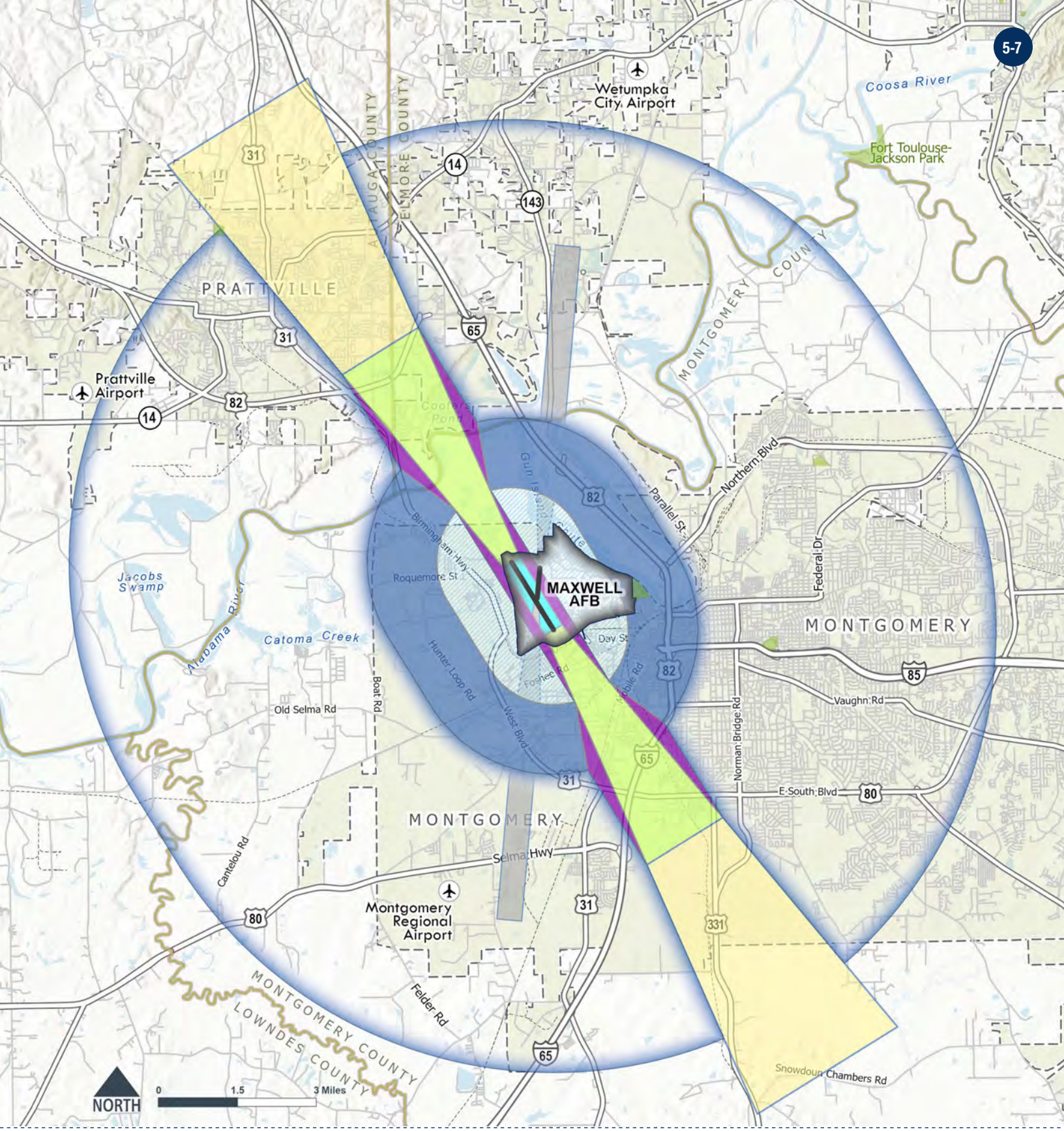
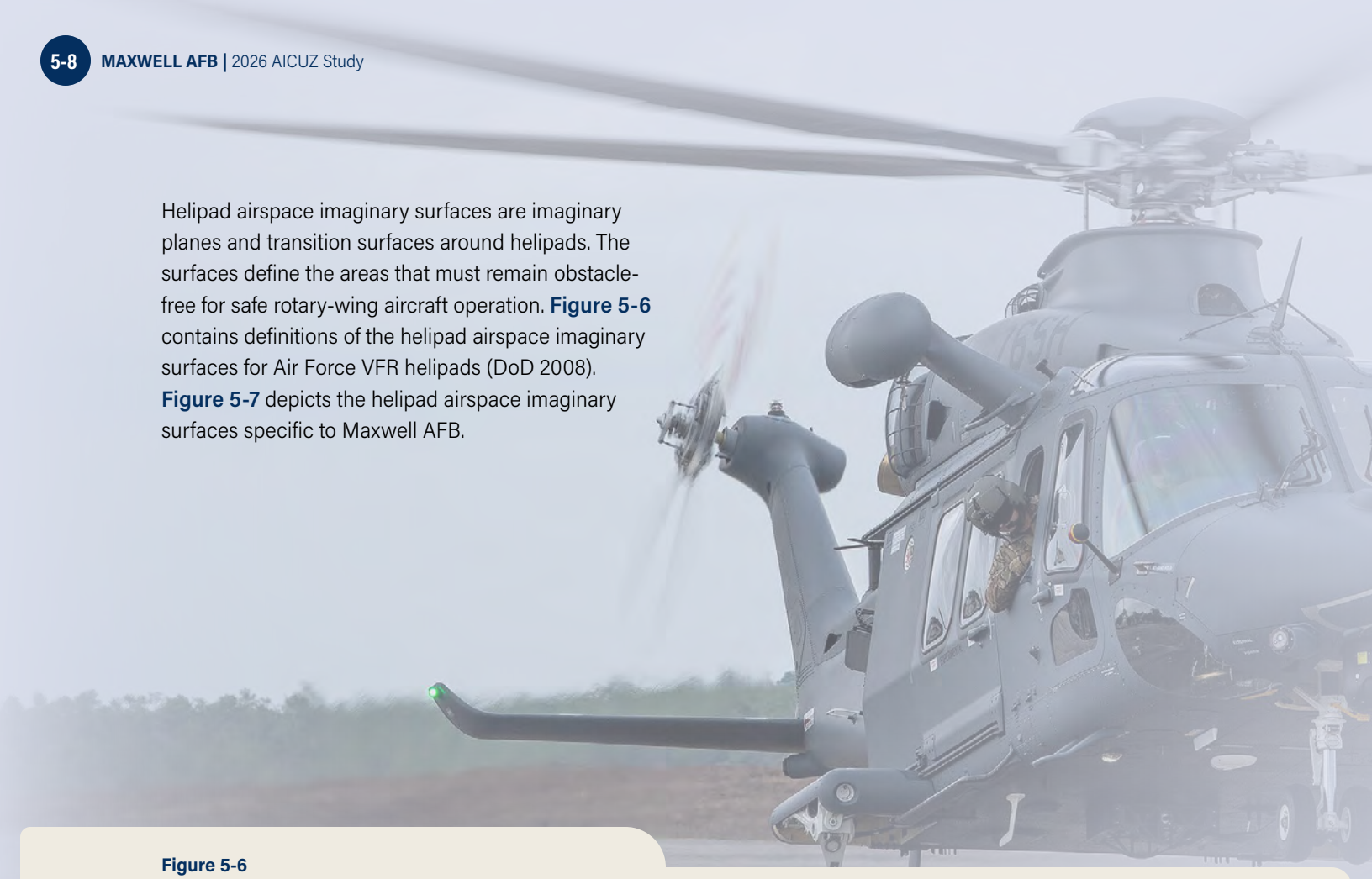


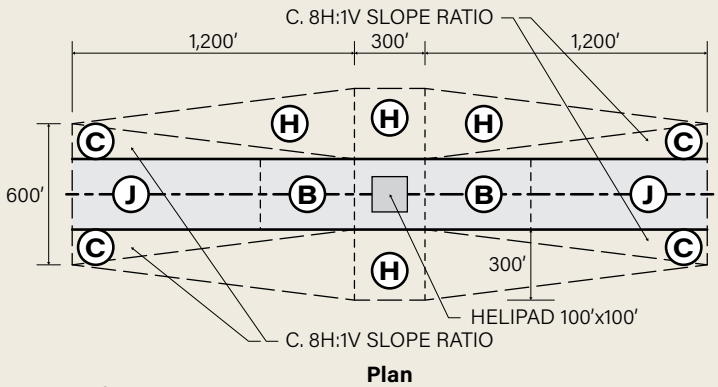
Figure 5-5
Imaginary Surfaces and Transition Planes for Maxwell AFB



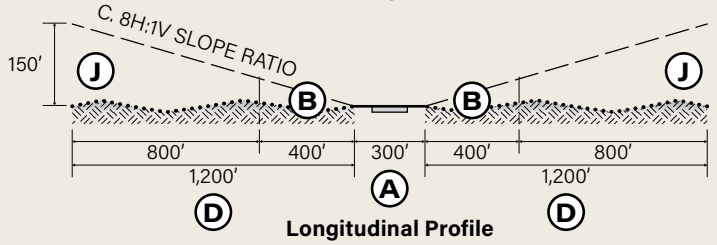
Helipad airspace imaginary surfaces are imaginary planes and transition surfaces around helipads. The surfaces define the areas that must remain obstacle-free for safe rotary-wing aircraft operation. **Figure 5-6** contains definitions of the helipad airspace imaginary surfaces for Air Force VFR helipads (DoD 2008). **Figure 5-7** depicts the helipad airspace imaginary surfaces specific to Maxwell AFB.

Figure 5-6

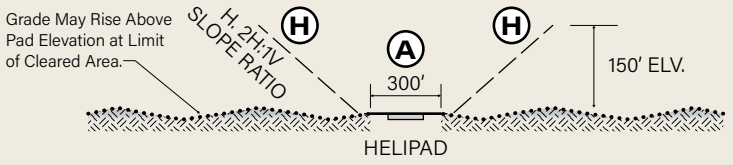
Imaginary Surfaces and Transition Planes for VFR Helipads



Plan

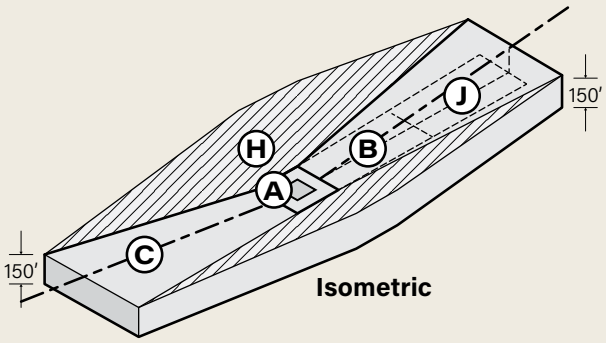


Longitudinal Profile



Transverse Section

NOT TO SCALE



Isometric

A. PRIMARY SURFACE
B. CLEAR ZONE SURFACE
C. APPROACH-DEPARTURE CLEARANCE SURFACE (SLOPE)
D. APPROACH-DEPARTURE CLEARANCE SURFACE (HORIZONTAL)
E. NOT USED
F. NOT USED
G. NOT USED
H. TRANSITIONAL SURFACE
I. NOT USED
J. ACCIDENTAL POTENTIAL ZONE (APZ 1)

1. Approach-Departure Clearance Surface (C), Clear Zones (B), and APZs (J) applicable to both ends of Runway.
2. For Army Hospital Helipads:
   A. The slope of the approach B. Departure clearance surface shall be 16:4:1 when Chapi is used. C. The length of the approach. D. Departure Clearance Surface be 749.82m (2,460′) when Chapi is used. E. The width of sloped portion of Approach-Departure Surface at end of sloped portion shall be 278.90m (915′) when a Chapi is used.

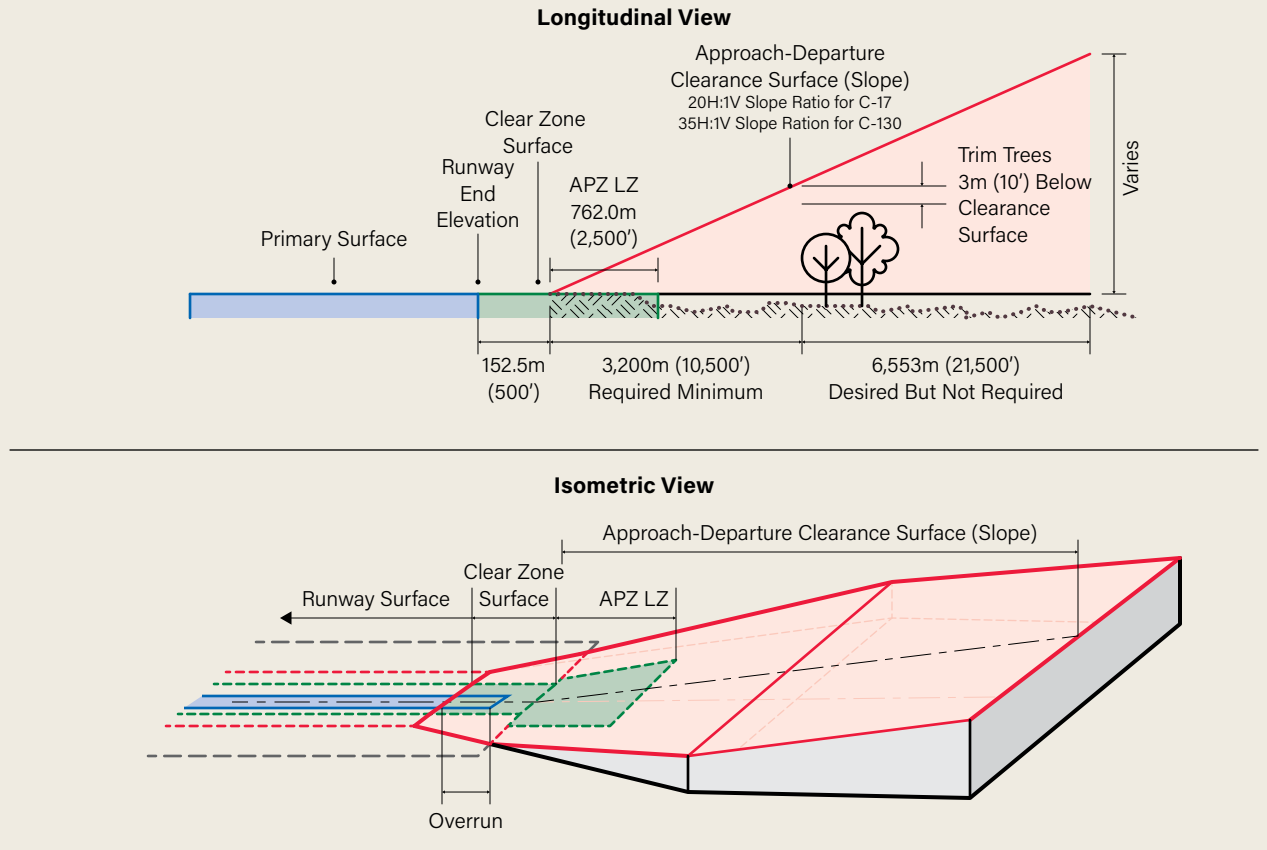
Source: UFC 3-260-01.

Landing Zone imaginary surfaces, like those present for Maxwell AFB's assault strip, define the imaginary planes and transition surfaces required to be obstacle-free for safe operation of C-130 aircraft performing assault takeoffs and landings. Within the APZ LZ, limit the following, where possible:

- Actions that release any substances into the air that would impair visibility or otherwise interfere with operating aircraft, such as steam, dust, and smoke.
- Actions that produce electrical emissions that would interfere with aircraft and/or communications or navigational aid systems.
- Actions that produce light emissions, direct or indirect (reflective), that might interfere with pilot vision.
- Items that unnecessarily attract birds or waterfowl, such as sanitary landfills, feeding stations, or certain types of crops or vegetation.
- Explosive facilities or activities.
- Uses that concentrate people, such as housing areas, dining or medical facilities, and recreational fields that include spectators.

Figure 5-7

Assault Strip Imaginary Surfaces and Transition Planes for Maxwell AFB



NOT TO SCALE

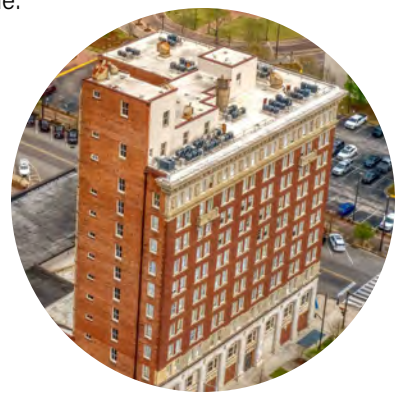
Source: UFC 3-260-01, 4 February 2019, Change 3, 4 February 2026

Figure 5-8
Helipad Airspace Imaginary Surfaces and Transition Planes for Maxwell AFB

5.3 HAZARDS TO AIRCRAFT FLIGHT ZONE

Certain land uses and activities pose potential hazards to flight. To ensure land uses and activities do not threaten pilot and citizen safety, the Air Force has identified the HAFZ. The HAFZ boundary may change with the encroachment issue at hand, but at a minimum, the HAFZ encompasses the imaginary surfaces. For instance, issues related to bird/wildlife aircraft strike hazards may follow natural boundaries, encompass local bodies of water, and extend along flight paths. Unlike noise zones and safety zones, the HAFZ does not have recommended land use compatibility guidelines. Instead, it is a consultation zone recommending that project applicants and local planning bodies consult with the Air Force to ensure the project concept is compatible with Air Force operations. These land use and activity compatibility considerations include:

Height



Tall objects can pose significant hazards to flight operations or interfere with navigational equipment (including radar). City/county agencies involved with approvals of permits for construction should require developers to submit calculations showing that projects meet the height restriction criteria of 14 Code of Federal Regulations (CFR) 77.17 for the specific airfield described in the AICUZ study. City and county agencies may also consider requiring a "Determination of No Hazard" issued by the FAA for any tall objects within this zone.

Visual Interference

Industrial or agricultural sources of smoke, dust, and steam in the airfield vicinity can obstruct a pilot's vision during takeoff, landing, or other periods of low-altitude flight. Close coordination between the installation and landowners can often mitigate these concerns. For example, irrigating before plowing can greatly reduce dust dispersal.

Light Emissions

Bright lights, either direct or reflected, in the airfield vicinity can impair a pilot's vision, especially at night. A sudden flash from a bright light causes a spot or "halo" to remain at the center of the visual field for a few seconds or more, rendering a person virtually blind to all other visual input. This is particularly dangerous for pilots at night when the flash can diminish the eye's adaptation to darkness. The eyes partially recover from this adaptation in a matter of minutes, but full adaptation typically requires 40 to 45 minutes. Specific examples of light emissions that can interfere with the safety of nearby aviation operations include:

- **Lasers that emit in the visible spectrum,** which can be potentially harmful to a pilot's vision during both day and night.
- **The increasing use of energy-efficient light-emitting diode (LED) lighting,** which poses potential conflicts in areas where pilots use night vision goggles (NVGs). NVGs can exaggerate the brightness of these lights, interfering with pilot vision.
- **The use of red LED lights to mark obstructions,** which can produce an unintended safety consequence because red LED lights are not visible on most NVG models, rendering them invisible to NVG users in the area.

Bird/Wildlife Aircraft Strike Hazard (BASH)

Wildlife represents a significant hazard to flight operations. Birds are drawn to different habitat types found in the airfield environment, including hedges, grass, brush, forest, water, and even the warm pavement of the runways. Due to the high aircraft speeds, collisions with wildlife can happen with considerable force. Although most bird and animal strikes do not result in crashes, they cause structural and mechanical damage to aircraft as well as loss of flight time.

Most aircraft collisions occur below 2,000 feet AGL. To reduce the potential of a BASH incident, the Air Force recommends that land uses that attract birds not be located near installations with active air operations. These land uses include:

- Waste disposal operations
- Wastewater treatment facilities
- Transfer stations
- Landfills
- Golf courses
- Wetlands
- Storm water ponds
- Dredge disposal sites

Birds in search of food will flock to landfills, increasing the probability of BASH occurrences near these facilities. Landfill operators can use design modifications to reduce the attractiveness of these types of land uses to birds and other wildlife.

Radio Frequency/ Electromagnetic Interference

The American National Standards Institute defines electromagnetic interference (EMI) as any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics/electrical equipment. EMI can be induced intentionally, as in forms of electronic warfare, or unintentionally, because of spurious emissions and responses, such as high-tension line leakage and industrial machinery. In addition, EMI may be caused by atmospheric phenomena, such as lightning or precipitation static.

New generations of military aircraft are highly dependent on complex electronic systems for navigation and critical flight and mission-related functions. Consequently, communities should use care when siting any activities that create EMI. Many sources are low-level emitters of EMI but, when combined, have a compounded effect. EMI also affects consumer devices such as cell phones, FM radios, television reception, and garage door openers. In some cases, the source of interference occurs when consumer electronics use frequencies set aside for military use.

Drones/Unmanned Aircraft Systems (UAS)

The use of drones near military airfields poses a serious flight safety hazard due to the potential for a mid-air collision between military aircraft and small- to medium-sized drones. The FAA maintains specific guidance about where operators can fly drones. Currently, non-DoD drone operations are not permitted within certain zones surrounding military bases. Additional restrictions are in place around airports, sports stadiums, and security sensitive areas. For more information on drone use in and around DoD airfields, visit the FAA's website at: www.faa.gov/uas.

In 2015, the FAA created a new statutory requirement that applies to all privately owned, unmanned aircraft that weigh more than 55 pounds. The FAA's goal is to allow the "opportunity to educate new aircraft users before they fly, so that they know the airspace rules and understand that they are ultimately accountable" for incidents that may occur due to their aircraft.

Presently, users are required to register aircraft meeting the requirements in a national database. The registration is web-based, and registrants will be required to provide a nominal fee of $5 per application. This registration will be valid for a period not to exceed three years.

The FAA distinguishes between recreational UAS flyers and commercial operators and has a process for operation of these aircraft. Due to the ever-changing environment, drone operators should visit the FAA website (mentioned above) to ensure they have the most up-to-date guidance on how to operate legally and safely.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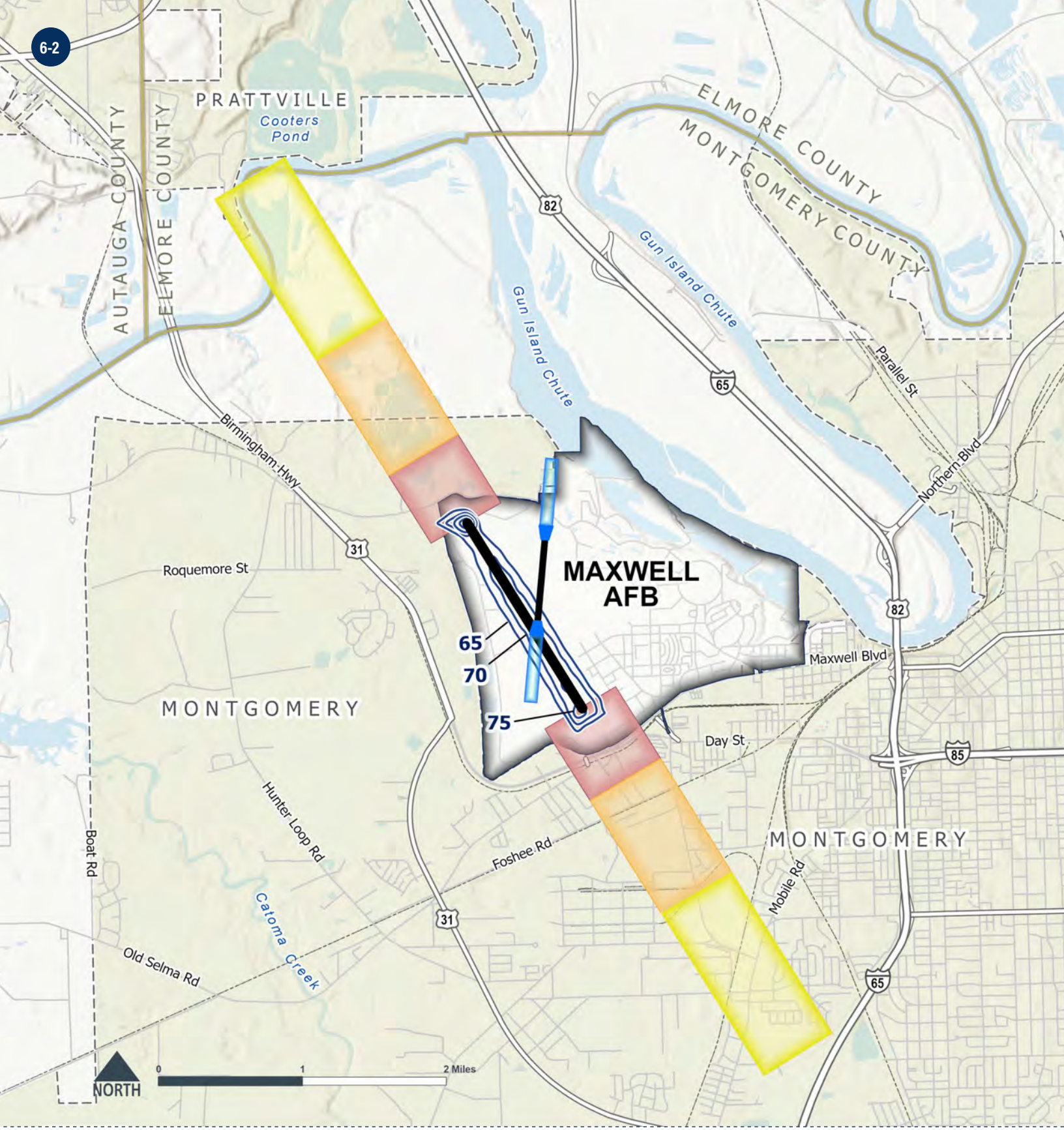
6. LAND USE COMPATIBILITY ANALYSIS

CZs, APZs, and noise zones, shown in **Figure 6-1,** make up the AICUZ footprint for an air installation. The HAFZ is also part of the AICUZ footprint and is shown in **Figure 5-4 i**n the previous chapter. This footprint defines the minimum recommended area where land use controls are needed and requested to enhance the health, safety, and welfare of those living or working near a military airfield while preserving the flying mission. The AICUZ footprint, combined with the guidance and recommendations set forth in the AICUZ study, are the fundamental tools necessary for the planning process to achieve overall land use compatibility. The Air Force recommends that local and regional governments adopt land use controls described in this chapter for areas within the AICUZ noise zones, CZs, APZs, and HAFZ into planning studies, regulations, and processes to promote compatible development around installations (i.e. overlay zones, land use controls , etc.).



2026 Noise Contour (dB)

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

Assault Strip
- Clear Zone (CZ)
- Accident Potential Zone Landing Zone (APZ LZ)

- Runway
- Maxwell AFB
- City Boundary

Figure 6-1
2026 Maxwell AFB
Composite AICUZ Footprint

6.1 LAND USE COMPATIBILITY GUIDELINES AND CLASSIFICATIONS

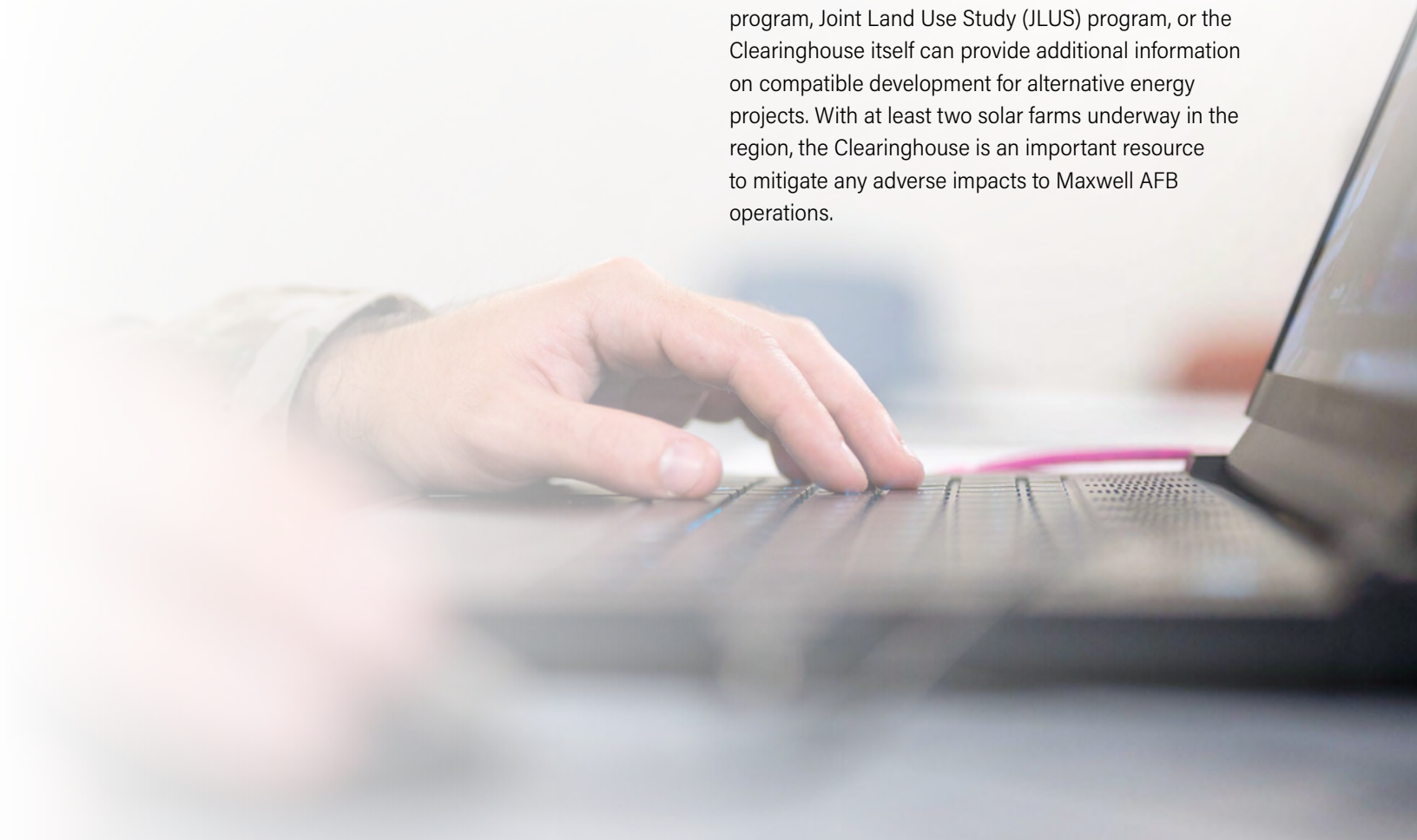
To establish long-term compatibility for lands within the vicinity of military air installations, the DoD has created land use compatibility recommendations based on the Federal Highway Administration's (FHWA) *Standard Land Use Coding Manual (SLUCM)* and the Federal Interagency Committee on Urban Noise's "Guidelines for Considering Noise in Land Use Planning and Control." These guidelines are used by DoD personnel for on-installation planning and for engaging with the local community to foster compatible land use development off the installation. **Table A-1 of Appendix A** shows the suggested land use compatibility guidelines within the CZs and APZs. **Table A-2 of Appendix A** provides land use compatibility recommendations within aircraft noise zones. **Section 6.4** presents the compatibility analysis and concerns within noise zones and APZs associated with Maxwell AFB.

6.2 PLANNING AUTHORITIES, STAKEHOLDERS, AND POLICIES

This section presents information for each governing body that has land use jurisdictions near Maxwell AFB, including descriptions of existing and future land uses, relevant stakeholder groups, and existing compatible planning policies and regulations.

Military Aviation and Installation Assurance Siting Clearinghouse

The Military Aviation and Installation Assurance Siting Clearinghouse was founded in 2011 to provide a timely and transparent process for evaluating and mitigating the impacts of alternative energy projects on DoD air installations. It works with developers, energy providers, state and local governments, and non-governmental organizations to inform its evaluation processes. The Clearinghouse recommends state and local governments to incentivize alternative energy development only in areas determined to be compatible with military operations. The AICUZ program, Joint Land Use Study (JLUS) program, or the Clearinghouse itself can provide additional information on compatible development for alternative energy projects. With at least two solar farms underway in the region, the Clearinghouse is an important resource to mitigate any adverse impacts to Maxwell AFB operations.



State of Alabama

Section 52 of the Code of Alabama covers planning in the state. It provides authority for cities to create a local planning system, empowered to conduct comprehensive and regulatory planning, through three bodies: the City Council, Planning Commission, and Board of Adjustment. Under Section 52, these three entities are charged with enacting legislation governing land use and land division, preparing a comprehensive plan, and implementing zoning ordinances. Critically, Article 4 of Section 52 requires zoning to be in accordance with a comprehensive plan. Therefore, cities must keep their comprehensive plans up to date to maintain valid authority for their zoning, and comprehensive plans must cover a wide range of topics to give the equally wide range of ordinances a sound legal basis.

Alabama Job Creation and Military Stability Commission

The Alabama Job Creation and Military Stability Commission was established by state legislation in 2011 with the purpose of proactively ensuring the stability of Alabama-assigned DoD resources. Its enabling legislation specifies a retired senior member from Maxwell AFB to be a member of the Commission. The Commission meets annually and publishes a report on the state and economic impact of DoD resources in Alabama. The Military Stability Foundation, a nonprofit established in 2011, supports the Commission's efforts in researching and preparing studies.

Military Land Use Planning Act

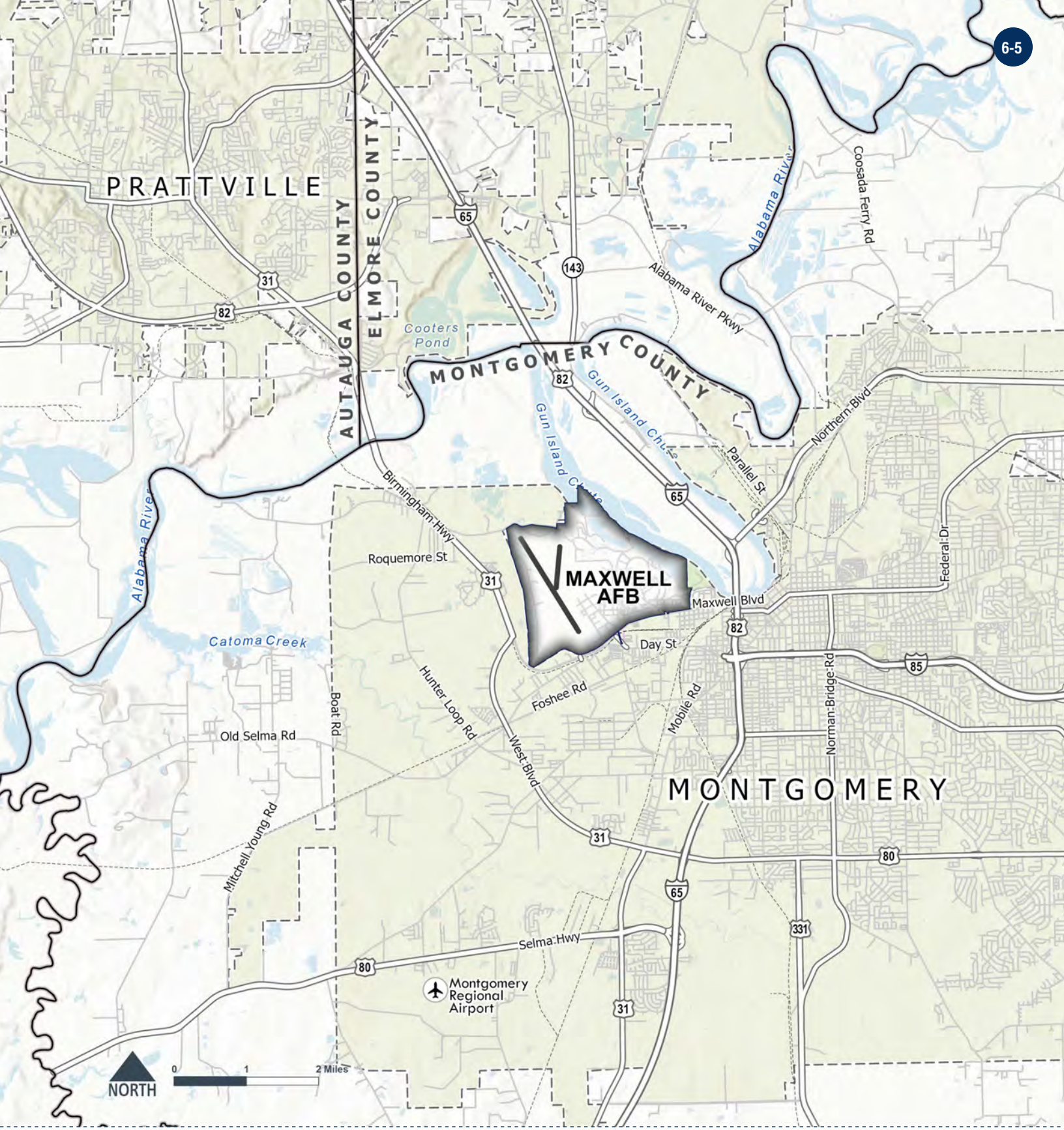
Recognizing the positive impact military installations have on the local and state economies, the Alabama state legislature found that local governments should cooperate with military installations to encourage compatible land use and prevent incompatible urban encroachment on military installations. Therefore, in 2014, the State of Alabama passed the Military Land Use Planning Act, which requires any local government within two miles of a military installation to provide the installation a written notice of any local impact issue. The law defines "local impact issue" as any proposed zoning plan, comprehensive master plan, or land development regulation that may affect airspace within two miles of an installation if approved. In the case of Maxwell AFB, this law applies to Montgomery City, Montgomery County, and Elmore County. Tall structures (defined as greater than 200 feet) or wind energy facilities are subject to the requirements of the Military Land Use Planning Act regardless of whether they fall within two miles of an installation.

Alabama Association of Regional Councils (AARC)

The Alabama Association of Regional Councils (AARC) is a nonprofit organization that provides a forum for collaboration for Regional Councils in the State of Alabama. By coordinating regional planning efforts and providing planning resources and training, the AARC expands and strengthens the capabilities of the Regional Councils to serve their respective local governments. Under the umbrella of the AARC, the Regional Councils undertake and coordinate statewide planning and economic development initiatives.

Central Alabama Regional Planning and Development Commission (CARPDC)

While not a government unit, the Central Alabama Regional Planning and Development Commission (CARPDC) is intended to complement and supplement local government activities. Regional councils are voluntary associations of local governments formed under Alabama law. These associations deal with the problems and planning needs that cross the boundaries of individual local governments or that require regional attention. Regional councils coordinate planning and provide a regional approach to problem solving through cooperative action. Although known by several different names, including councils of governments, regional planning commissions, associations of governments, and area councils, they are most often referred to as "regional councils" or "councils of governments." No legal distinction exists among the different names.



Runway
Maxwell AFB
City Boundary
County Boundary

Figure 6-2
Geography of Jurisdictions in Relation to the AICUZ Noise and Safety Zones

Montgomery County

Montgomery County is a primarily rural county that fully surrounds the City of Montgomery. Pursuant to Alabama Code § 11-52-30 (2023), Montgomery County is not authorized to prepare a comprehensive plan or zoning ordinances due to not meeting the population threshold of 600,000. As such, there is no planning department responsible for managing land in Montgomery County and no comprehensive plan or zoning code. Responsibilities for approving new developments are shared between the County Commissioners, County Administrative Office, and Engineering Department. No formal adoption of JLUS planning overlays has taken place. The County participated in the 2017 JLUS process and had county officials serving on the JLUS Policy and Technical Advisory Committees. Montgomery County is subject to the requirements of the Military Land Use Planning Act given its proximity to Maxwell AFB; portions of Maxwell AFB's APZs and HAFZ extend into the county.

Autauga County

Autauga County lies across the Alabama River west of Maxwell AFB. It, like Montgomery County, is primarily rural, and has no formal planning department. The Engineering Department handles transportation planning for the county, while the Commissioners and Commissioners Office handle administrative issues, such as land divisions. There is no zoning or comprehensive plan for Autauga County. The Autauga County line is just over two miles from Maxwell AFB, making it exempt from the requirements of the Military Land Use Planning Act; however, portions of the Maxwell AFB APZs and HAFZ extend into Autauga County. The County has Memorandums of Agreement (MOAs) in place with Maxwell AFB to notify the installation of potential tall developments within the HAFZ. The County instructs developers in the HAFZ to notify Maxwell AFB and approves new developments based on the recommendations of Maxwell AFB.

Elmore County

Elmore County lies across the Alabama River to the north of Maxwell AFB. It has no planning department, and subdivision of land is handled by the County Commission and County Engineer. There is no comprehensive plan or zoning code for the County. The County line is within two miles of Maxwell AFB, making it subject to the requirements of the Military Land Use Planning Act. Portions of the Maxwell AFB HAFZ extend into Elmore County.

Lowndes County

Lowndes County is a rural county to the southwest of Maxwell AFB. Like the previous counties, it has no planning department, zoning code, or comprehensive plan. Land development is handled by the County Commission and County Commission Office, with transportation issues handled by the Highway Department. It is greater than two miles from Maxwell AFB and therefore not subject to the requirements of the Military Land Use Planning Act. A small portion of Maxwell AFB's HAFZ extends into Lowndes County.

City of Montgomery

The City of Montgomery is one of two independent cities in Montgomery County. The Montgomery Planning Department oversees the planning functions for the city, including long range planning, zoning, land use, transportation planning, and managing public transit. In accordance with Alabama Code § 11-52-30 (2023), the City of Montgomery has planning jurisdiction for land up to three miles from the corporate limits of the City, which includes land in unincorporated Montgomery County.

The City of Montgomery has a long history of cooperation and coordination with Maxwell AFB, including working closely together on the 2017 JLUS. The Montgomery Comprehensive Plan was adopted in 2020 and establishes land use policies for future growth for the city through 2040. It includes recommendations from the JLUS. Portions of Maxwell AFB's noise contours, APZs, and HAFZ cover the City of Montgomery.

Montgomery City maintains an Airport Hazard Area District to regulate development and protect Maxwell AFB from hazards to air operations. This zone limits tree and building heights that may interfere with air operations at Maxwell AFB.

The City of Montgomery also has two MOAs with Maxwell AFB that formalize recommendations from the JLUS. They require notification to Maxwell AFB of development within the overlay areas identified by the JLUS, including the Safety Overlay (all development), BASH Overlay (for specific types of development that may attract birds), Vertical Obstruction Awareness Area (for tall structures), and all developments within two miles of Gunter Annex. The two MOAs delineate separate notification and input procedures for industrial and non-industrial developments, and both enable Maxwell AFB to submit input on the proposals.

City of Prattville

The City of Prattville Planning Department manages and plans the land within the city, which is bordered by Autauga, Elmore, and Montgomery Counties. It prepares and updates the zoning ordinances, comprehensive plan, and subdivision regulations, and handles permitting, building inspections, code enforcement, and floodplain management for the city. The Prattville Comprehensive Plan was adopted in 2021 and establishes the future land use and planning vision for the city through 2040.

Portions of the Maxwell AFB HAFZ cover areas of the City of Prattville, and a small portion of APZ II covers Prattville's southernmost extremes. The City of Prattville does not maintain any noise or safety overlays related to Maxwell AFB, nor does it implement any height restrictions in its zoning code related to air operations. While the comprehensive plan notes the city's proximity to Maxwell AFB and the vital role it plays as a large regional employer, it does not integrate any JLUS recommendations. Officials from the City of Prattville did participate on the Policy Committee and Technical Advisory Committee of the JLUS process.

City of Millbrook

The City of Millbrook is an independent city bordering Autauga and Elmore Counties approximately four miles north of Maxwell AFB. Its Planning Department maintains the zoning code and ordinances, oversees the subdivision process, and assists in conducting long-range planning for the city. Development proposals are initially reviewed by the Building Department, and comprehensive planning responsibilities are shared with the Economic Development Department. The Planning Commission is authorized by Millbrook's code of ordinances to create and maintain a comprehensive plan; however, the current Comprehensive Plan was adopted in 2006 and is no longer used to guide future growth in the city due to its age.

Millbrook is currently in the process of updating its zoning map, which is expected to be complete in 2025. The tallest structure permissible under the zoning ordinances is 45 feet. Telecommunications towers are permitted to extend up to 12 feet from the top of buildings, for a height total of 57 feet. There are no overlay districts or other zoning protections related to flight operations or noise.

The Maxwell AFB HAFZ covers portions of the City of Millbrook. The City of Millbrook participated in the JLUS process; city officials served on the Policy Committee and Technical Advisory Committee. It does not maintain any formal memorandums or communication practices with Maxwell AFB.

6.3 LAND USE

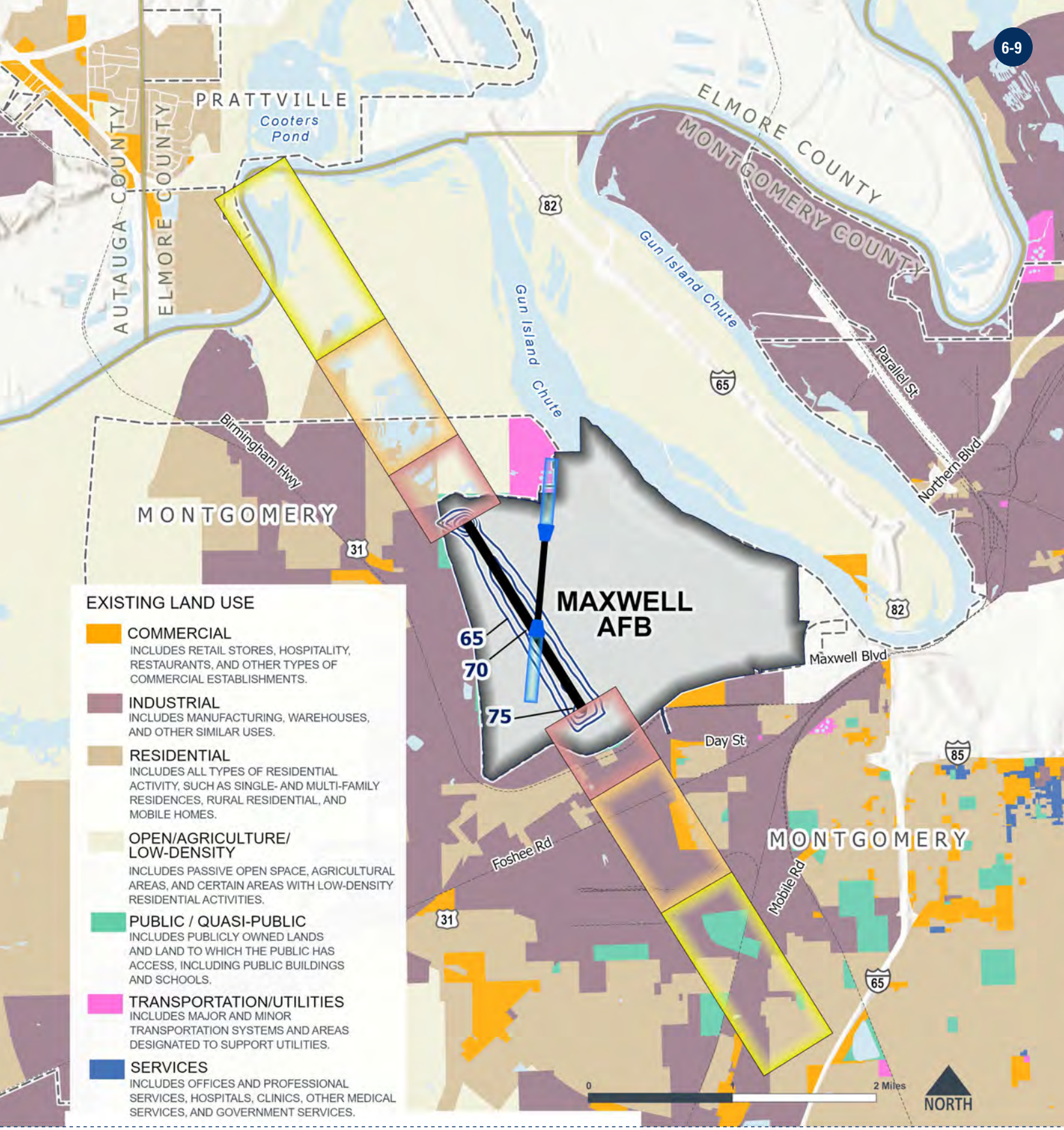
The land use compatibility analysis presented in this study evaluates existing and future land uses near Maxwell AFB to determine compatibility conditions. Existing land use is assessed to determine current land use activity, while future land use is used to project development and potential growth areas. Land use geographic information system (GIS) data utilized to inform the analysis were obtained from the County of Montgomery and the cities of Montgomery and Prattville.

In order to analyze the compatibility of nearby land uses surrounding Maxwell AFB, each parcel in the data was characterized into use categories defined by the SLUCM tables. While the specific categories used by each local government may vary, these generalized categories provide a starting point for each analysis:

- **Residential.** Designations and zoning for family and personal living and sleeping, including rural/ low density development, medium density, and high-density towers. Types of units include, but are not limited to, single-family detached dwellings; duplex, triplex and quadplexes; mobile homes or manufactured housing; apartment buildings; and condominiums.
- **Manufacturing.** Includes food, textile, apparel, household goods, and trades manufacturing (metals, stones, clays, glass, plastic, and rubber, etc.).
- **Transportation, Communication, and Utilities.** Includes public and private transportation uses (road, rail, air, marine); parking infrastructure; communication uses (cell towers, relay towers, etc.); public, semi-public, and private utilities (power stations, power transmission lines, substations, wastewater treatment plants, and solid waste disposal facilities, etc.).
- **Trade.** Includes wholesale trade, retail trade (neighborhood, community, regional and super-regional food, transportation, home furnishings, etc.), financial services, personal and professional services, medical services, government and educational services, and religious activities.
- **Cultural, Entertainment and Recreational.** Includes cultural activity uses, nature exhibits, public assembly, indoor auditoriums and outdoor amphitheaters, outdoor sports, amusements and recreational activities, parks, etc.
- **Resource Production and Extraction.** Includes farm and livestock agriculture, forestry and fishing activities, resource mining, etc.
- **Other.** Includes undeveloped land and water areas.

Typically, municipal governments have land or zoning codes that differ slightly from the FHWA SLUCM categories. Local land and zoning codes commonly, but not always, categorize land use around the previously mentioned categories. It then falls upon the community (base) planner to rectify the discrepancies between the DoD's use of SLUCM standards and all the relevant local jurisdiction's land use typologies to provide a meaningful analysis. Please reference **Appendix C** for additional information.

Appendix A, Land Use Compatibility Tables, provides further description on the SLUCM land use categories along with notes on general allowable uses for Maxwell AFB surrounding jurisdictions.



2026 Noise Contour (dB)

Main Runway

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

Assault Strip

- Clear Zone (CZ)
- Accident Potential Zone Landing Zone (APZ LZ)

- Runway
- Maxwell AFB
- City Boundary

Figure 6-3

Existing Land Use and 2026 Maxwell AFB AICUZ Study Noise Contours, CZs, and APZs

The land use compatibility analysis performed as part of this AICUZ study identifies existing and future land uses near Maxwell AFB. Existing land uses were assessed to determine current land use activity, while future land use plans were used to project potential development and growth areas. Existing land use and parcel data provided by Montgomery County and the cities of Montgomery and Prattville were evaluated to ensure an actual account of land use activity regardless of conformity to zoning classification or designated planning or permitted use. Additionally, local management plans, policies, ordinances, and zoning regulations were evaluated to determine the type and extent of land use allowed in specific areas.

The State of Alabama Code §11-52-30 (2023) states that only counties with a population of at least 600,000 are authorized to zone land outside of municipal corporate limits. The most populous county in the AICUZ Study area is Montgomery County, with a population of approximately 229,000 in 2020. As such, the only zoned lands surrounding Maxwell AFB are in the cities of Montgomery, Prattville, and Millbrook. Therefore, existing and future land use designations were used as the primary elements for compatibility analyses to best represent the uses that are, and will be, located on the land surrounding Maxwell AFB.

6.3.1 Existing Land Uses

Maxwell AFB is in a developed area on the western edge of the City of Montgomery. To the south and east are residential, commercial, and industrial land uses. Residential and commercial development continues to the west and north immediately surrounding Maxwell AFB. Further west and north of the installation, land uses are more rural as the city transitions to Montgomery County, then Autauga and Elmore counties. There are continued residential and commercial developments along key transportation corridors such as US 31 immediately west of the installation. Just west of US 31, however, are rural lands that are agricultural or undeveloped. Land across the Alabama River to the north is rural in nature, with undeveloped wetlands, agricultural land, and low-density housing. Further north is the City of Prattville, with industrial, commercial, and residential development.

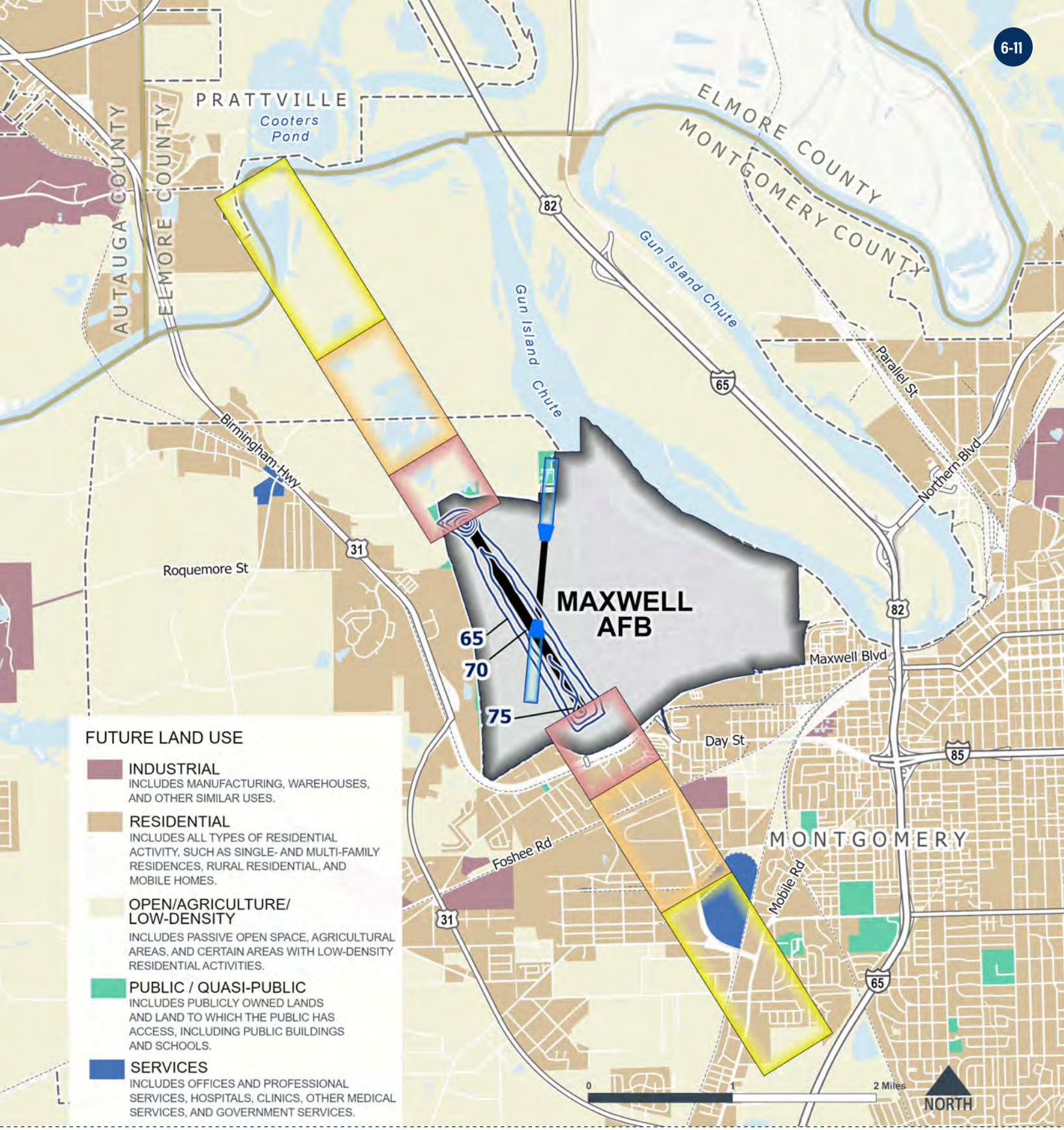
The airfield's associated noise zones, CZs, and APZs also span across developed and undeveloped areas of Autauga and Montgomery Counties, as well as the cities of Montgomery and Prattville. Areas of specific land use compatibility concerns within the Maxwell AFB noise contours, CZs, and APZs are further evaluated in **Section 6.4, Compatibility Concerns.**

Figure 6-3 overlays the 2026 Maxwell AFB AICUZ Study noise contours, CZs, and APZs with current generalized land uses in the City of Montgomery, Montgomery County, the City of Prattville, Elmore County, and Autauga County. Land within the counties, which is not formally zoned or planned, is rural in nature and classified as open/agricultural. **(For details on how the generalized zoning layer was created, see Appendix C.)**

6.3.2 Future Land Use

Figure 6-4 overlays the 2026 Maxwell AFB AICUZ Study noise contours, CZs, and APZs with future generalized land uses in the vicinity of Maxwell AFB. **(For details on how the generalized zoning layer was created, see Appendix C.)**

The City of Montgomery Comprehensive Plan calls for increased residential development immediately surrounding Maxwell AFB. There are small pockets of industrial, service, and public/quasi-public uses throughout the city. Beyond the city limits in Montgomery, Elmore, and Autauga counties, land is continued to be considered open/agricultural/low-density. In the City of Prattville to the north, land is primarily designated residential and industrial.



2026 Noise Contour (dB)

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

Assault Strip
- Clear Zone (CZ)
- Accident Potential Zone Landing Zone (APZ LZ)

- Runway
- Maxwell AFB
- City Boundary

Figure 6-4
Future Land Use and 2026 Maxwell AICUZ Study Noise Contours, CZs, and APZs

6.4 COMPATIBILITY CONCERNS

6.4.1 Land Use Analysis

Land use describes the development and management of an area as characterized by its dominant function. To compare land use consistently across jurisdictions, this analysis uses generalized land use classifications (e.g., commercial, industrial, residential) rather than more specific categories (e.g., high-density residential, medium-density residential, low-density residential). These generalized land use categories, derived from the DoD AICUZ compatibility guidelines **(Tables A-1 and A-2 of Appendix A)** and shown in **Table 6-1,** are not exact representations of the local community's land use designations but combine similar land uses like those introduced in **Section 6.3 Land Use and Proposed Development.**

Table 6-1 provides compatibility guidelines for the generalized land use categories. Land use compatibility falls into one of four categories:

1. Compatible;
2. Compatible with Restrictions;
3. Incompatible; and,
4. Incompatible with Exceptions.

Conditionally compatible land uses (i.e., categories 2 and 4) can be considered compatible if noise attenuation measures are incorporated into the design and construction of structures or density limitations are imposed.

Table 6-1
Generalized Land Use Categories and Noise/Safety Compatibility

GENERALIZED LAND USE CATEGORY[1]	NOISE ZONE (dB DNL)						APZs			
	<65	65-70	70-75	75-80	80-85	85+	CZ	APZ I	APZ II	APZ-LZ[5]
Residential	Yes	No[2]	No[2]	No	No	No	No	No	No[3]	No
Commercial	Yes	Yes	Yes[4]	Yes[4]	No	No	No	Yes[4]	Yes[4]	No
Industrial	Yes	Yes	Yes	Yes	Yes[4]	No	No	Yes[4]	Yes[4]	Yes[4]
Services	Yes	Yes[4]	Yes[4]	Yes[4]	No	No	No	No	Yes[4]	No
Public/Quasi-Public	Yes	Yes[4]	Yes[4]	Yes[4]	No	No	No	No	Yes[4]	No
Recreation	Yes	Yes[4]	Yes[4]	No	No	No	No	Yes[4]	Yes[4]	Yes[4]
Open/Agriculture/Low Density	Yes	Yes[4]	Yes[4]	Yes[4]	Yes[4]	Yes[4]	No	Yes[4]	Yes[4]	Yes[4]
Transportation/Utilities	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes

Key: COMPATIBLE | COMPATIBLE WITH RESTRICTIONS | INCOMPATIBLE | INCOMPATIBLE WITH EXCEPTIONS

1. This generalized table demonstrates the land compatibility guidelines. Refer to **Appendix A** for use in determining land use compatibility.
2. Residential land uses within the greater than 65 dB DNL noise zones are considered incompatible. However, if residential uses are considered essential, noise-attenuation measures should be incorporated into the building structures.
3. Residential land uses in APZ II are considered incompatible, except when development is limited to less than two dwellings per acre.
4. Compatible with restrictions indicates that some mitigation measures are needed for these uses to ensure full compatibility with air operations. See **Appendix A,** Land Use Compatibility Tables, for more information.
5. While specific guidance generalized to land uses as shown in this table are not provided for APZ LZs, the intent of UFC 3-260-01 and DoDI 4165.57 are to limit any uses that would potentially interfere with flight operations or concentrate people. Thus, for this study, the requirements of UFC 3-260-01 have been generalized to reflect minimal development compatible within the APZ-LZ.

Source: Adapted from DoDI 4165.57.

6.4.2 Existing Land Use Compatibility Concerns

Due to the small AICUZ noise footprint beyond the Maxwell AFB installation, there are no significant incompatible land uses within the City of Montgomery. **Figure 6-5** illustrates the land use compatibility analysis within the Maxwell AFB noise zones. As shown in **Figure 6-5** and **Table 6-2,** there are 0.6 acres of Public/Quasi-Public land use within the 65–69 dB noise zone. This land use is compatible with restrictions. Generally, public/quasi-public uses like public buildings or schools are permitted in the 65–69 dB noise zone with varying levels of noise level reduction (NLR) building practices implemented. See **Table A-2** for details on land use compatibility within noise zones, including restrictions and exceptions.

Figure 6-6 shows that there are incompatible land uses surrounding Maxwell AFB in the safety zones within the City of Montgomery and City of Prattville. As shown in **Table 6-3**, there are 264.3 acres of off-installation land within the Maxwell AFB CZs. There are 73.0 acres of residential, 108.5 acres of industrial, 15.5 acres of public/quasi-public, and 67.3 acres of open/agricultural/low-density land use within the CZs. All these land uses are incompatible. Day Street, Bell Street, and the Birmingham Highway converge at a busy interchange in the southern CZ. This use is considered compatible with restrictions. Streets, highways, and their associated rights of way are considered compatible in the CZ but are discouraged. 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.

There are 681.1 acres of off-installation land within APZ I. This area includes 136.3 acres of residential land use, which is considered incompatible. There are 27.6 acres of commercial, 295.9 acres of industrial, and 221.3 acres of open/agricultural/low-density land use, all of which are compatible with exceptions in APZ I. Generally, commercial trades, like wholesale, building materials and farm equipment, and automotive, marine, or aircraft trade uses are compatible. Traditional retail, such as retail stores, restaurants, department stores, or shopping centers are incompatible due to the density of people per acre they attract. Public and quasi-public uses can be permitted if they do not generate high concentrations of people. Open/agricultural/low-density uses are permitted with restrictions on density and intensity of use to limit exposure to safety hazards from flight operations. See **Table A-1** for details on restrictions and exceptions to land use compatibility in the safety zones.

As shown in **Table 6-3,** there are 835.6 acres within APZ II. There are 193.4 acres of residential land use, which is incompatible with exceptions in APZ II. Single-family residential can be compatible in APZ II if limited to no more than two dwelling units per acre; all other types of residential use are incompatible. There are 1.2 acres of commercial, 255.4 acres of industrial, 62.5 acres of public/quasi-public, and 323.1 acres of open/agricultural/low-density uses in APZ II. These uses are compatible with restrictions. Generally, commercial uses are compatible in APZ II except for shopping centers and eating/drinking establishments. Similar limits on concentrations of persons apply to the public/quasi-public and open/agricultural/low-density apply in APZ II as in APZ I.

Table 6-2

Off-Installation Existing Land Use Acreage within Noise Zones

DESIGNATION	GENERALIZED LAND USE CATEGORY[1]	65-69 dB DNL	70-74 dB DNL	75-79 dB DNL	GREATER THAN 80 dB DNL	TOTAL
Incompatible or Incompatible with Exceptions	Residential	–	–	–	–	–
	Commercial	–	–	–	–	–
	Industrial	–	–	–	–	–
	Services	–	–	–	–	–
	Public/Quasi-Public	–	–	–	–	–
	Recreation	–	–	–	–	–
	Open/Agriculture/Low Density	–	–	–	–	–
	Transportation/Utilities	–	–	–	–	–
Compatible or Compatible with Restrictions	Residential	–	–	–	–	–
	Commercial	–	–	–	–	–
	Industrial	–	–	–	–	–
	Services	–	–	–	–	–
	Public/Quasi-Public	0.6	–	–	–	**0.6**
	Recreation	–	–	–	–	–
	Open/Agriculture/Low Density	–	–	–	–	–
	Transportation/Utilities	–	–	–	–	–
Sub-total	**Incompatible**	**–**	**–**	**–**	**–**	**–**
	Compatible	**0.6**	**–**	**–**	**–**	**–**
Total		**0.6**	**–**	**–**	**–**	**0.6**

Note: Totals may not sum exactly due to rounding.

1. Refer to **Appendix A** for Details.

Table 6-3

Off-Installation Existing Land Use Acreage within CZs and APZs

DESIGNATION	GENERALIZED LAND USE CATEGORY[1]	CZ	APZ I	APZ II	APZ -LZ	TOTAL
Incompatible or Incompatible with Exceptions	Residential	73.0	136.3	193.4	—	**402.7**
	Commercial	—	—	—	—	**—**
	Industrial	108.5	—	—	—	**108.5**
	Services	—	—	—	—	**—**
	Public/Quasi-Public	15.5	—	—	—	**15.5**
	Recreation	—	—	—	—	**—**
	Open/Agriculture/Low Density	67.3	—	—	—	**67.3**
	Transportation/Utilities	—	—	—	—	**—**
Compatible or Compatible with Restrictions	Residential	—	—	—	—	**—**
	Commercial	—	27.6	1.2	—	**28.8**
	Industrial	—	295.9	255.4	—	**551.3**
	Services	—	—	—	—	**—**
	Public/Quasi-Public	—	—	62.5	—	**62.5**
	Recreation	—	—	—	—	**—**
	Open/Agriculture/Low Density	—	221.3	323.1	—	**544.4**
	Transportation/Utilities	—	—	—	12.4	**—**
Sub-total	**Incompatible**	**264.3**	**136.3**	**193.4**	**0**	**594.0**
	Compatible	**—**	**544.8**	**642.2**	**12.4**	**1,199.4**
Total		**264.3**	**681.1**	**835.6**	**12.4**	**1,793.4**

Note: Totals may not sum exactly due to rounding.

1. Refer to **Appendix A** for Details.

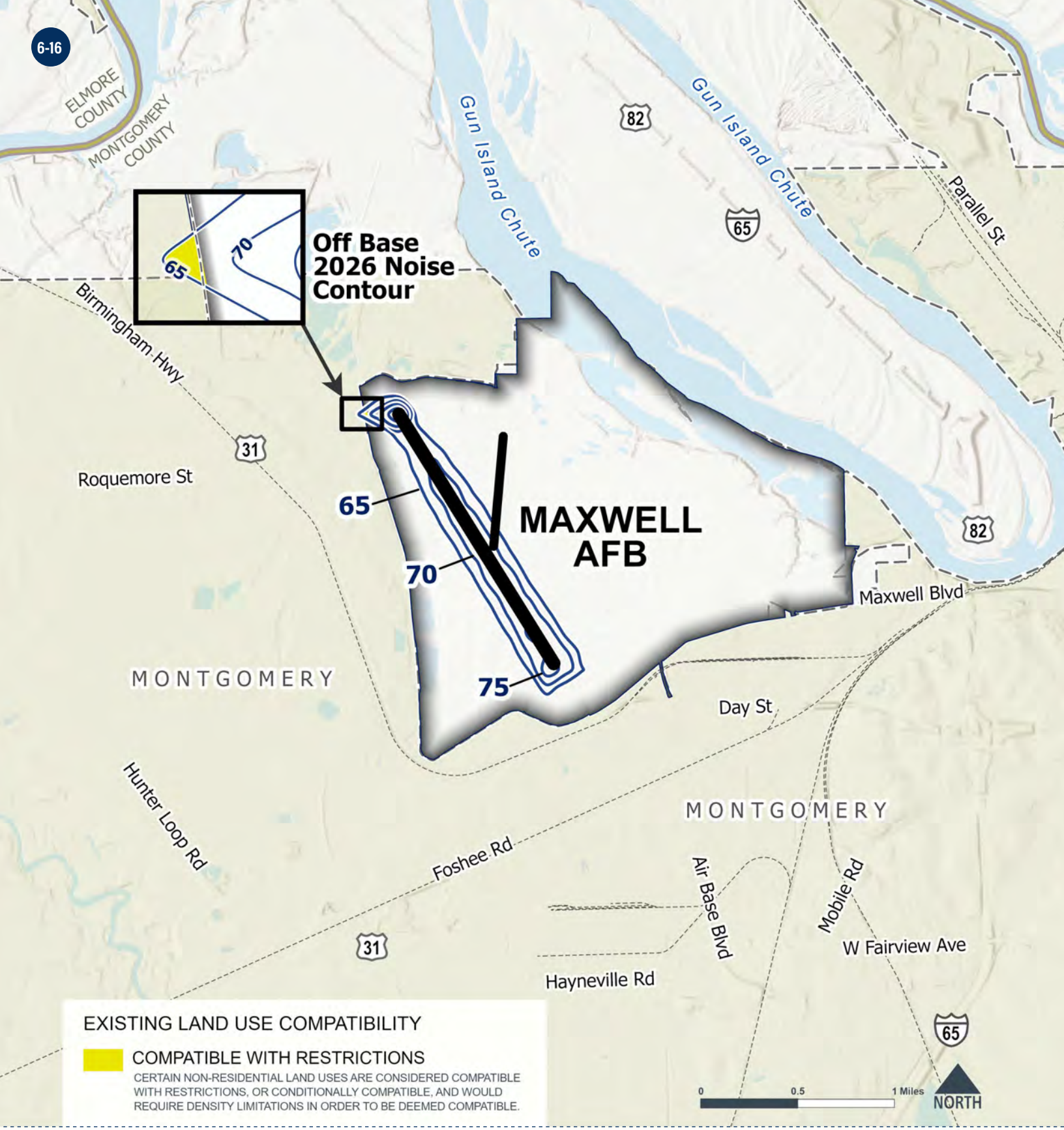
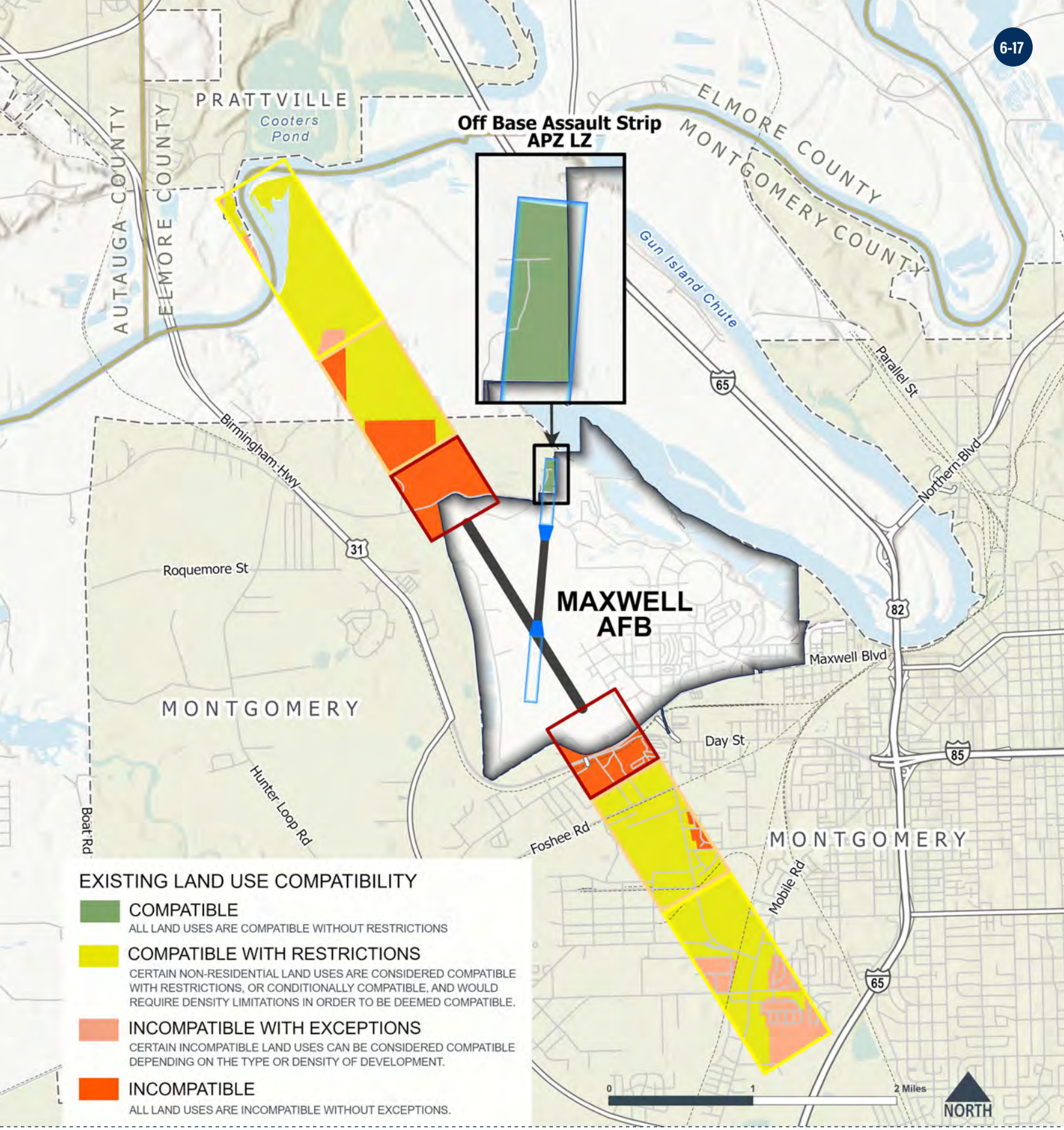


Figure 6-5
Incompatible Existing Land Use within Noise Contours



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

Assault Strip
- Clear Zone (CZ)
- Accident Potential Zone Landing Zone (APZ LZ)

- Runway
- Maxwell AFB
- City Boundary

Figure 6-6
Incompatible Existing Land Use within CZs and APZs

6.4.3 Future Land Use Compatibility Concerns

Future land use within Noise Contours, CZs and APZs are presented in **Figures 6-7 and 6-8** and the acreages by future land use type and their associated compatibility in **Tables 6-4 and 6-5.** The existing land uses discussed in **Section 6.4.2** are similar to the future land use classifications for the land surrounding Maxwell AFB; therefore, many of the compatibility classifications for specific uses match the existing land use analysis.

Future land designations for Montgomery County and the City of Prattville align with the existing land uses. Future land use types in the City of Montgomery generally align with the existing designations, however, the Comprehensive Plan envisions the area surrounding Maxwell AFB as much more residential than the present, which is dominated by industrial and residential uses.

As shown in **Table 6-4,** the comprehensive plan designates 0.6 acres of public/quasi-public land use within the 65–69 dB noise zone, which is considered compatible with restrictions. While it is unlikely a structure would be built on such a small parcel bordering Maxwell AFB, any public facilities built in this area are recommended to implement NLR measures detailed in **Table A-1** to mitigate noise impacts.

As shown in **Table 6-5,** there are 224.9 acres of designated land uses within the CZ. These include 70.5 acres of residential, 14.7 acres of public/quasi-public, and 139.7 acres of open/agricultural/low-density. All these uses are incompatible with the CZ.

In APZ I, there are 279.2 acres of residential and 9.5 acres of services, both of which are incompatible. There are 1.2 acres of industrial and 342.5 acres of open/agricultural/low-density land use, which are compatible with restrictions. Generally, compatible industrial uses in APZ I are limited to small-scale manufacturing or other industrial uses that do not generate smoke, pollutants, light, or other hazards to flight, nor generate concentrations of people within the APZ I. Similar restrictions on concentrations of people apply to open/agricultural/low-density uses in APZ I. **See Table A-1 for details.**

APZ II contains 822.3 acres of designated off-installation land uses. Among these, 281.2 acres are designated residential, which is generally considered incompatible, except when limited to no more than two dwelling units per acre. There are 76.8 acres of services, which is considered compatible with exceptions, those exceptions being hospitals and medical services, religious institutions, childcare, or other services that create large gatherings, congregations, or concentrations of people. There are 1.5 acres of public/quasi-public and 462.8 acres of open/agricultural/low-density use that are both compatible with restrictions; similar restrictions on concentration of people apply in these areas.

Future land use acreage totals within the safety zones may differ slightly from the existing land uses due to the comprehensive plan not designating a future land use for road rights-of-way.

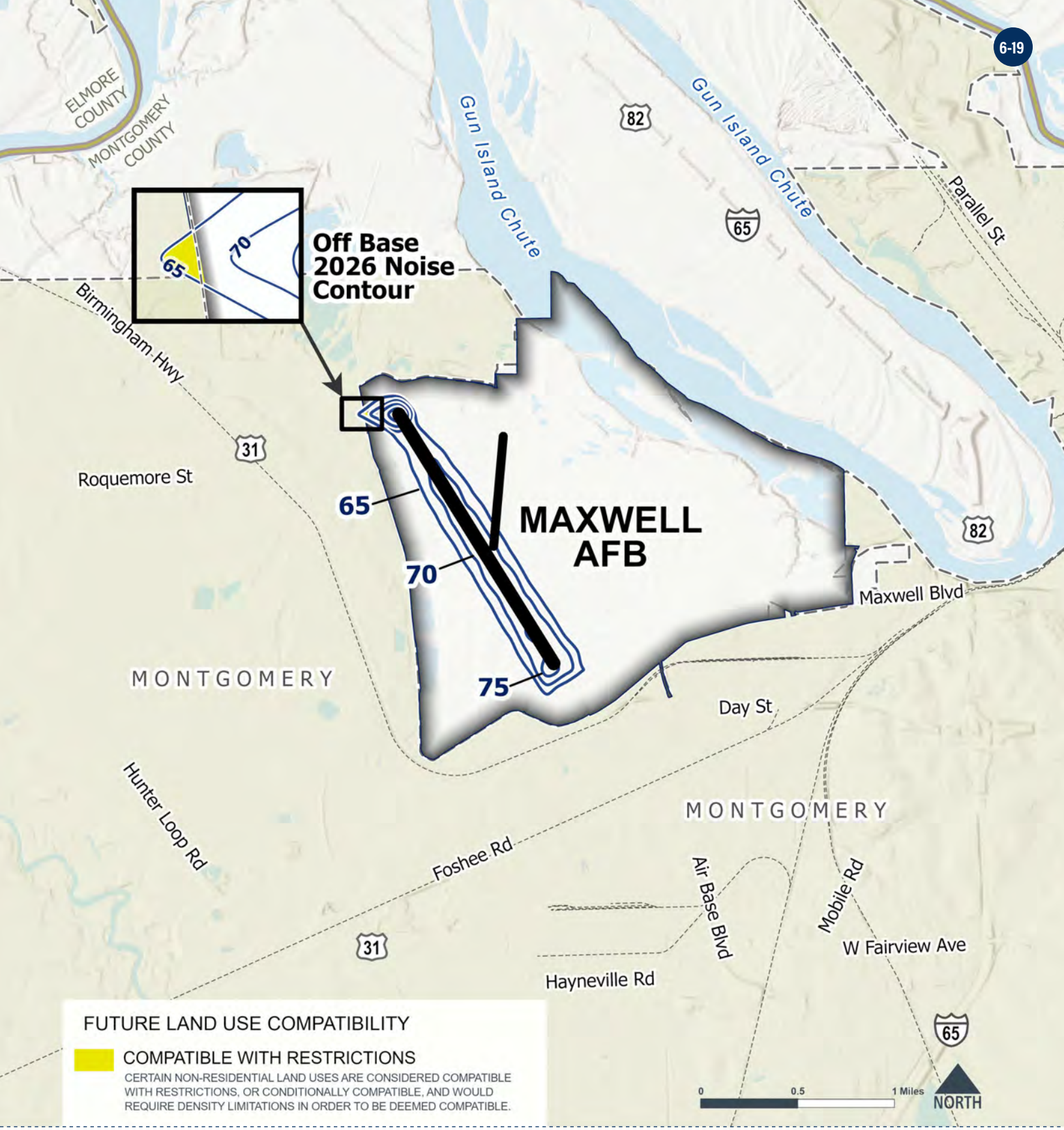
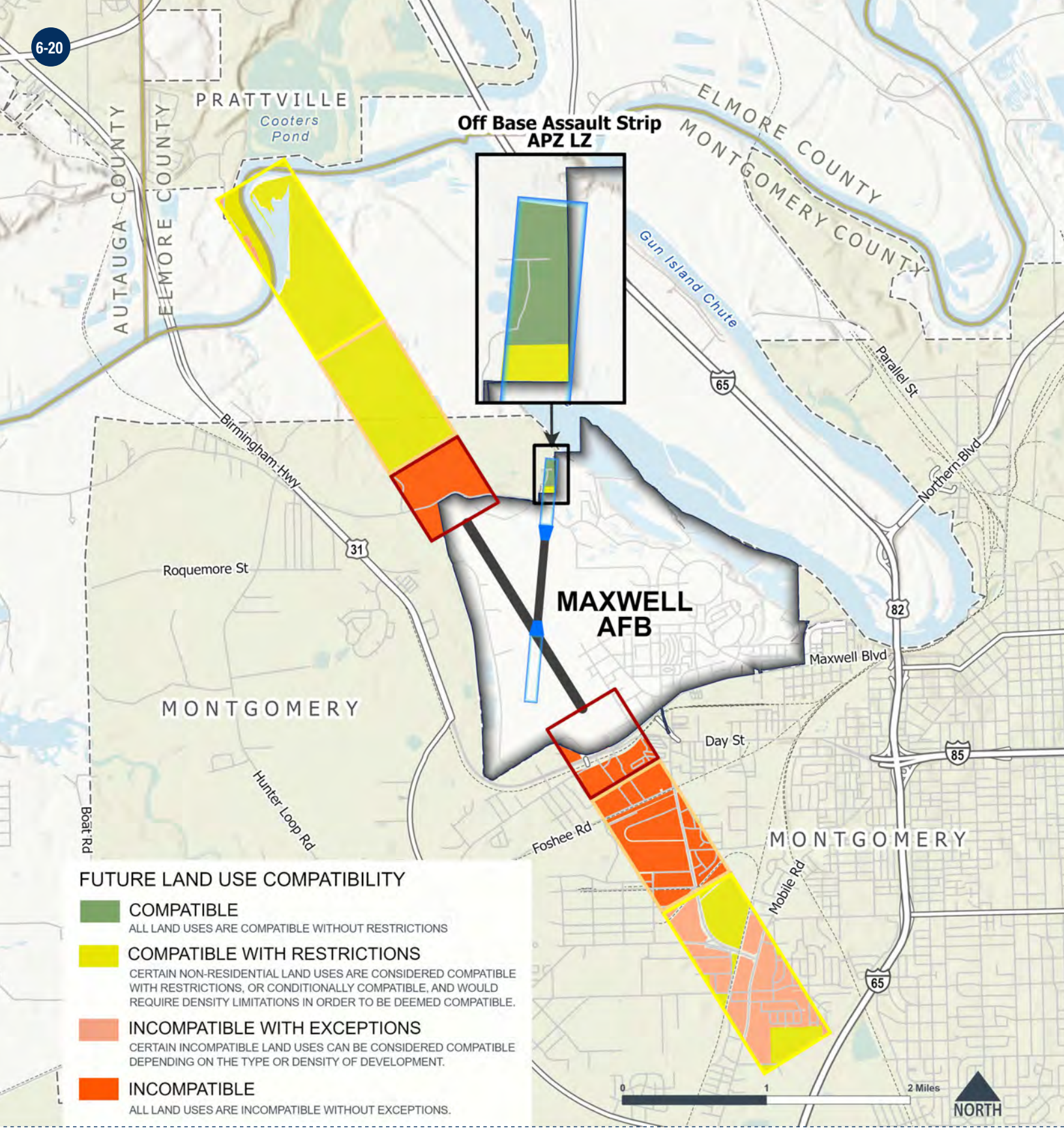


Figure 6-7
Incompatible Future Land Use within Noise Contours



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

Assault Strip
- Clear Zone (CZ)
- Accident Potential Zone Landing Zone (APZ LZ)

- Runway
- Maxwell AFB
- City Boundary

Figure 6-8
Incompatible Future Land Use within CZs and APZs

Table 6-4

Off-Installation Future Land Use Acreage within Noise Contours

DESIGNATION	GENERALIZED LAND USE CATEGORY[1]	65-70 dB DNL	70-75 dB DNL	70-75 dB DNL	GREATER THAN 75 dB DNL	TOTALS
Incompatible or Incompatible with Exceptions	Residential	–	–	–	–	–
	Commercial	–	–	–	–	–
	Industrial	–	–	–	–	–
	Services	–	–	–	–	–
	Public/Quasi-Public	–	–	–	–	–
	Recreation	–	–	–	–	–
	Open/Agriculture/Low Density	–	–	–	–	–
Compatible or Compatible with Restrictions	Residential	–	–	–	–	–
	Commercial	–	–	–	–	–
	Industrial	–	–	–	–	–
	Services	–	–	–	–	–
	Public/Quasi-Public	0.6	–	–	–	**0.6**
	Recreation	–	–	–	–	–
	Open/Agriculture/Low Density	–	–	–	–	–
Sub-total	**Incompatible**	**–**	**–**	**–**	**–**	**–**
	Compatible	**0.6**	**–**	**–**	**–**	**–**
Total		**0.6**	**–**	**–**	**–**	**0.6**

Note: Totals may not sum exactly due to rounding.

1. Refer to **Appendix A** for Details.

Table 6-5

Off-Installation Future Land Use Acreage within Clear Zones/Accident Potential Zones

DESIGNATION	GENERALIZED LAND USE CATEGORY[1]	CZ	APZ I	APZ II	APZ -LZ	TOTAL
Incompatible or Incompatible with Exceptions	Residential	70.5	279.2	281.2	—	**630.9**
	Commercial	—	—	—	—	**—**
	Industrial	—	—	—	—	**-—**
	Services	—	9.5	—	—	**9.5**
	Public/Quasi-Public	14.7	—	—	—	**14.7**
	Recreation	—	—	—	—	**—**
	Open/Agriculture/Low Density	139.7	—	—	—	**139.7**
Compatible or Compatible with Restrictions	Residential	—	—	—	—	**—**
	Commercial	—	—	—	—	**—**
	Industrial	—	1.2	—	—	**1.2**
	Services	—	—	76.8	—	**76.8**
	Public/Quasi-Public	—	—	1.5	10.6	**12.1**
	Recreation	—	—	—	—	**—**
	Open/Agriculture/Low Density	—	342.5	462.8	1.8	**807.1**
Sub-total	**Incompatible**	**224.9**	**288.7**	**281.2**	**—**	**794.8**
	Compatible	**—**	**343.7**	**541.1**	**12.4**	**897.2**
Total		**224.9**	**632.4**	**822.3**	**12.4**	**1,692.0**

Note: Totals may not sum exactly due to rounding.

1. Refer to **Appendix A** for Details.

6.4.4 Future Growth Areas and Potential Development Projects Around Maxwell AFB

Areas that are proximate to an air installation but fall outside the formally designated AICUZ footprint, and where AICUZ-focused land use planning recommendations and guidelines are not formally applied, are sometimes referred to as "white spaces." These areas exist in all regions where land development rules vary, regulatory authority is broad, and long-term development strategies do not necessarily consider AICUZ concepts, but their potential impact on mission is real.

Future projects—both in the white spaces and within the AICUZ footprint—in the region of influence surrounding Maxwell AFB that warrant attention from a land use compatibility standpoint are shown on **Figure 6-9** and include the following:

1. **New Cell Tower.** A new cell tower is in the planning stage of development at the intersection of US 31 and Main Street in Prattville. This cell tower is estimated to be about 200 feet tall upon completion. The location of this tower puts it directly within Maxwell AFB flight tracks, within the outer horizontal surface of the HAFZ, and potentially near the approach/departure clearance surface zone of the HAFZ depending on the precise site. This tower has the potential to impact flight operations at Maxwell AFB as a tall structure and as a source of EMI. FAA approval is necessary and close coordination with Maxwell AFB is strongly encouraged.

2. **New Industrial Growth.** A large manufacturing plant expansion project has been announced in Prattville's South Industrial Park, southwest of the intersection of US 31 and US 82. The 103-acre site will employ at least 400 workers once the expansion is completed. This site is within the Maxwell AFB HAFZ and underneath Maxwell AFB flight tracks. Tall structures like cranes or smokestacks may affect flight operations, as could any use that produces smoke, glare, or other hazards to flight. While outside the APZs for Maxwell AFB, this development will increase population concentration and traffic in an area subject to flight operation considerations, and appropriate coordination with Maxwell AFB will ensure minimal impacts to public safety and Maxwell AFB missions for the project.

3. **Planned Unit Development.** A Planned Unit Development (PUD) is being developed west of Prattville's Capitol Hill golf course. This PUD will contain mixed use residential development of various densities, retail, and restaurants. Prattville zoning code allows buildings up to 75 feet within a PUD. Both four-story multifamily housing and single-family homes are likely to occur in this development. The site of this PUD is within the approach/departure clearance surface zone of the HAFZ, underneath Maxwell AFB flight tracks, and close enough to the safety zones to warrant coordination with Maxwell AFB to minimize risks to flight operations and public safety. While beyond the 2026 AICUZ noise contours, proximity to flight tracks may warrant noise reducing building practices in this development.

4. **Scenic Hills Residential Growth.** The Scenic Hills area of Prattville is growing, with multiple new subdivisions planned for the area. Single-family homes are the primary form of development in these subdivisions. This site is directly across the Alabama River from the northern extent of APZ II, and while no tall structures are planned, an increase in residential population density in an area close to Maxwell AFB safety zones should be coordinated with the installation. Given these subdivisions' proximity to approaching/departing aircraft, implementing building practices that reduce noise may be appropriate.

5 **New Subdivision.** A new subdivision is planned southeast of Maxwell AFB that is expected to be 40-50 units of single-family housing. While outside of the APZs, the precise site of this subdivision may place it near APZ I and II, which would warrant coordination with Maxwell AFB to ensure residents are not at a safety risk due to flight operations. Maxwell AFB flight tracks cross over the area, and while beyond the 65 dB threshold for noise, implementing building practices that reduce noise may be appropriate for this development.

6 **Whitewater Center Commercial Growth.** Montgomery Whitewater is an outdoor whitewater rafting center immediately adjacent to Maxwell AFB to the east. The facility features multiple manmade water channels for paddlesports, event space for concerts, and a full-service restaurant and bar. There are plans for growth at the whitewater facility, including a hotel, restaurants, and retail space. While outside the 2026 AICUZ noise contours, a hotel may be impacted by noise from nearby helicopter operations. The facility is within Maxwell AFB's conical surface zone and tall developments would impact Maxwell AFB flight tracks. There may be safety or security impacts associated with large gatherings and drone use bordering Maxwell AFB. Close coordination for growth at this facility is recommended between the installation and the City of Montgomery.

7 **Downtown Tall Developments.** Downtown Montgomery is growing. There is a seven-story parking garage in the early stages of development at the intersection of Madison Avenue and Hilliard Street and a new eight-story Retirement Systems of Alabama facility under construction at the intersection of High and Jackson streets. Several hotels are under construction downtown. Immediately surrounding the installation to the west, south and east, the City of Montgomery is within Maxwell AFB's HAFZ and subject to safety impacts from Maxwell AFB safety zones and flight tracks. As Montgomery's urban core continues to grow, the city should continue its close coordination with Maxwell AFB on tall developments that may interfere with flight tracks or any uses that may pose a safety risk to pilots or the public.

8 **Southern Montgomery Industrial Growth.** Significant industrial growth is planned for southern areas of the City of Montgomery, including data centers, manufacturing, and an inland port. Southern Montgomery includes land within the horizontal and glide angle approach/departure clearance surfaces of the HAFZ. In these zones, tall developments such as smokestacks, elevators, or cranes may pose a hazard to Maxwell AFB flight operations. Industrial developments that attract birds, produce significant pollution, or produce EMI may also interfere with flight operations. Maxwell AFB flight tracks directly cross over this area, and future industrial growth should be coordinated with the installation to minimize any potential impacts.

9 **Proposed Solar Farm.** A utility-scale solar development is under construction at the southern extent of Montgomery's corporate limits, and an additional solar farm is proposed in the southern Montgomery area. Solar farms have the potential to produce glare that can pose a hazard to flight operations. Large solar developments in the Montgomery region should be coordinated with Maxwell AFB to ensure any hazards are mitigated.

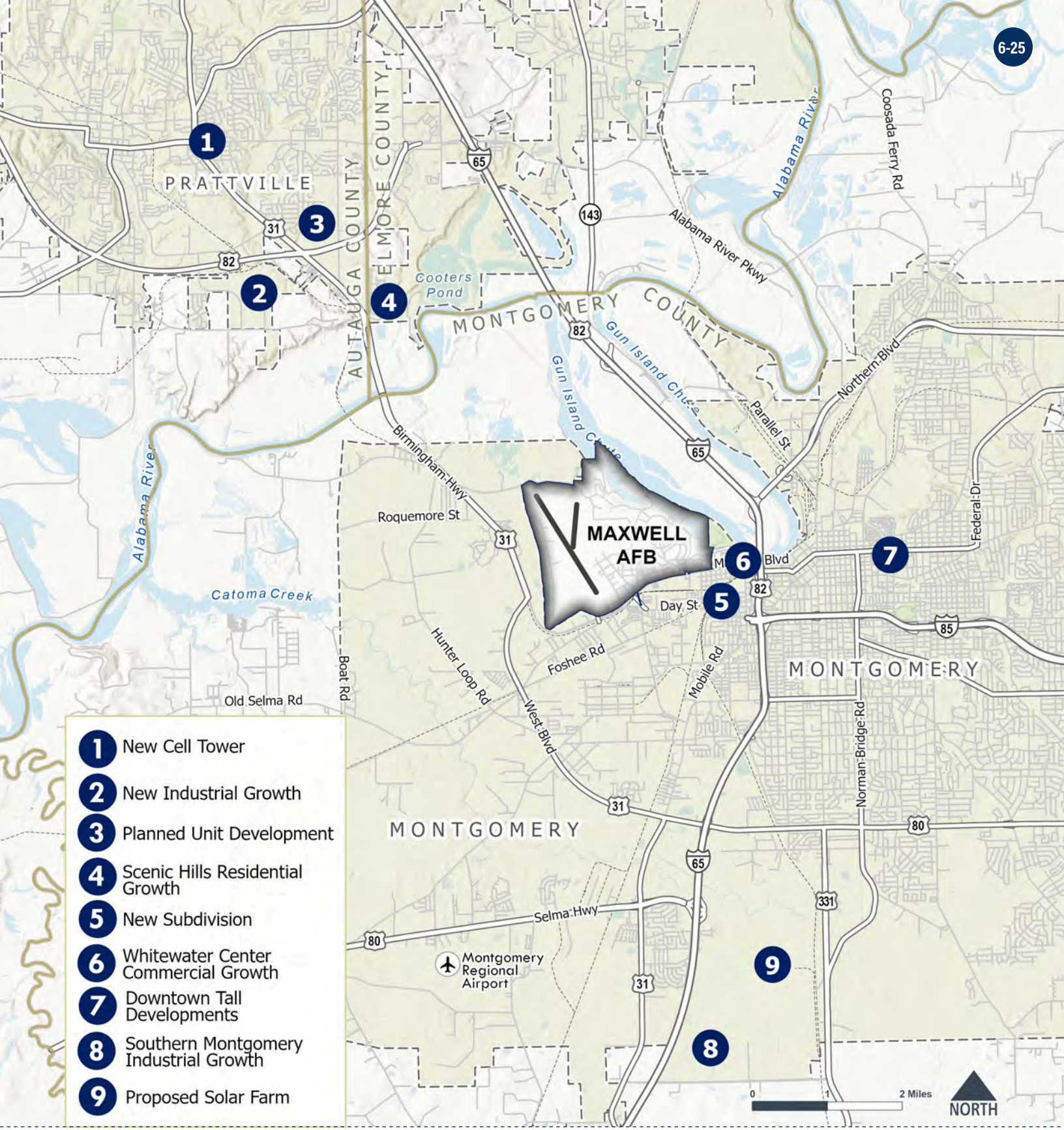


Figure 6-9
Future Development Projects Around Maxwell AFB

AdobeStock.com

7. IMPLEMENTATION

Implementation of the AICUZ study must be a joint effort between Maxwell AFB and surrounding communities. This AICUZ study provides the best source of information to ensure land use planning decisions made by local municipalities are compatible with a future installation presence. This chapter discusses the roles of all partners in the collaborative planning efforts.

7.1 MILITARY ROLE

The goal of the AICUZ Program is to assist local, regional, state, and federal officials in protecting the public health, safety, and welfare by promoting long-term land use compatible with military operations, and to protect Air Force operational capability from the effects of incompatible land use. This program helps mitigate noise and safety impacts on surrounding communities and advises these communities about supporting flight operations and the safety, welfare, and quality of life of their citizens.

Maxwell AFB is responsible for flight safety, noise abatement, and participation in existing local jurisdictional land use planning processes as part of its AICUZ Program responsibilities. Air Force policy and guidance requires that installation leadership periodically review existing practices for flight operations and evaluate these factors in relationship to populated areas and other local situations. The installation may serve in an advisory, non-voting capacity on planning boards and commissions.

Maxwell AFB will:

- Ensure that, wherever possible, air operations planners route flights over sparsely populated areas to reduce the exposure of lives and property to a potential accident.
- Periodically review existing traffic patterns, instrument approaches, weather conditions, and operating practices and evaluate these factors in relationship to populated areas and other local conditions. The purpose of this review is 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 meet and discuss future development and to 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 and provide copies of the AICUZ study to appropriate state and federal agencies.

Preparation and presentation of this Maxwell AFB AICUZ Study is one phase of continued Air Force participation in the local planning process. The Air Force recognizes that, as the local community updates its land use plans, Maxwell AFB must be ready to provide additional input, as needed.

7.2 STATE/REGIONAL ROLES

DoD Office of Local Defense Community Cooperation (OLDCC)

The OLDCC supports the readiness and resiliency of military installations and surrounding communities across the county. It offers several grants and programs to strengthen relationships between the DoD and civilian communities, including funding for construction projects, infrastructure overhauls, studies and plans, and stakeholder engagement forums. Particular to Air Force installation communities, the OLDCC sponsors the Community Noise Mitigation program that offers grant funding for civilian noise mitigation projects in high-noise zones of military installations. The FAA publishes guidance on sound insulation for structures exposed to aircraft noise, available on the OLDCC Community Noise Mitigation website.

Alabama Department of Economic and Community Affairs (ADECA)

The Alabama Department of Economic and Community Affairs (ADECA) is the Alabama state-level office for economic development. It frequently partners with the AARC to assist in regional planning efforts and can coordinate and fund future studies and planning efforts for compatible planning and economic growth in the Montgomery region.

AARC

The AARC provides state-level coordination and assistance with regional planning efforts. It can supplement and assist regional planning efforts in integrating the AICUZ recommendations into its regional plan, and it can highlight work done at the regional scale in implementing the AICUZ findings to other regions.

CARPDC

The CARPDC provides planning and economic development services for Autauga, Elmore, and Montgomery counties. It encourages multi-jurisdictional planning and advises, trains, and provides resources for transportation planning, community planning, and economic development member counties and municipalities. It facilitates planning efforts throughout the region and acts as a central hub for regional and municipal planning as well as an area-wide coordinator and distributor of information about state and federal programs.

As the coordinator of regional planning efforts, the CARPDC is well-suited to support regional implementation of the 2026 Maxwell AFB AICUZ Study. It assists with local planning and provides planning advisory services for Autauga, Elmore, and Montgomery Counties, which are each affected by Maxwell AFB operations and overlays. It has the authority to create special purpose plans with a regional scope and establish special districts that could be used to further formalize the findings of the AICUZ Study into regional planning. The scope of Maxwell AFB operations transcends local boundaries, and a regional approach can uniformly integrate AICUZ recommendations to the benefit of Maxwell AFB and the counties.

Alabama League of Municipalities

The Alabama League of Municipalities is a nonpartisan association of municipal governments across Alabama. It provides a forum for coordination and training resources for municipalities to strengthen local government across the state. Through the League, municipalities surrounding Maxwell AFB can coordinate with other defense communities in the state to best learn how to ensure compatibility and promote defense missions in their jurisdictions. The League runs an economic development academy that can provide key information specific to Alabama on promoting economic development within defense communities.

Association of Defense Communities (ADC)

The Association of Defense Communities (ADC) is an advocacy group that connects communities, states, the military and industry on community-military issues. It has a wealth of resources for communities and military installations to leverage for strengthening community-military ties. In 2023, the ADC recognized the Montgomery River Region as a Great American Defense Community for the longstanding partnership between Maxwell AFB and the surrounding municipalities. Continuing to actively utilize the resources of the ADC can strengthen enduring partnerships between Maxwell AFB in the region and advocate for Maxwell AFB's mission at the regional and national level.

2017 JLUS

The 2017 JLUS complements the recommendations of the 2026 Maxwell AFB AICUZ Study. As a cooperative document between Maxwell AFB and the surrounding jurisdictions, it provides recommendations that have been vetted and agreed upon by all partners in the planning effort. The recommendations are designed to protect the public from adverse impacts to health, welfare, and safety caused by Maxwell AFB operations and simultaneously promote the mission of Maxwell AFB as a critical component of the regional economy and national defense strategy. The City of Montgomery and Autauga County have adopted MOAs that fulfill some of the recommendations of the study. Full adoption of the JLUS recommendations by all regional entities will create a robust planning framework for future development in the region and strong communication channels between Maxwell AFB and the surrounding municipalities.

Montgomery Area Chamber of Commerce

The Montgomery Area Chamber of Commerce is an association of business and political leaders in the greater Montgomery region. The Chamber recognizes the presence of DoD missions as a means of growing and diversifying the regional economy and, to that end, it has a highly active Military Affairs Office whose goal is the preservation and advancement of military missions in the region. Within the office are a Director of Military and Federal Strategies as well as a Military Affairs team dedicated to ensuring the preservation and expansion of DoD missions in the region. Maxwell AFB frequently interfaces with the Military Affairs Office, and the Commanders of Air University and the 42d ABW are Chamber members.

As a regional platform for businesses and the greater public to interface with Maxwell AFB, the Chamber is a prime resource to advocate for Maxwell AFB's mission. Maxwell AFB's frequent involvement with the Chamber can inform local leaders of its requirements, prevent encroachment, and preserve the mission, which safeguards Maxwell AFB's place as a regional economic driver.

7.3 LOCAL GOVERNMENT ROLE

The role of the local government is to enact planning, zoning, and development principles and practices that are compatible with the installation and protect the installation's mission. The residents of the surrounding community have a long history of working with personnel from Maxwell AFB. Adopting the following recommendations during the revision of relevant land use planning or zoning regulations will strengthen this relationship, increase the health and safety of the public, and protect the integrity of the installation's flying mission:

- ✓ Ensure local government land use plans and ordinances reflect AICUZ recommendations for development located within safety and noise zones.
- ✓ Continue to incorporate JLUS, also known as CUP, recommendations based on community and installation agreements.
- ✓ Continue to consult with Maxwell AFB on planning and zoning actions that have the potential to affect installation operations.
- ✓ Continue to invite the Air Force installation leadership to be ex officio members on boards, commissions, and regional councils addressing long-range development and other planning policies.
- ✓ Consider AICUZ policies and guidelines when developing or revising city comprehensive plans. Use AICUZ overlay maps and Air Force Land Use Compatibility Guidelines **(see Appendix A)** to evaluate existing and future land use proposals.
- ✓ Ensure that new development applications or properties that are applying for a change of use are submitted to Maxwell AFB so the base can assess those applications for potential impacts on defense missions. The Maxwell AFB PA Office can provide a land use planning point of contact.
- ✓ Adopt or modify zoning ordinances to reflect the compatible land uses outlined in the AICUZ study, including the creation of military airport overlay zones.
- ✓ Review capital improvement plans, infrastructure investments, and development policies to ensure they do not encourage incompatible land use patterns near Maxwell AFB, with particular emphasis on utility extension and transportation plans.
- ✓ Implement height and obstruction restrictions in local ordinances that reflect current Air Force and 14 CFR 77 requirements, presented in this study as HAFZs.
- ✓ Enact fair disclosure ordinances to require informing the public of AICUZ items that directly relate to military flying operations at Maxwell AFB.
- ✓ Require real estate disclosure for individuals purchasing or leasing property within noise zones or CZs/APZs where allowed.
- ✓ Enact or modify building/residential codes to ensure that any new construction near Maxwell AFB has the recommended noise level reduction measures incorporated into the design and construction of structures.
- ✓ Coordinate with the FAA on the height of tall structures, such as wind turbines and communication towers, to ensure that new construction does not pose a hazard to navigable airspace around Maxwell AFB.
- ✓ Encourage the development of a working group to include the city, county, and Maxwell AFB representatives to discuss land use concerns and major development proposals that could affect military operations.

7.4 COMMUNITY ROLE

Neighboring residents and installation personnel have a long-established history of working together for the mutual benefit of the Maxwell AFB mission and local community. Adoption of the following recommendations will strengthen this relationship, protect the health and safety of the public, and help ensure the integrity of the installation's defense mission:

Real Estate Professionals and Brokers

- Know where noise and safety zones encumber land near the air installation and invite installation representatives to brokers' meetings to discuss the AICUZ Program with real estate professionals.
- Disclose noise impacts to all prospective buyers of properties within areas greater than 65 dB DNL or within the safety zones.
- Disclose accident potential to all prospective buyers of properties within the CZs/APZs.
- Incorporate noise and accident potential in estimates of property values.
- Require the Multiple Listing Service to disclose noise and safety zones for all listings.

Developers

- Know where the noise zones and CZs/APZs encumber land near the air installation. Consult with Maxwell AFB on proposed developments within the AICUZ footprint.
- Participate in local discussions regarding existing and proposed zoning ordinances and subdivision regulations to support the compatible land uses outlined in this AICUZ Study.

Local Citizens

- Participate in local forums with the installation to learn more about the installation's missions.
- Become informed about the AICUZ Program and learn about the program's goals, objectives, and value in protecting the public's health, safety, and welfare.
- Ask local real estate professionals, city planners, and installation representatives about noise and accident potential when considering property purchases and values.

QUESTIONS?

While the installation and community are separated by a fence, Maxwell AFB activities and operations could adversely affect the community. Likewise, community activities and development decisions can impair Maxwell AFB's ability to complete its local hometown mission. Military and community goals can be mutually achieved through a combination of collaborative planning and partnerships, open communication, and close relationships. The AICUZ study provides a foundation for relevant communication that safeguards the community, and its hometown military installation to continue to coexist for many years.

Questions about the AICUZ Program may be directed to the installation Public Affairs (PA) Office

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(334)-953-2015

EMAIL
MAXWELLPUBLICAFFAIRS@US.AF.MIL

8. REFERENCES

DoD. 2025. Department of Defense Instruction 4165.57, Air Installations Compatible Use Zones, June 30.

DoD. 1978. "Planning in the Noise Environment," Air Force Manual AFM 19-10.

DoD. 2019. Unified Facilities Criteria (UFC), Airfield and Heliport Planning and Design, UFC 3-260-01.

USAF, 2025. Department of the Air Force Handbook (DAFH) 32-7084, AICUZ Program Management.

USAF, 2025. Department of the Air Force Instruction (DAFI) 32-1015, Integrated Installation Planning.

APPENDIX A. LAND USE COMPATIBILITY TABLES

Key To Table A-1 and A-2 Land Use Compatibility Tables

Land Use Recommendations

Y **Yes.** Land use and related structures compatible without restrictions.

N **No.** Land use and related structures are not compatible and should be prohibited.

Yx **Yes with Restrictions.** The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.

Nx **No with Exceptions.** The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.

Land Use Compatibility Recommendations in APZs and CZs

Table A-1 provides compatibility recommendations based on historic aircraft mishap locations on or near air installations. The primary land use objective is to discourage people from establishing occupied land uses in areas of high accident potential.

While the table is organized by the *Standard Land Use Coding Manual (SLUCM)* categories, it varies from SLUCM by differentiating land use types by population density. Some uses warrant additional evaluation due to the variation of densities of people, intensity of use, or other characteristics that could impact safety of flight. Floor Area Ratio (FAR) recommendations are included within the table to guide suggested maximum density for non-residential uses. General notes and specific footnotes at the bottom of the table provide additional information and compatibility considerations.

These recommendations are intended to support compatible land use planning both on and off base; they do not constitute a federal determination that any use of land is acceptable or unacceptable under local zoning.

These tables are based on approximation of data from the Federal Highway Administration SLUCM tables and may be transposed in the event of any possible data gaps. Intended to be estimates for the purpose of general development guidelines.

Table A-1
Land Use Compatibility Recommendations in APZs and CZs

SLUCM No.	LAND USE NAME	CZ[1]	APZ I[1]	APZ II[1]	DENSITY[1] RECOMMENDATION
	10 Residential				
11	Household Units				Maximum Density of 2 Du/Ac
11.11	Single Units: Detached	N	N	Y[2]	
11.12	Single Units: Semi-Detached	N	N	N	
11.13	Single Units: Attached Row	N	N	N	
11.21	Two Units: Side-by-Side	N	N	N	
11.22	Two Units: One Above the Other	N	N	N	

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SLUCM No./LAND USE NAME		CZ[1]	APZ I[1]	APZ II[1]	DENSITY[1] RECOMMENDATION
11.31	Apartments: Walk-Up	N	N	N	
11.32	Apartment: Elevator	N	N	N	
12	Group Quarters	N	N	N	
13	Residential Hotels	N	N	N	
14	Mobile Home Parks or Courts	N	N	N	
15	Transient Lodgings	N	N	N	
16	Other Residential	N	N	N	
	20 Manufacturing[3]				
21	Food and Kindred Products; Manufacturing	N	N	Y	Maximum FAR 0.56 IN APZ II
22	Textile Mill Products; Manufacturing	N	N	Y	Maximum FAR 0.56 IN APZ II
23	Apparel and Other Finished Products; Products Made from Fabrics, Leather, and Similar Materials; Manufacturing	N	N	N	
24	Lumber and Wood Products (Except Furniture); Manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
25	Furniture and Fixtures; Manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
26	Paper and Allied Products; Manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
27	Printing, Publishing, and Allied Industries	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
28	Chemicals and Allied Products; Manufacturing	N	N	N	
29	Petroleum Refining and Related Industries	N	N	N	
	30 Manufacturing[3] (Continued)				
31	Rubber and Miscellaneous Plastic Products; Manufacturing	N	N	N	
32	Stone, Clay, and Glass Products; Manufacturing	N	N	Y	Maximum FAR 0.56 in APZ II
33	Primary Metal Products; Manufacturing	N	N	Y	Maximum FAR 0.56 in APZ II
34	Fabricated Metal Products; Manufacturing	N	N	Y	Maximum FAR 0.56 in APZ II
35	Professional, Scientific, and Controlling Instruments; Photographic and Optical Goods; Watches and Clocks	N	N	N	
39	Miscellaneous Manufacturing	N	Y	Y	

SLUCM No./LAND USE NAME		CZ[1]	APZ I[1]	APZ II[1]	DENSITY[1] RECOMMENDATION
	40 Transportation, Communication, and Utilities[3,4]				
41	Railroad, Rapid Rail Transit, and Street Railway Transportation	N	Y[6]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
42	Motor Vehicle Transportation	N	Y[6]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
43	Aircraft Transportation	N	Y[6]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
44	Marine Craft Transportation	N	Y[6]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
45	Highway and Street Right-Of-Way	Y[5]	Y[6]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
46	Automobile Parking	N	Y[6]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
47	Communication	N	Y[6]	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
48	Utilities[7]	N	Y[6]	Y[6]	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
48.5	Solid Waste Disposal (Landfills, Incinerators, etc.)	N	N	N	
49	Other Transportation, Communication, and Utilities	N	Y[6]	Y	See Note 6 Below
	50 Trade				
51	Wholesale Trade	N	Y	Y	Maximum FAR of 0.28 in APZ I & .56 in APZ II
52	Retail Trade • Building Materials, Hardware, and Farm Equipment	N	Y	Y	See Note 8 Below
53	Retail Trade • Including Discount Clubs, Home Improvement Stores, Electronics Superstores, etc.	N	N	Y	Maximum FAR of 0.16 in APZ II
53	Shopping Centers • Neighborhood, Community, Regional, Super-Regional[9]	N	N	N	
54	Retail Trade • Food	N	N	Y	Maximum FAR of 0.24 in APZ II
55	Retail Trade • Automotive, Marine Craft, Aircraft, and Accessories	N	Y	Y	Maximum FAR of 0.14 in APZ I & 0.28 in APZ II
56	Retail Trade • Apparel and Accessories	N	N	Y	Maximum FAR of 0.28 in APZ II
57	Retail Trade • Furniture, Home, Furnishings, and Equipment	N	N	Y	Maximum FAR of 0.28 in APZ II
58	Retail Trade • Eating and Drinking Establishments	N	N	N	
59	Other Retail Trade	N	N	Y	Maximum FAR of 0.16 in APZ II

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SLUCM No.	LAND USE NAME	CZ[1]	APZ I[1]	APZ II[1]	DENSITY[1] RECOMMENDATION
	60 Services[10]				
61	Finance, Insurance, and Real Estate Services	N	N	Y	Maximum FAR of 0.22 in APZ II
62	Personal Services	N	N	Y	Office uses only. Maximum FAR of 0.22 in APZ II
62.4	Cemeteries	N	Y[11]	Y[11]	
63	Business Services (Credit Reporting; Mail, Stenographic, Reproduction; Advertising)	N	N	Y	Maximum FAR of 0.22 in APZ II
63.7	Warehousing and Storage Services[12]	N	Y	Y	Maximum FAR of 1.0 in APZ I; 2.0 in APZ II
64	Repair Services	N	Y	Y	Maximum FAR of 0.11 APZ I; 0.22 in APZ II
65	Professional Services	N	N	Y	Maximum FAR of 0.22 in APZ II
65.1	Hospitals, Nursing Homes	N	N	N	
65.1	Other Medical Facilities	N	N	N	
66	Contract Construction Services	N	Y	Y	Maximum FAR of 0.11 APZ I; 0.22 in APZ II
67	Government Services	N	N	Y	Maximum FAR of 0.24 in APZ II
68	Educational Services	N	N	N	
68.1	Childcare Services, Child Development Centers, and Nurseries	N	N	N	
69	Miscellaneous Services	N	N	Y	Maximum FAR of 0.22 in APZ II
69.1	Religious Activities (Including Places Of Worship)	N	N	N	
	70 Cultural, Entertainment and Recreational				
71	Cultural Activities	N	N	N	
71.2	Nature Exhibits	N	Y[13]	Y[13]	
72	Public Assembly	N	N	N	
72.1	Auditoriums, Concert Halls	N	N	N	
72.11	Outdoor Music Shells, Amphitheaters	N	N	N	
72.2	Outdoor Sports Arenas, Spectator Sports	N	N	N	

SLUCM No./LAND USE NAME		CZ[1]	APZ I[1]	APZ II[1]	DENSITY[1] RECOMMENDATION
73	Amusements: Fairgrounds, Miniature Golf, Driving Ranges; Amusement Parks, etc.	N	N	Y[20]	
74	Recreational Activities (Including Golf Courses, Riding Stables, Water Recreation)	N	Y[13]	Y[13]	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II
75	Resorts and Group Camps	N	N	N	
76	Parks	N	Y[13]	Y[13]	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II
79	Other Cultural, Entertainment and Recreation	N	Y[11]	Y[11]	Maximum FAR of 0.11 in APZ I; 0.22 in APZ II
	80 Resource Production and Extraction				
81	Agriculture (Except Live-Stock)	Y[4]	Y[14]	Y[14]	
81.5, 81.7	Agriculture: Livestock Farming, Including Grazing and Feedlots	N	Y[14]	Y[14]	
82	Agriculture Related Activities	N	Y[15]	Y[15]	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
83	Forestry Activities16	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
84	Fishing Activities17	N[17]	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
85	Mining Activities18	N	Y[18]	Y[18]	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
89	Other Resource Production or Extraction	N	Y	Y	Maximum FAR of 0.28 in APZ I; 0.56 in APZ II, no activity which produces smoke, glare, or involves explosives
	90 Other				
91	Undeveloped Land	Y	Y	Y	
93	Water Areas19	N[19]	N[19]	N[19]	

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Notes for Table A-1 Land Use Compatibility in APZs and CZs

1. A "Yes" or a "No" designation for compatible land use is to be used only for general comparison. Within each, uses exist where further evaluation may be needed in each category as to whether it is clearly compatible, normally compatible, or not compatible due to the variation of densities of people and structures. In order to assist air installations and local governments, general suggestions as to FARs are provided as a guide to density in some categories. In general, land use restrictions that limit occupants, including employees, of commercial, service, or industrial buildings or structures to 25 an acre in APZ I and 50 an acre in APZ II are low density. 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. Recommended FARs are calculated using standard parking generation rates for various land uses, vehicle occupancy rates, and desired density in APZ I and II. For APZ I, the formula is FAR = 25 people an acre/ (Average Vehicle Occupancy x Average Parking Rate x (43,560/1000)). The formula for APZ II is FAR = 50/ (Average Vehicle Occupancy x Average Parking Rate x (43,560/1000)).
2. The suggested maximum density for detached single-family housing is two dwelling units /acre to encourage retention of farming and open space. In a planned unit development (PUD) of single-family detached units, where clustered housing development results in large open areas, this density could possibly be increased slightly provided the amount of surface area covered by structures does not exceed 20 percent of the PUD total area. PUD encourages clustered development that leaves large open areas.
3. Other factors to be considered: labor intensity, structural coverage, explosive characteristics, air-pollution, steam, electronic interference with aircraft, height of structures, and potential lighting or glare to pilots.
4. 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 above-ground utility and communications lines should be in Clear Zone areas on or off the air installation. The Clear Zone is subject to the most severe restrictions.
5. Roads within the graded portion of the Clear Zone are prohibited. 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. Nothing associated with these roads should violate obstacle clearance criteria.
6. Above-ground passenger terminals and above-ground power transmission or distribution lines are not recommended. Prohibited power lines include high-voltage transmission lines and distribution lines that provide power to cities, towns, or regional power for unincorporated areas.
7. 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 issues on a case-by-case basis that considers both the proposal and potentially affected mission.
8. Within SLUCM Code 52, maximum FARs for lumberyards (SLUCM Code 521) are 0.20 in APZ-I and 0.40 in APZ-11; the maximum FARs for hardware, paint, and farm equipment stores, (SLUCM Code 525), are 0.12 in APZ I and 0.24 in APZ II.
9. 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.
10. Land uses in the APZs should be passive open space; ancillary uses such as meeting places, auditoriums, etc. are not recommended.
11. Chapels, houses of worship, and land uses of public gatherings are incompatible within APZ I or APZ II.
12. Big-box home improvement stores are not included as part of this category.
13. Low occupancy facilities are compatible with these uses; however, playgrounds and marinas are not recommended.
14. Activities that attract concentrations of birds creating a hazard to aircraft operations should be excluded.
15. Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.
16. Lumber and timber products removed due to establishment, expansion, or maintenance of Clear Zone lands owned in fee will be disposed of in accordance with applicable DoD guidance.
17. Controlled hunting and fishing may be permitted for the purpose of wildlife management.
18. Surface mining operations that could create retention ponds that may attract waterfowl and present bird/wildlife aircraft strike hazards (BASH), or operations that produce dust or light emissions that could affect pilot vision are not compatible.
19. Naturally occurring water features (e.g., rivers, lakes, streams, wetlands) are pre-existing, nonconforming land uses. Actions to expand naturally occurring water features or construction of new water features should not be encouraged. If construction of new features is necessary for storm water retention, they should be designed not to attract waterfowl. Water features that attract waterfowl present a potential BASH.
20. Amusement centers, family entertainment centers or amusement parks designed or operated at a scale that could attract or result in concentrations of people greater than 50 per acre at any given time, including employees and visitors, 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.

Recommended Land Use Compatibility for Noise Zones

Table A-2 provides compatibility recommendations based on yearly A-weighted Day-Night Average Sound Level (ADNL) [the 'A' is implied in DNL when discussing aircraft operations] or Community Noise Equivalent Level (CNEL) on and around installations. The primary land use objective is to discourage noise-sensitive land uses in areas of higher noise exposure.

While the table is organized by the Standard Land Use Coding Manual (SLUCM) categories, it varies from SLUCM by differentiating land use types by noise sensitivity. Some uses warrant additional evaluation due to potential for annoyance and activity interference. General notes and specific footnotes at the bottom of the table provide additional information and considerations for compatibility determinations.

These recommendations are intended to support compatible land use planning both on and off-base; they do not constitute a federal determination that any use of land is acceptable or unacceptable under local zoning.

Table A-2

Recommended Land Use Compatibility for Noise Zones

LAND USE		SUGGESTED LAND USE COMPATIBILITY				
		DNL OR CNEL				
SLUCM No./LAND USE NAME		65-69 dB	70-74 dB	75-79 dB	80-84 dB	85+ dB
10 Residential						
11	Household Units	N[1]	N[1]	N	N	N
11.11	Single Units: Detached	N[1]	N[1]	N	N	N
11.12	Single Units: Semidetached	N[1]	N[1]	N	N	N
11.13	Single Units: Attached Row	N[1]	N[1]	N	N	N
11.21	Two Units: Side-by-Side	N[1]	N[1]	N	N	N
11.22	Two Units: One Above the Other	N[1]	N[1]	N	N	N
11.31	Apartments: Walk-Up	N[1]	N[1]	N	N	N
11.32	Apartment: Elevator	N[1]	N[1]	N	N	N
12	Group Quarters	N[1]	N[1]	N	N	N
13	Residential Hotels	N[1]	N[1]	N	N	N
14	Mobile Home Parks or Courts	N	N	N	N	N
15	Transient Lodgings	N[1]	N[1]	N[1]	N	N
16	Other Residential	N[1]	N[1]	N	N	N

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LAND USE		SUGGESTED LAND USE COMPATIBILITY				
		DNL OR CNEL				
SLUCM No./LAND USE NAME		65-69 dB	70-74 dB	75-79 dB	80-84 dB	85+ dB
20 Manufacturing						
21	Food and Kindred Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
22	Textile Mill Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
23	Apparel and Other Finished Products; Products Made from Fabrics, Leather, and Similar Materials; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
24	Lumber and Wood Products (Except Furniture); Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
25	Furniture and Fixtures; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
26	Paper and Allied Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
27	Printing, Publishing, and Allied Industries	Y	Y[2]	Y[3]	Y[4]	N
28	Chemicals and Allied Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
29	Petroleum Refining and Related Industries	Y	Y[2]	Y[3]	Y[4]	N
30 Manufacturing (Continued)						
31	Rubber and Misc. Plastic Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
32	Stone, Clay, and Glass Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
33	Primary Metal Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
34	Fabricated Metal Products; Manufacturing	Y	Y[2]	Y[3]	Y[4]	N
35	Professional Scientific, and Controlling Instruments; Photographic and Optical Goods; Watches and Clocks	Y	25	30	N	N
39	Miscellaneous Manufacturing	Y	Y[2]	Y[3]	Y[4]	N

LAND USE		SUGGESTED LAND USE COMPATIBILITY				
		DNL OR CNEL				
SLUCM No./LAND USE NAME		65-69 dB	70-74 dB	75-79 dB	80-84 dB	85+ dB
40 Transportation, Communication, and Utilities						
41	Railroad, Rapid Rail Transit, and Street Railway Transportation	Y	Y[2]	Y[3]	Y[4]	N
42	Motor Vehicle Transportation	Y	Y[2]	Y [3]	Y[4]	N
43	Aircraft Transportation	Y	Y[2]	Y[3]	Y[4]	N
44	Marine Craft Transportation	Y	Y[2]	Y[3]	Y[4]	N
45	Highway and Street Right-of-Way	Y	Y	Y	Y	N
46	Automobile Parking	Y	Y	Y	Y	N
47	Communication	Y	255	305	N	N
48	Utilities	Y	Y[2]	Y[3]	Y[4]	N
49	Other Transportation, Communication, and Utilities	Y	[255]	[305]	N	N
50 Trade						
51	Wholesale Trade	Y	Y[2]	Y[3]	Y[4]	N
52	Retail Trade: Building Materials, Hardware, and Farm Equipment	Y	25	30	Y[4]	N
53	Retail Trade: Shopping Centers, Discount Clubs, Home Improvement Stores, Electronics Superstores, etc.	Y	25	30	N	N
54	Retail Trade: Food	Y	25	30	N	N
55	Retail Trade: Automotive, Marine Craft, Aircraft, and Accessories	Y	25	30	N	N
56	Retail Trade: Apparel and Accessories	Y	25	30	N	N
57	Retail Trade: Furniture, Home, Furnishings, and Equipment	Y	25	30	N	N
58	Retail Trade: Eating and Drinking Establishments	Y	25	30	N	N
59	Other Retail Trade	Y	25	30	N	N

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LAND USE		SUGGESTED LAND USE COMPATIBILITY				
		DNL OR CNEL				
SLUCM No./LAND USE NAME		65-69 dB	70-74 dB	75-79 dB	80-84 dB	85+ dB
	60 Services					
61	Finance, Insurance, and Real Estate Services	Y	25	30	N	N
62	Personal Services	Y	25	30	N	N
62.4	Cemeteries	Y	Y[2]	Y[3]	Y[4,11]	Y[6,11]
63	Business Services	Y	25	30	N	N
63.7	Warehousing and Storage	Y	Y[2]	Y[3]	Y[4]	N
64	Repair Services	Y	Y[2]	Y[3]	Y[4]	N
65	Professional Services	Y	25	30	N	N
65.1	Hospitals, Other Medical Facilities	25	30	N	N	N
65.16	Nursing Homes	N[1]	N[1]	N	N	N
66	Contract Construction Services	Y	25	30	N	N
67	Government Services	Y[1]	25	30	N	N
68	Educational Services	25	30	N	N	N
68.1	Childcare Services, Child Development Centers, and Nurseries	25	30	N	N	N
69	Miscellaneous Services	Y	25	30	N	N
69.1	Religious Activities (Including Places Of Worship)	Y	25	30	N	N

LAND USE		SUGGESTED LAND USE COMPATIBILITY				
		DNL OR CNEL				
SLUCM No./LAND USE NAME		65-69 dB	70-74 dB	75-79 dB	80-84 dB	85+ dB
70 Cultural, Entertainment and Recreational						
71	Cultural Activities	25	30	N	N	N
71.2	Nature Exhibits	Y[1]	N	N	N	N
72	Public Assembly	Y	N	N	N	N
72.1	Auditoriums, Concert Halls	25	30	N	N	N
72.11	Outdoor Music Shells, Amphitheaters	N	N	N	N	N
72.2	Outdoor Sports Arenas, Spectator Sports	Y[7]	Y[7]	N	N	N
73	Amusements	Y	Y	N	N	N
74	Recreational Activities (Including Golf Courses, Riding Stables, Water Recreation)	Y	25	30	N	N
75	Resorts and Group Camps	Y	25	N	N	N
76	Parks	Y	25	N	N	N
79	Other Cultural, Entertainment and Recreation	Y	25	N	N	N
80 Resource Production and Extraction						
81	Agriculture (Except Live- Stock)	Y[8]	Y[9]	Y[10]	Y[10,11]	Y[10,11]
81.5, 81.7	Agriculture-Livestock Farming Including Grazing and Feedlots	Y[8]	Y[9]	N	N	N
82	Agriculture Related Activities	Y[8]	Y[9]	Y[10]	Y[10,11]	Y[10,11]
83	Forestry Activities	Y[8]	Y[9]	Y[10]	Y[10,11]	Y[10,11]
84	Fishing Activities	Y	Y	Y	Y	Y
85	Mining Activities	Y	Y	Y	Y	Y
89	Other Resource Production or Extraction	Y	Y	Y	Y	Y

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Notes for Table A-2 Land Use Compatibility for Noise Zones

1. General
   - **a.** Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-69 and strongly discouraged in DNL 70-74. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these zones. Existing residential development is considered as pre-existing, non-conforming land uses.
   - **b.** Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 decibels (dB) in DNL 65-69 and 30 dB in DNL 70-74 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 75-79.
   - **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.
   - **d.** NLR criteria will not eliminate outdoor noise problems. However, building location, site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.
2. Measures to achieve NLR of 25 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 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 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. If project or proposed development is noise sensitive, use indicated NLR; if not, land use is compatible without NLR.
6. Buildings are not permitted.
7. Land use is compatible provided special sound reinforcement systems are installed.
8. Residential buildings require an NLR of 25.
9. Residential buildings require an NLR of 30.
10. Residential buildings are not permitted.
11. Land use that involves outdoor activities is not recommended, but if the community allows such activities, hearing protection devices should be worn when noise sources are present. Long-term exposure (multiple hours per day over many years) to high noise levels can cause hearing loss in some unprotected individuals.

B. KEY TERMS

Day-Night Average Sound Level (DNL)

DNL (A-weighted when describing aircraft operational noise) is a composite noise metric accounting for the sound energy of all noise events in a 24-hour period. In order to account for increased human sensitivity to noise at night, DNL includes a 10 dB adjustment to events occurring during the acoustical nighttime period (10 p.m. through 7 a.m.). **See Section 4.3 for additional information.**

Decibel (dB)

Decibel is the unit used to measure the intensity of a sound.

Flight Profiles

Flight profiles consist of aircraft conditions (i.e., altitude, speed, power setting, etc.) defined at various locations along each assigned flight track.

Flight Track

The flight track locations represent the various types of arrivals, departures, and closed patterns accomplished at air installations. The location for each track is representative for the specific track and may vary due to air traffic control, weather, and other reasons (e.g., one pilot may fly the on one side of the depicted track, while another pilot may fly slightly to the other side of the track).

Floor Area Ratio (FAR)

The relationship between a development's floor area and the size of the land parcel on which the development is situated is quantified by a floor area ratio.

Operation

An aircraft operation is defined as one takeoff or one landing. A complete closed pattern or circuit is counted as two operations because it has a takeoff component and a landing component. A sortie is a single military aircraft flight from the initial takeoff through the termination landing. The minimum number of aircraft operations for one sortie is two operations, one takeoff (departure) and one landing (approach).

C. LAND USE COMPARISON

Existing Land Use Generalizations

Appendix C contains the existing zoning and future land use categories for the City of Montgomery and City of Prattville. These were the primary sources of the land use compatibility analysis.

Table C-1

City of Montgomery Existing Land Use (Zoning) General Categorization

DESIGNATION	GENERALIZED LAND USE CATEGORY
Residential Agriculture	Residential
General Agriculture	Open/Agriculture/Low Density
Central Business District	Commercial
Mixed Development-Qualified	Commercial
Central Business District	Commercial
Central Business w/ Qualifier	Commercial
Individual Stores	Commercial
Individual Stores w/ Qualifier	Commercial
Commercial Highway	Commercial
Local Shopping	Commercial
Shopping Community	Commercial
Flood Hazard	Open/Agriculture/Low Density
Institutional	Public/Quasi-Public
Light Industrial	Industrial
Light Industrial - Qualified	Industrial
General Industrial	Industrial
Office District	Services
Patio-Garden Home	Residential
Single-Family Residential	Residential
Townhouse	Residential
Duplex Residential	Residential
Multi-Family Residential	Residential
Mobile Home Park	Residential
Mobile Home Subdivision	Residential
Mobile Home Subdivision - Qualified	Residential
Utility District	Transportation/Utilities
Waterfront Recreation	Commercial

Table C-2
City of Prattville Existing Land Use (Zoning) General Categorization

DESIGNATION	GENERALIZED LAND USE CATEGORY
Neighborhood Commercial	Commercial
General Business	Commercial
Forest, Agricultural, Recreation	Open/Agriculture/Low Density
General Industry	Industrial
Not zoned	Residential
Planned Unit Development	Residential
Single Family Residential	Residential
Single Family Residential	Residential
Single Family High Density Residential	Residential
Manufactured Home Park	Residential

Table C-3
City of Montgomery Future Land Use General Categorization

DESIGNATION	GENERALIZED LAND USE CATEGORY
Campus	Services
Flex Commercial	Residential
Flex Employment	Residential
General Industrial	Industrial
Institutional / Civic	Public/Quasi-public
Potential Open Space	Open/Agriculture/Low Density
Residential Low Intensity	Residential
Residential Medium Intensity	Residential
Town Center	Residential
Downtown Core	Residential
Rural Edge / Conservation Residential	Residential
Open Space / Recreation	Open/Agriculture/Low Density
Career Center / Office	Services
Traditional Neighborhood	Residential
Community Commercial	Residential

Table C-4

City of Prattville Future Land Use General Categorization

DESIGNATION	GENERALIZED LAND USE CATEGORY
Conservation and Green Space 1	Open/Agriculture/Low Density
Conservation and Green Space 2	Open/Agriculture/Low Density
Mixed-Use Residential	Residential
Mixed-Use Commercial	Residential
Open Space	Open/Agriculture/Low Density
General Commercial and Mixed-Use	Commercial
General Industrial	Industrial
Light Industrial	Industrial
General Institutional	Services
Medium Density Residential	Residential
Low Density Residential	Residential

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